



The Bible Pageant—Brave Pioneers

The Myth of the Healthy Savage

In every age and time, those who are discontented with the realities of the world around them long for the life as they think it must have been "in the good old days." The penetrating observations of a prominent nutritionist will awaken many readers from such reveries.

by WILLIAM T. JARVIS, Ph.D.

During the summer between high school and college I earned a scholarship by selling illustrated Bible books for children. My modus operandi was to obtain the names and addresses of Sunday School members from pastors, and then call upon them in the names of their congregations. People always appeared to be trying to make a good impression on me since I seemed to be connected with their churches. I shall never forget the embarrassment of one mother when, as we viewed a picture of Adam in the Garden of Eden, her ten-year-old pointed to it and exclaimed, "Tarzan!"



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Out of this babe's mouth had come an observation which points out that we have many models in our culture pertaining to the nature of man in his primitive setting. Creationists have Adam and the Garden, evolutionists have homo erectus running around in the lower Pleistocene Age, and contemporary culture has Hollywood's Tarzan and his counterparts. No matter which of these models a person is exposed to during his formative years, the image develops of a muscular creature with great athletic prowess living in pristine surroundings, eating natural foods, and enjoying robust health. Thus, all of us are brought up to believe that man in his natural, primitive setting enjoys some kind of super health that eludes the residents of modern civilization.

Numerous reports have been given concerning the disastrous impact civilization has upon the health of primitive peoples when permanent contact is established. The experience of the Eskimos is typical. Physician Otto Schaefer, a specialist in internal medicine who has worked in the arctic for two decades, tells us that when the Eskimo comes to town, "He and his family undergo remarkable changes. His children grow faster and taller, and reach puberty sooner. Their teeth rot, his wife comes down with gallbladder disease and, likely as not, a mem-

ber of his family will suffer one of the degenerative diseases for which the white man is well known." Dr. Schaefer also reports an increasing incidence of diabetes among these primitive people, possibly because of the inability to keep the blood sugar stable after oral sugar loads (see *Nutrition Today* 6 [November/December 1971]: p. 8). Eskimos, on the other hand, who still live in the old way, do not suffer from these problems.

Much attention has been given to the geographic pockets where groups of people are found who seem to enjoy spectacular longevity. Gerontologist Dr. Alexander Leaf, Chief of Medical Services of Massachusetts General Hospital and Jackson Professor of Clinical Medicine at Harvard Medical School, recently visited three of these locations: Hunza, in the Himalayas, Abkhazia in Russia's Caucasus Mountains, and Vilcabamba in Ecuador's Andes. His reports give credence to stories of an unusual number of very vigorous old people enjoying happy, active lives, in contrast with old people in more civilized parts of the world (see *Nutrition Today* 8 [September/October 1973]: p. 4). The one factor which all visitors report from their visits to these places is how physically active the elderly are. Instead of retiring from society and the things which give life meaning, these

people continue to lead productive, meaningful lives within the context of their cultures, and enjoy high status.

Of these three locations, Hunza has received the greatest publicity and is best known. Lowell Thomas brought it to public attention through his Cinerama presentations in the 1950s. Every now and then an article will appear in the newspaper written by a new visitor to Hunza, the land heralded as the Shangri-La of James Hilton's novel, *Lost Horizon*.

Health food advocates have written quite a lot about Hunza's lifestyle and attempted to draw parallels to their philosophies. In 1964 Renee Taylor published *Hunza Health Secrets* in which she told of people who had "no cancer, no heart attacks, and practically no other disease to cut down men and women in the prime of life."

Miss Taylor claims to have observed men as old as 125 years and 145 years playing volleyball. She also says that Hunza is a land where childhood diseases or cripples do not exist.

Another health foods devotee, optometrist Allen E. Banik who traveled to Hunza sponsored by the "People Are Funny" television show, claims to have examined the Hunzacs and found them to be the health subjects of the legends. In his book, *Hunza Land* which he wrote with Renee Taylor, he gives an account of the physical examinations he conducted. By viewing their retinas and testing their vision he concluded that their health was all that it had been claimed to be.

