Southwest Regis-Tree of Heirloom Perennial Species and Varieties

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ALMONDS (*Prunus dulcis)*

(Texas) Mission. Almonds first came into the Southwest in a delivery to Juan de Oñate at San Gabriel (near Taos) New Mexico in 1698. But it was not until 1891 that someone spotted a chance seedling in Texas with unique characteristics. It was first called Texas or Texas Prolific, but later became known as Mission or Texas Mission due to its association with old Spanish era churches. It was soon introduced to other parts of the Southwest, and its production took off on a large scale when it was introduced to Acampo, California.

This heirloom has hard-shelled nuts with relatively small kernels inside, roughly 25 to 28 per ounce. The trees are prolific bearers and extremely vigorous when young, but growth and yield decline markedly with age. The tree has an upright growth habitat, and is easy to train to facilitate production, which occurs mostly on the spur branches rather than the shoots. Because it is susceptible to mallet wound canker, it is short-lived wherever this *Ceratocystis* infection occurs. It is also sensitive to alkaline soils and saline irrigation. Its tendency to bloom well after frost in the spring keeps it popular among dwellers in river valleys where temperature inversions nix other varieties.

APPLES (*Malus X domestica)*

Arkansas Black. Believed to be a seedling derived from a Winesap, this heirloom had its origin in either Benton County, Arkansas around 1870, or nearby Washington County, where John Crawford settled on the land and began an orchard around 1842. Its synonyms include Mammoth Black Twig and just plain Arkansas, a name given to it by Colonel E. F. Babcock, who featured it at the Arkansas Exhibit in New Orleans in 1884. Beginning in the 1890s, it was widely planted in the Deep South and Southwest until other, more prolific varieties sent it into decline.

This extremely lovely apple turns from deep reddish purple to black purple near maturity. It is medium to large in size, and round with waxy skin. Its creamy golden flesh is crisp, very firm, sweet, juicy, and pleasantly flavorful, with a distinctive aroma that carries over into cider. It is also used fresh as a dessert apple, and cooked into sauces. It is an excellent keeper with a flavor that mellows with after-ripening in a cold cellar.

The large vigorous trees of this heirloom need another variety present for cross-pollination, but still produce rather light yields. The trees are resistant to cedar-apple rust.

Ben Davis. The origin of the Ben Davis Apple dates back to 1799 when William Davis and John Hills brought a young seedling from either Virginia or North Carolina to where they settled at Berry's Lick in Butler County, Kentucky. Others have placed its origin in Washington County, Arkansas, about 1880. Captain Ben Davis, kin to the other two men, planted the tree on his land where it began to attract attention. They took root cuttings and planted them out as a full orchard,

which provided root suckers to many others passing though Kentucky. By the end of the Civil War, millions of Ben Davis suckers had spread throughout the South and Midwest.
Apple historian Tom Burford reminds us that this tree was called Mortgage Lifter by growers who got out of debt by shipping this apple down the Mississippi and out on ships from New Orleans. As it spread south, north and west, many of its growers forgot the Ben Davis epithet for this apple, and offered it a different folk name in each locale where it took root. Many local synonyms for this variety include Baltimore Pippin, Baltimore Red, Baltimore Red Streak, Ben Davis, Carolina Red Cheek, Carolina Red Streak, Funkhauser, Hutchinson's Pippin, Joe Allen, Kentucky Pippin, Kentucky, Kentucky Red Streak, Kentucky Streak, New York Pippin, Red Pippin, Robinson's Streak, Tenant Red, Victoria Pippin, Victoria Red, and Virginia Pippin. It is grown in northern Arizona as well as southern Utah, where the fruiting season is long enough to mature the variety properly.

The fruit of Ben Davis is typically uniform in shape and size, which is medium to large. Its shape is usually round, especially at the base, though infrequently it is elliptical, conic or oblong. While maturing, its clear yellow or greenish skin is tough, and thick enough that it seldom bruises. Its skin is quite waxy, glossy or bright, and smooth. The green or yellow basal color is overwhelmed by a wash of splashes and stripes of bright carmine, often with subtle dots of white or brown. At maturity, it is a deep carmine or red striped apple. The flesh is whitish, tinged slightly yellow. It is somewhat coarse, dry and wooly, not very crisp, but firm, slightly aromatic, juicy, mildly sub-acidic, and keeps for over a year. However, its rather unspectacular taste and texture has long been the butt of jokes among apple enthusiasts. Madonna Hunt of Boulder Utah quipped, "Those Ben Davis apples? Yes, they were good keepers, because no one wanted to eat them!" Tom Vorbeck put it bluntly, "It keeps like a rock, but it's not a very good rock." Keith Durfey apprenticed to an apple expert who claimed he could be blindfolded and still tell any variety by flavor. He was given a piece of cork by his students at the end of a long sampling. He sat blindfolded for a long while, then quipped, "You may have stumped me for once, but I believe that's the flavor of one of those old Ben Davis apples!"

Although never rating high in flavor, nurserymen like Ben Davis because of its free-growing habit and the rapidity with which trees produce fruit of marketable size. The tree is hardy when exposed to a range of climatic extremes, remaining healthy and vigorous. Although not particularly long-lived, it bears annually and abundantly from an early age. Its top growth can be rather dense, so when pruning young trees, special care should be taken to keep its shape open and spreading. This offers its fruit an opportunity to color well.

Capitol Reef Red. An apparent sport or chance seedling from Red Delicious or related heirlooms found, this is a newly-recognized variety known only from Capitol Reef National Park's historic Fruita orchards near Torrey Utah. However, scion wood has been propagated by the Van Well nursery in Wenatchee, Washington, and by Dan Lehrer of Flatwood Flower Farm, of Sebastopol California for future distribution. It was discovered in the Fruita orchards around 1994, and propagated to produce some 80 trees.

Capitol Reef Red is distinct from Red Delicious in its prolificalloy clustered spur-type fruiting on downward curving side branches, and its characteristic patterns of splashy russetting on the upper half of the fruit, and dotting on the lower half. Otherwise much like Red Delicious, it is a

pleasantly sweet, juicy, crisp fresh apple, well-suited to pies as well, but not tart enough for cider. The trees is similar to Red Delicious but its dense branches are prolific bearers that become so heavily laden with nearly stem-less fruit that they bend toward the ground, but do not break. This "new" heirloom" is uniquely adapted to the canyon microclimates of Utah's slickrock country. It is honored on the Slow Food Ark of Taste.

Golden Delicious. Unrelated to Red Delicious, the Golden Delicious also began as a volunteer seedling, perhaps of Grimes Golden, on the hillside farm of A.H. Mullins near Bomont in Clay County, West Virginia. It was originally called Mullin's Yellow Seedling. In 1914, William P. Stark bought rights to the tree's legacy for five thousand dollars, renamed it, and began to offer Golden Delicious through the Stark Brothers Nursery out of Missouri. Sure that it would be commercially in demand, Stark protected his investment in a rather formidable, locked cage that was equipped with a burglar alarm to discourage would-be bio-pirates. Some nurseries that offer the apple under the name Yellow Delicious breached the Stark patent.

Tall and almost conical in shape, this apple tends to be large. The skin of a ripened Golden Delicious is pale yellow and thin. It will, however, have a chartreuse hue if picked prematurely or a darkened yellow hue if picked when over ripe. Its flesh is firm, crisp and juicy, but may be stained with red. Once you've been introduced to it, its flavor and fragrance remain unmistakable. The Golden Delicious strikes some cooks as somewhat bland for use in cooking, but it can be used for pies and sauce with little or no sugar. Its distinctive aroma imbues sweet ciders, both hard and soft.

It ripens relatively late in many places, from mid-September through late October. Its skin is quick to shrivel if the harvest is left at room temperature, but Golden Delicious often keep well if refrigerated in a crisper or in a plastic bag.

Granny Smith. The first green apple to become well-known among American consumers, Granny Smith was discovered by Mrs. Anne "Granny" Smith growing on a creek in Ryde, New South Wales, Australia in the early 1860s. It appears to have been a chance seedling from some discarded French crab apples that Granny and her husband Thomas Smith brought back from either Sydney, or the island of Tasmania, depending on who told the tale. When it fruited in 1868, Granny used its fruit for cooking, but her grandson claimed it was better eaten fresh. The Smith family began to propagate it in their orchard and market its fruit in Sydney, where it rapidly gained popularity. It began to be exported to England in the 1930s, and soon afterward was introduced to France, Spain, Italy and the United States.