An article in the health foods magazine *Prevention* by Jane Kinderlehrer says that in Hunza, "Cancer has not been invented. Everyone has 20/20 vision. Cardiologists can't find a single trace of heart disease. No one ever gets ulcers, appendicitis or gout. There's nothing unusual about men and women enjoying vigorous life at age 100 or 120."

The *Cancer News Journal*, a publication which promotes a plethora of unorthodox cancer treatments, most of which center around so-called diet therapy is a leading proponent of Laetrile as a cancer palliative. Laetrile is derived from apricot pits, and they point to the use of apricot oil extracted from the pits by the Hunzacs as the reason for their absence of cancer.

Second to Hunza's fame is Abkhazia in Russia's Caucasus Mountains. At the time of Leaf's visit they claimed to have the world's oldest human—Shirali Mislmov, an alleged 168-year-old patriarch who was inaccessible because of travel restrictions. These people amazed Dr. Leaf the most because their lifestyle included a lot of feasting and other habits which ordinarily are associated with shortening life span. It was there he occasionally saw overweight centenarians.

Not all the spectacular reports we hear about the health of the noble savage

are limited to longevity or the absence of disease. Sometimes they involve great feats of human performance. Michael Jenkinson presents a fascinating account of the Tarahumara Indians of the Sierra Madre Occidental of northwestern Mexico. These people are considered to be the world's greatest distance runners. Jenkinson says, "Tarahumara hunters literally run deer into the ground. Once on the track of a deer, a man or several men will continue to jog after it for hours, rarely in sight of the prey, skillfully reading the most minute signs. By the second day of steady chase the fleet animal usually drops, exhausted, and the hunters kill it with knives or rocks."

"Recently," he continues, "a Tarahumara courier was dispatched from the Jesuit Mission Center at Sisoguichic to assess food supplies in several Indian hamlets. He was said to have covered fifty miles of rough mountain trails in six hours, including the stops at each hamlet. Forty years ago, a Tarahumara chief was invited to send runners to a marathon in Kansas. Learning, to his great surprise, that the course was a mere twenty-six miles, the chief sent three girls."

The Tarahumara's favorite sport is called *rarijipari*, a sort of marathon kick-ball race. The race may last for three days and cover up to two hundred miles, with individual laps varying from three to twelve miles at a time. The runners continue even through the night, carrying pine torches to light their way. This is a subject of great curiosity to physiologists, because these remarkable people will burn up more than 10,000 calories during the runs, which represents at least a week's worth of eating for them.

One reason the Tarahumaras haven't been successful in the Olympic games is because of the changes that take place in their diet when they come to an Olympic training camp. Jenkinson says, "He is given beefsteaks to eat and his gaunt gut is filled with eggs and milk and other strange food. His metabolism begins to run crazy. He doesn't sleep much, and when he does, he has weird dreams." The Tarahumaras are accustomed to a simple, essentially vegetarian diet, which is believed to contribute to their success as distance runners.

These extraordinary reports combine with our early images of the noble savage to strengthen in our minds the concept that primitive man enjoys a quality of life that we should somehow seek to emulate. This idea has received great impetus from the "ecology movement." The suggestion is that we abandon scientific technology and return to "nature." And indeed, some have done so in a dramatic way, setting up farm communes and attempting to live directly off the land—an idea that has appeal for many who are tired of the pressures and demands of modern living. Those of us who were raised in "the good old days," however,

might dispute the concept that life was simpler then, after having scrubbed clothes on a washboard, hoed weeds all day, or done the season's canning.

While most of us are not willing to go to the extremes of quitting our jobs in the city and buying a farm in the Ozarks, we do seem to have bought the basic idea. Today modern advertising, which can be said to reflect and reinforce society's thinking, is using the word "natural" in selling every type of product to which the name can in some way be applied. Labels sport, "no preservatives," "no additives," "herbal" or "organic," and salesmen spout, "no chemicals," "nothing that wasn't intended for your stomach." "Mother (and Father) Nature," and other phrases which capitalize on the point.

No one has exploited our concept of the healthy savage more than the health foods industry. It is regularly seen in their publications. Products of all types which were supposed to be beneficial to our health have cashed in on this impression we have of primitive man.