Granny Smith fruit are medium to large sized, with a somewhat rectangular or truncate conical shape. Its bottom is convex, and ribbed at the eye. Its skin ranges from a grassy green to yellow green, with a fine netted russet appearing at the time of ripeness. Its flesh is greenish to yellowish white in color, and its texture is crisp, and so firm that it is bruise-resistant. Its mild flavor is subacid, and moderately sweet. The harvest season for Granny Smith is relatively late in the fall. Considered to be excellent both for eating fresh and for cooking, Granny Smith keeps its texture during baking and does not get mushy. Regarding its firmness, apple historian Roger Yepsen goes further, by claiming that it is "resilient as a tennis ball…holds up well in shipping [and] will tolerate a half year of cold storage." Not suited for cider, it is fine for pies.

Gravenstein. This very old triploid heirloom may have emerged in Russia, Italy or Germany. Its present name is associated with the Castle Grefenstein in the Schleswig-Holstein region of the Danish-German borderlands. It was well-known and widely-distributed throughout northern Europe by the late 1600s. Some sources suggest that Gravensteins first came to North America directly from Germany, around 1790. It was introduced to England around 1820, and not long after, members of the London Horticultural Society sent their selections on to Massachusetts and Nova Scotia. About the same time, Russian immigrants to northern California established a distinctive Gravenstein production area on the West Coast. Its synonyms are numerous, as are the special selections (Bank's, Mead, Rosebrook) made from the core stock. The Northern California ecotype found around Sonoma is honored by inclusion on the Slow Food Ark of Taste.

Gravensteins are large, oblong, slightly flattened and ribbed, summer apples. They are thin-skinned, greenish or orangish-yellow fruit emblazoned with red stripes and a pinkish orange blush. Their creamy flesh is crisp, fine-grained and juicy. They are not only excellent for pies and sauces, but serve well for juices and ciders.

The trees are rather hardy, resistant to red spiders, but slow to bear and ripen unevenly. It consistency of fruiting is enhanced by heavy pruning. In some localities, it requires the presence of another cross-pollinating variety for good yields.

Grimes Golden. Also known as Grimes and Grimes Golden Pippin, this heirloom was probably selected by Thomas Grimes on his mountain farm in Fowlersville, near Wellsburg, Brooke County, West Virginia. Some suggest its discovery occurred around 1804, while others date it to 1832. However, folk stories link it to an upstart Pippin planted by Jonathan Chapman, aka Johnny Appleseed, who did in fact found an apple nursery in Wellsburg with his brother in 1806. This heirloom literally launched the early fruit industry in West Virginia, and spread through the South and all the way to the West Coast by the end of the nineteenth century.

A bright, somewhat large, oblong apple, it has a rich golden color that surpasses that of its progeny, the Golden Delicious. Its creamy yellow flesh is crisp, fine-grained, and is sometimes tinged with orange hues. Mildly spicy, with hints of coriander, its perfumed flavor is never cloying. Like many heirlooms associated with Johnny Appleseed, Grimes Golden harvests were often dedicated to making hard ciders in the heart of Appalachia. It also passes as a fresh dessert apple, an ingredient in sauces and pies, but does not hold up well when baked.

The trees are self-pollinating, good annual bearers, and moderately resistant to fire blight and cedar-apple rust.

Jonathan. This classic American apple, kin to Esopus Spitzenburgs, originated in 1826 as a sport on the farm of Mr. Philip Rick of Woodstock, Ulster County, New York, where the original tree stayed alive at least until 1845. The first published account which we find of the Jonathan is that given by Judge J. Buel of Albany, New York, who then listed it as the (New) Esopus Spitzenburg, with the synonym Ulster Seedling. A bit later, Buel simply called it the New

Spitzenburg, but the next name he gave it superseded all others: Jonathan, in honor of Jonathan Hasbrouck, who had first called the judge's attention to the unique traits of this sport, which he had noticed growing on a scrubby hillside on the old Rick farm. It spread quickly after that, soon ranking in the top six of American apples in terms of sales. It is now grown not only in North America, but in Italy, Austria and Poland as well.

This popular heirloom and commercially-renowned apple can be exceedingly beautiful at maturity, though it is not as large or as good of a keeper as its Esopus Spitzenburg parent. The shape of this apple may be round, slightly conic or ovate, and medium to small in size, or somewhat truncate with a deep furrowed bottom basin or cavity. Its tough but thin, smooth skin may be pale yellow in undertones that are completely covered with deep carmine hues. These hues deepen into lively reddish-purples on the side exposed to the sun, and clear pale yellows on its shaded side and in its basin. If it does not get full exposure to the sun, the skin may be red-striped in appearance, exposing minute dots. Its flesh may be whitish or pale yellow, tinged with a bit of red. The flesh is usually firm, stained with red, moderately fine, crisp, tender and juicy. Its flavor varies from tart to mild, often aromatic, sprightly subacidic. It is usually of excellent quality whether eaten fresh as a dessert, cooked into sauces, or used for tart ciders.