One of the convenient aspects of a myth is that it lends itself to a wide range of interpretations and a great deal of imagination. To illustrate just how versatile our conjecture concerning the nature of our human ancestors is, we can compare the descriptions of two men, both presenting an evolutionary view of early man. Linus Pauling, in his book, *Vitamin C and the Common Cold*, attempts to justify his claim that we need huge amounts of vitamin C daily, by hypothesizing that ancient man ate so much natural foliage, fruits and plants, that he ingested as much as two to four thousand milligrams daily. On the other hand, we have Dr. Robert Atkins, also with a book to sell, who is a proponent of the low carbohydrate diet. Atkins claims that our ancestors didn't eat carbohydrates, but were meat-eaters, and that our departure from that high protein existence is responsible for many of today's health problems. Obviously, both men can't be right. But neither can either be proved wrong, so they are free to make whatever claims they wish.

Fortunately, even though we cannot prove what ancient man was really like, we are not left to conjecture as to what is the actual health picture of primitive man. We can still observe him in a number of places in the world, and probably in every phase of the man's existence from the Stone Age forward. Instead of the healthy creature of our fantasies, scientists have found that primitive man exists in a condition far below the health standards we enjoy in modern civilization, and this includes even those who live in the apparent Shangri-La's of the world. You may find this surprising in light of some of the spectacular reports we have cited, but a more thorough investigation reveals a clearer picture of the health of the noble savage.

First, if we are to obtain a completely true picture of the state of the health of primitive peoples, we must look at all of the facts, not just sort out the glamorous. We must analyze the important factors which are present, and also, as we shall see, be careful about accepting every report at face value, because many of them appear to be less than accurate.

ABSENCE OF RELIABLE HEALTH DATA

The factor which lends itself best to perpetuating the myth of the health of the noble savage is the absence of reliable health data among the primitives. These people know nothing of calculating birth and death rates, the prevalence of disease, causes of death among their tribesmen, and often don't even know how old they actually are.

Russian scientist Zhores A. Medvedev recently explored the claims of longevity by the residents of Russia's Caucasus. Apparently the people have been deliberately lying about their ages for years. Not only have they been encouraged to do so by a situation where very old people have the highest authority, more respect and honor, and receive publicity, but in recent decades, district, regional and national attention has produced a sort of competition for longevity. Hence, records for being the oldest have been climbing, with the ages becoming more and more exaggerated.

Medvedev lists more than a dozen factors which refute the longevity claims of these people. Foremost is the total absence of reliable documentation. Not one Caucasus centenarian can produce evidence to validate his age. Other points include theoretically impossible age distributions, a sudden switch of distribution of the sexes among the oldsters as men who trail the females before age 100, but gain on the females and eventually pass them as age claims soar. Also, the existing vital statistics on longevity are inferior to other areas of the USSR, but become superior when documentation ceases. Metabolic studies do not support the centenarians' claims either. Compared to those in other countries with well established ages, the Russian oldsters appear to be in the 55 to 60 age range, not 100 to 110.

Renee Taylor's claim that in Hunza she saw men 125 and 145 years old playing volleyball is contradicted by Dr. Leaf's report that the oldest citizen of Hunza, Tulah Beg, was only 110 years of age, and the second oldest claimed to be just 105. Dr. Leaf notes that the dating of the Hunza's age is particularly difficult because of the fact that their language has no written form; therefore there is a complete absence of any record keeping.

Another discrepancy exists between reports that there is no cancer, heart disease, childhood diseases and so forth, in

Hunza. In 1955 a group of Kyoto University medical scientists from Japan made a study of the health of the Hunza people. They had been led to believe that Hunza was a sort of Shangri-La, as have most of us. It was their purpose to study the Hunzacs and share whatever valuable information they learned with the rest of the world.

The health team performed detailed examinations of 277 Hunzacs. To their dismay, rather than finding them to be superior, disease-free creatures of the legends, the health of the Hunzas was, in their words, "in a miserable state." Both cancer and heart disease were found and each individual was found to have some health defect. The Japanese team reported, "We had to teach them how to cure disease, instead of learning how to be free from diseases."

Recent correspondence with the Pakistan Embassy in Washington verified the existence of cancer in Hunza. Cancer of the lung, stomach, testicle, mastoid, and lip are currently under treatment.