Jonathan exceeds many of its Spitzenburg kin in hardiness, productivity, health and vigor. It is widely-adaptable for growth in a wide range of climates, where the trees can be either moderately vigorous or slow in their growth and maturation. The trees may have a round or spreading shape, sometimes with drooping, dense branches.

King David. First encountered in 1893 as a volunteer in a hedgerow on the farm of Ben Frost in Durham, Washington County, Arkansas, the King David may be an accidental hybrid between a Jonathan, and an Arkansas Black. Within a decade of its discovery, the Stark Brothers Nursery began to distribute it nationally through its mail order catalog.

The King David is a medium sized, tough-skinned fruit. Its green basal color is overlaid by the deep maroon, purple and black hues of an Arkansas Black. Its yellow flesh is crisp, firm, and sprightly acidic. Its rich, spicy flavor is almost wine-like in complexity. This is one of the most versatile apples, being equally suited for golden yellow pies, soft ciders, sauces, and eating fresh as a dessert.

King David apples bear early on trees that become quite large. They are resistant to fire blight, scab, and cedar-apple rust.

Lodi. Also known as Yellow Transparent or Improved Transparent, this selection was made in 1911 by R. Wellington of the New York Testing Association, which later became the New York State Agricultural Experiment Station of Geneva. It appears to have been a cross between Montgomery and White Transparent. It remains extremely popular in some regions, and is available from more than three dozen nurseries.

Lodi is a large green cooking apple whose skin is actually clear yellow when examined closely. It has firm white flesh that is mildly subacidic, so that it is simultaneously sweet ant tart; it is

crisp and juicy. When it reaches full size, the fruit is irresistible for pies, for fine, frothy white applesauce, and fresh eating.

It ripens early on large, dependably productive trees that require cross-pollination. They are resistant to apple scab. The fruit are less vulnerable to bruising than are other Transparents.

Maiden Blush. Known by several synonyms, including Lady Blush, this is one of the oldest heirlooms to originate in North America. Discovered in New Jersey well over two centuries ago, it became one of the most popular apples in the Philadelphia markets in the nineteenth century. It remains quite popular today, still being offered by some sixteen nurseries scattered across the United States.

Maiden Blush has perfectly round fruit, with a tough skin resistant to the tooth. The skin is thin, smooth and waxy, underlain by a yellow that blushes to crimson cheeks as it reaches maturity. The flesh can be white or pale yellow-tinged, but is always crisp and tender. It is fine for cooking, drying, baking, or making into soft cider.

The trees are vigorous; they bear early and annually, but over a rather long season. They are cold-hardy but susceptible to scab.

McIntosh. This heirloom is originally from Dundela, Dundas County, Ontario, Canada. It was discovered by immigrant John McIntosh near Dundela in 1811. Its local nursery propagation began around 1835, but it was not introduced into trade until 1870 by John's son, Allan McIntosh. The McIntosh is derived either from a Saint Lawrence seedling, or a cross between a Fameuse and a Detroit Red. McIntosh has in turn fathered many well-known varieties, such as Cortland, Empire, Macoun, and Spartan. The fruit is good for fresh eating, pies, and makes an aromatic cider. It was the replacement variety for the great Baldwin orchards of New England that were destroyed by the 40 degrees below zero temperatures during the winter of 1933-1934.

McIntosh fruit are medium to large, and quite uniform in shape and size. It is typically round or oblate, somewhat angular, and strongly or weakly ribbed. Its skin is thin and readily separates from the flesh. The skin is noticeably tender, smooth and therefore easily bruised. Its underlying skin color is clear whitish-yellow or greenish, but it is deeply blushed with bright red, and striped with carmine. Fruit exposed to the sun is richly colored, dark, almost purplish-red, so much so that the carmine stripes may be completely obscured. The flesh of a McIntosh is white or slightly tinged with yellow, sometimes veined with red. This apple is firm, fine-textured, crisp, tender, very juicy, agreeably aromatic, perfumed, sprightly, and subacidic. It becomes mild and a bit sweet when very ripe, but then lacks firmness suitable for packing and long distance transport. It is among the best apples.

Maturing from October to December in late-frosting zones, the McIntosh produces a reliable crop that begins to bear early, before offering an extended season of fruit. It may yield good crops biennially or even annually. However, the crop ripens unevenly, making it suited for two or three periodic pickings two to three weeks apart.