Though unable to conduct a statistical study on the infant and childhood diseases because of insufficient time, the health team made it known that a great many Hunza children die during infancy, mostly from skin disease and undernourishment. The prominent diseases found among the people of Hunza were goiter, conjunctivitis, rheumatism and asthma. Of greatest concern was the spread of tuberculosis among them.

Why is there such a disparity between the reporting of the scientists and the accounts of Miss Taylor, *Prevention* magazine, *Cancer News Journal*, Dr. Banik and others? The answer seems to be that all of these sources are representatives of the negative philosophy of the so-called health foods movement. They seek to teach that our agricultural soils are depleted, modern food technology is misguided, the government protection agencies are not doing their jobs, orthodox medicine is "organized" and corrupted, you can't trust the American Cancer Society, American Medical Association, Food and Drug Administration and so on. This constant attack certainly undermines public confidence in orthodoxy, because without these beliefs there would be no justification for a substitute source of foods. The health foods industry owes its existence to this negative philosophy.

Renee Taylor uses her book to promote food supplements, to declare the food supply dangerous because of poisonous sprays, soil depletion, and cooking, and to recommend the reading of many other books about health foods. Many of these appear on the "nutrition books not recommended" list provided by a substantial number of nutrition scientists. Banik's credentials as an optometrist certainly limit his competence to conduct thorough physical examinations. Also,

given the area of his expertise, one cannot help but wonder why he failed to notice the conjunctivitis, which according to the Kyoto University group, was one of the "predominant diseases." He cites what he considers to be our "depleted soil" and "processed food." He reveals his personal concepts by stating, "Our health food stores offer the natural foods, fruits and vegetables grown in enriched soil which comes closest to providing our bodies with the complete nourishment they must have to maintain health and ward off disease some of them now carry."

Prevention, Cancer News Journal and other health foods publications present a continual barrage of attacks on the food supply, the Food and Drug Administration, orthodox medicine, and so forth. Health foods, organically grown produce, herbs or nutritional supplements are offered as preventives, palliatives, or cures for practically every disease of modern civilization with the perpetual implication that "natural" is better, a la the health of the noble savage. The paradox is that while the health foods promoters, megavitaminists and like-minded people argue the case for supernutrition, the available evidence points in exactly the opposite direction. Not only do the observations made of old people enjoying extraordinarily good health reveal undernutrition rather than supernutrition to be the rule, but laboratory and field studies do as well. McCay and Ross both have shown that nutritional deprivation short of manifestation of deficiency diseases, and protein restriction, significantly improve the longevity of animals.

McCay was able to extend the maximum life span of rats 50 to 100 percent by feeding them a nutritionally adequate, low calorie diet early in life. These findings have been confirmed by several other laboratories. The animals' diets are restricted to the point that their growth is stunted and sexual development delayed. It is theorized that the mechanism at work involves a slowing down of the cell's biological clock.

While McCay and others were able to extend life span and curtail disease by underfeeding animals very early in life, Ross has been able to curtail or significantly lengthen the life span of mature animals by varying the level of calorie restriction and the protein/calorie ratio of diets. Some animals equilibrated a 180-year life span for humans.

David G. Jose cites a number of studies which show that cancer incidence is reduced by malnutrition (see *Nutrition Today*, 8 [March/April 1973] p. 4. He mentions one particular strain of mice in

The Rocky Road to Paradise: a half-track of the Haardt-Citroen Expedition exploring the Hunza area near Gilgit in the Karakoram Mountains of northeast India in 1931 finds the going tough on the local highway. →

which 95 out of every 100 can be depended upon to develop mammary cancer when on a normal, adequate diet. The incidence is reduced to only 5 of 100 when the amount of protein in their diet is severely curtailed. He also reports that in a twenty-year study of beef cattle, life carcinoma is greatly reduced by grazing on poor rather than prime pasture. William B. Kannel questions the wisdom of having overdone diets in modern, technological society. Pointing to principles of animal husbandry he asks if we haven't inadvertently been producing big, fat humans which are intended neither for draft work or for the kill, and unwittingly predisposed ourselves to coronary heart disease.

SURVIVAL OF THE FITTEST

One of the most important factors generally ignored by those who would have us believe in the myth of the healthy savage is the mechanism of survival of the fittest. This fundamental law of nature culls out the weak members of a group, leaving only the strong to survive. Under primitive circumstances where this law is effectually at work, one could expect to find high infant and childhood mortality rates, a low average life expectancy, and a few old people made of tough genetic fiber who have survived the rigors of their environment. These factors can work together to produce small, stable population groups with a relatively high proportion of old people. Reports which compare the ratio of oldsters within a population as a measure of health status, can erroneously conclude that a group with more old persons per capita is in a better state of health;

when, in fact, they may be seeing reflected a drastically poorer survival rate.

An average infant mortality rate of about 50 percent is commonly found among primitive people throughout the world. Among the extraordinary Tarahumaras it is even worse. Jenkinson states, "Only one out of five Tarahumara babies lives to age five; the rest succumb to malnutrition and disease." That's a mortality rate of 80 percent before age five!

While the vigorous environment of the Tarahumara has made them the world's greatest runners, it has done so at a price far higher than any civilized person would wish to pay. Even in Hunza, the mortality from birth to age ten has been found to be 30 percent, with another 10 percent dying before age 40. Compare these figures with the less than 3 percent mortality rate found in the United States from birth to age

fourteen. In civilization, both the weak and strong survive together and are given the opportunity to make a happy, satisfying life.

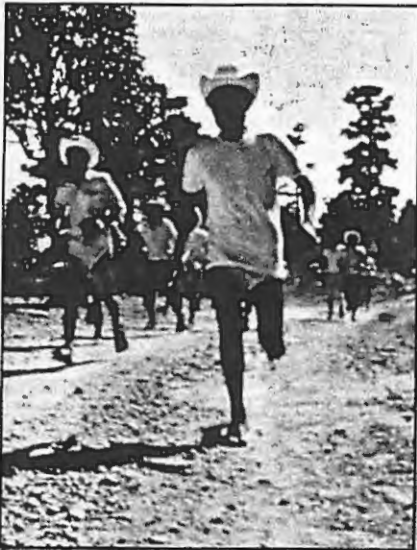
Many wonder if our tampering with the law of survival of the fittest hasn't weakened the species. It has been pointed out that because we can now greatly prolong the life span of persons with diabetes, a genetically-linked disease, that diabetics now live long enough

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to transfer the defective genes. This is believed to account for the ever-increasing amount of diabetes in civilized countries, and predictions have been made that the whole human race may eventually become carriers. This omi-

PHOTO COURTESY NATURAL HISTORY



nous forecast can be thwarted if modern man will use the same kind of intelligence which enables him to gain control over diseases which plague him. Family counseling that encourages young couples who may pass defective genes to their offspring to adopt children instead, is one answer to the problem.

Doesn't this example prove that the process of natural selection is better, and that man's departure from nature's fundamental law of natural selection spells ultimate disaster? Not necessarily. Natural selection has been just as dysfunctional in the case of sickle cell anemia. People with this disease are immune to malaria. It is believed that the reason we

find so much of the disease among African blacks and their descendants is that large numbers of normal people died of malaria, leaving only the genetically-defective carriers of sickle cell anemia to survive and propagate, spreading the disease through the race.

Sickle cell anemia can be thwarted in the same fashion as diabetes, through genetic counseling. The point is, man will either have to continue to control nature or nature will control him. The "nature children" of the counterculture who have taken to the woods in their back-to-nature kick are discovering this. Reports of malnutrition and disease indicate that some of them are rediscovering the dark

This Tarahumara Indian boy's home is Mexico's isolated Sierra Madre mountain region—250 miles southwest of El Paso, Texas—where the world's toughest long-distance runners live. In their own language, the Indians appropriately call themselves *Raramura*—meaning the footrunners.



PHOTO COURTESY WIDE WORLD PHOTOS

ages rather than a Garden of Eden (see *Nutrition Today* 9 [January/February 1974]: p. 20).

TIGHTLY CLOSED ECOSYSTEM

Another factor very often passed over when assessing the state of health of primitive people is that they always exist within a tightly closed ecosystem. This means that they have become adapted to a very specific environment. Any species of life so highly adapted to a limited area will be extremely fragile, and though able to exhibit a good degree of health within its natural setting, its members will survive well only in such similar surroundings.

This is precisely what we find occurring when civilization establishes contact with primitive peoples. Almost invariably they attempt to abandon their primitive ways and adopt a lifestyle of the more dominant culture. The inability of their highly specific immunological systems to withstand the diseases their new acquaintances have long ago adapted to, and now carry without harm to themselves, often leads to serious outbreaks of epidemics heretofore unknown to the primitives. Even a disease such as measles, which poses only a minor threat to civilized man, can be a fatal scourge to primitives who have not built up the needed biological resistance.

In a less dramatic way, adopting the lifestyle of western, technological man appears to take its toll in degeneration among the primitives. A case in point is what happened among the Maoris of the South Pacific. Ian Prior, M.D., director of the epidemiology unit at the Wellington Hospital in Wellington, New Zealand, says, "In the mid-1800s there were almost 250,000 Maoris in New Zealand. The white man's ways and afflictions soon reduced their numbers to 90,000, so that by the turn of the century many regarded the Polynesians in New Zealand as a dying race. However, the development of natural resistance, the emergence of Maori leaders who encouraged the people to accept the advantages of European medicine and education, and the rapid rise in the assimilation of Maoris into European society, completely changed the situation for these people. Today, they have a rate of natural increase in their numbers which is one of the highest of any group of people in the world" (see *Nutrition Today* 6 [July/August 1971]: p. 3).

Despite this improving picture, Dr. Prior reports that the life expectancy among Maoris living in New Zealand is still only fifty-seven years, compared to seventy-two years for the European. Careful dietary analysis shows that the nutrition practices of the two groups are quite similar. The Maoris still seem unable to handle the lifestyle as well as the Europeans who have had considerably



Jean Jacques Rousseau (1712-1778) perceived primitive man as a noble savage, free of the corruption of civilized life.

more time to adapt to it. This is evidenced by increased incidences of gout and diabetes among the Maoris. It is also interesting to note that the Maoris have lower mean serum cholesterol levels despite larger intakes of animal fats and sucrose than their European counterparts. The ischemic heart disease rates, however, are quite similar among the two peoples.

A classic example of an apparently well-intentioned but misguided application of the myth of the healthy savage involves a book entitled, *Nutrition and Physical Degeneration* by Weston Price, D.D.S., written in the early forties. This work is significant because it is still widely quoted today by so-called nutrition-oriented dentists.

Price believed that the human race was degenerating not only physically, but mentally and morally because of the modern diet. As a dentist he concentrated his observations to include arch malformation and extrapolated his observations to include character and race decay. He blamed soil depletion, white flour, and sugar primarily for the problems he saw. In chapter one, entitled, "Why Seek Wisdom from Primitive Peoples," he reveals his preconceived notions about the health of primitive peoples.

His book is a combination travelog and album of pictures he took of native people living under varying circumstances, and the skulls of their ancestors.

While the photographic work is good, the accompanying data is of questionable value because of the obvious view he entertained about the healthy savage. For example, on separate occasions when examining persons who were on mixed diets—i.e., partially primitive and partially civilized—he rationalized that the one whose dental decay was minimal was due to the primitive portion of the diet, while the other whose dental decay was greater, was so because of the civilized portion. Neither diet was quantified in any way to permit comparative analysis.

Price's observations about increased dental caries among primitives is accurate, and the involvement of sugar certainly is not questioned either. But the inferences he made do not seem to me to be warranted, again, apparently because of his preconceived notion of the health of the noble savage. This seems so because nowhere does he record any health problems associated with primitive living, which is totally inconsistent with what others have seen and still see today. For instance, he never mentions periodontal disease, a condition which is nearly always present in primitives. He credited the absence of caries in the skulls he examined to superior diet and good health, without acknowledging the possibility that the lack of decay was due to malnutrition. Dental researchers have repeatedly observed that caries do not occur very frequently in malnourished people. The good dental arches he observed could easily have been due to the native's death at an early age, before periodontitis could cause much bone loss.

Cady, Messler, and Schour reported that studies of malnourished children in Europe revealed a much lower rate of dental decay than was found among children in the United States who appeared to be well nourished. Marshall-Day found a similar low rate for caries in a famine area of India where nearly 75 percent of the twelve-year-old children were free of cavities. This situation is in marked contrast to that in Rochester, New York, where less than 1 percent of the children were found to be free of cavities. Marshall-Day concluded, from his general findings, that teeth do not share in the general bodily deterioration which accompanies dietary deficiencies.

PRIMITIVES ABUSE THE CIVILIZED DIET

Despite Price's experience as a researcher (he worked with vitamin D and its role in calcium utilization in the 1920s) he did not quantitatively assess the diets of his subjects, even though his treatise was on nutrition and physical degeneration. Had he done so, he may have discovered as others have, that the dietary habits of primitives appear to be an abuse of the civilized diet, rather than

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something representative of even the average white man's diet, let alone the ideal recommended by nutrition science.

It would appear that a major adaptation problem of primitive people in their encounter with modern civilization is their apparent inability to discipline their wants. In the case of the Eskimos cited earlier, dietitian Andree Beaulieu says that Eskimos and Canadian Indians are hooked on sweets. She and her study group were "stunned by the quantities of hard candies, chocolate bars, sweet cookies and chewing gum that they bought at the local store." She laments, "Before the white man came they had never tasted sweets. Now, it seems they crave little else. Candy is the favorite food of the North." Primitives seem to lack self-discipline when given access to items which tantalize their sensory responses like alcohol, sucrose, salt and so forth. Perhaps this is because the disciplined aspects of his life under primitive conditions were previously imposed upon him by circumstances. The type of local plant and animal life determined his food and shelter, and the weather dictated where and when he hunted and gathered. It was "feast or famine" depending upon nature's whims. Thus, dominated by external controls, his internal controls had no chance to develop. Such controls are essential when constantly confronted with not only plenty, but with items which can easily be overindulged.

From the point of view of adaptation, modern civilized man can take heart. He has demonstrated the greatest ability to adjust to and thrive in the widest variety of ecosystems. Rather than envying the noble savage's health, we moderns should stand wide-eyed at the picture of civilized men surviving for extended periods of time on and under the sea, in arctic outposts, mountains, deserts, and even into the reaches of outer space—a tribute to the level of knowledge of nutrition science as well as our adaptive mechanisms.

Civilized man is also in danger of his excesses. According to the Framingham heart study, our most prevalent cause of death is our excesses. The free enterprise system's ability to supply our every want and need has created a plethora of products and services which can saturate our every desire. The inability to limit our choices only to items that are good for us, or to amounts we can handle wisely, often exceeds our best health interests.

All things considered, civilization has the most to offer us for health maintenance. This does not mean, however, that we can't learn some lessons from primitive people that could improve our lot. Those lessons include:

- Leading a more vigorous life—As we make our environment safe and more secure, it also becomes softer and less demanding on our primitive physical

powers. Our bodies are designed for activity, and without proper exercise they degenerate.

- Self-discipline—The sage advice of avoiding that which is harmful and not being excessive in that which is good, is still valid.
- Adopting a simpler diet—This includes the use of more vegetables, whole grains, and unrefined carbohydrates, along with a reduction in our intake of fat, sugar and salt; reducing our daily calorie intake and increasing our exercise to a point that we develop the leaner, sinewy physique of the primitive.
- Developing a new image—Changing the status symbols of our society from fat cigars, fat waistlines and big automobiles, to lean-bodied non-smokers who use their muscles as well as their brains. A major reason why the Tarahumaras run so well is that the ability to run has high status in their culture.
- Not putting our old people on the shelf after sixty-five years of age—Human beings rust out from disuse a lot faster than they wear out from use. Participating in the mainstream of life (though not quite as much as when younger) and being respected for their greater experience in life, seems to contribute to longevity and certainly would enhance the quality of their lives.
- Simplifying our lifestyles—In our complex society it is easy to try to do too much all at once. We often get caught up in materialism and overachievement to the point that our possessions own us, and our achievements demand greater and greater performance each time—another form of bondage. Primitive life is simple and involves stresses which are less self-destructive. Reexamining our goals in life and reestablishing priorities can help us toward a simpler, healthier life.

The key to getting the most out of what modern life has to offer is not found in a return to the darkness of our primitive past. Nor is it found in the adoption of the off-beat philosophy of food faddists or some other spurious siren of unorthodoxy. Rather, it is to use our intelligence to develop a more sensible lifestyle in our overstimulated society, and learn to choose more wisely from what is available in our superabundant supply system. It may then be possible for us to enjoy the best that both worlds can offer.