Red Astrachan. This widely-distributed heirloom originated on the Volga River in Russia several centuries ago. It was first noted by Swedish botanist P.J. Bergius in 1780, having been grown in Sweden for some time. It was introduced to Western Europe and England by 1816, and then crossed the ocean to the US in 1835. Since its arrival in the United States, this heirloom has picked up many additional folk names as synonyms: Abe Lincoln, American Red, American Rouge, Anglesea Pippin, Anglese Pippin, Astracan, Astracan Rosso, Astracan Rouge, Astrachan, Astrakhan, Beauty of Whales, Carmin de Juin, Castle Leno Pippin, Cerven Astrahan, Deterding's Early Deterling's Early, Duke of Devon, Hamper's American, Rother Astrachan, Transparent Rouge, and Waterloo. The name Abe Lincoln came from its long association with one of the Lincoln family homesteads, where trees surviving today are said to be progeny of ones in place when Lincoln was still alive.

Red Astrachan is a medium size, very beautiful early summer apple. Valued for home use as a culinary apple before it is fully ripe, and as it ripens and mellows as a dessert apple. Tree comes into bearing at a young age and is a reliable, often biennial cropper. The fruit lacks uniformity, perishes quickly, and the crop matures unevenly, making it ill adapted for commercial planting. The fruit is medium, sometimes large, but not very uniform in size or shape. Roundish to oblate, inclined to conical, somewhat ribbed, and a little unequal. Thin skin, moderately tender, smooth, pale yellow or greenish, overspread with light and dark red splashes, and irregularly striped with deep crimson or carmine, and covered with a distinct bluish bloom. Flesh is white, and often tinged with red. Rather fine, tender, crisp, juicy, brisk subacid, aromatic, sometimes astringent, good to very good. Its season is from late July to September.

Red Delicious. One variety that needs no introduction is Red Delicious, the most widely-grown apple in the world. It possibly originated from a seedling rootstock after the scion had broken off a graft on the farm of Jesse Hiatt of Peru, Iowa. It was first called Hawkeye for the Hawkeye State of Iowa, and other lesser known selections of Hawkeye still persist. This particular selection, championed by the Stark Brothers of Missouri after 1895, has been called "a triumph of style over substance, good looks over taste." More than thirty-five variants of the Red Delicious are now marketed, from Ace Spur and Bisbee, to Roan and Ultra Red, but most of them have the same fatal flaw of exuding more glamour than flavor.

This is a big apple, with thick, bitter skin that remains intensely red even when it has turned to mush inside. As it matures, its round shape becomes elongated, so that at maturity it is tall and tapered. It has fine-grained, crisp, slightly tart, juicy, yellow flesh that becomes tender, then tastelessly pulpy as it undergoes the extended storage that commercial markets put it through. This apple ranks at the bottom of the barrel when cooked, but remains popular as a dessert apple among those who have never ventured to taste anything else. Because these trees are prolific and fast growing, it plagues the continent and displaces many worthier apples. Like an over-the-hill Hollywood actor, Delicious retains its cheerful good looks long after all real taste has departed from the mealy pulp beneath its thick skin.

Rhode Island Greening. The origin of Rhode Island Greening is not known with any certainty. However, it probably originated in the state of Rhode Island as its name suggests, most likely in

the vicinity of Newport. Here there is a place now known as Green's End, where a tavern was kept by Mr. Green, an orchardist who loved to raise apple trees from seed. Among the trees that came up in Green's orchard was one which bore a large green apple, hence the double meaning of this heirloom's name. Scions from this tree were in such demand in the early 1700s by Green's tavern's guests that his prized tree died eventually from excessive cutting. As its scions were dispersed far and wide, they were called by the following folk names: Burlington Greening, Greening, Green Newton Pippin, Jersey Greening, and just plain Rhode Island. Cuttings were sent to London and, from there, to many parts of Western Europe in the early 1800s, and it was widely grown throughout the United States in the nineteenth century.

This medium to large-sized apple begins autumn as a waxy, deep grass-green, but later, as it ripens, it develops yellow hues with brownish-red blushes and greenish-white dots. It may take on a dull blush and occasionally develops a rather bright red cheek but never stripes. Its shaped varies from round to oblate to conical and elliptical. It is slightly ribbed. Its skin is moderately thick, tough, and smooth. The firm yellow flesh is moderately fine-grained, crisp, tender, juicy, rich, and sprightly subacid, with its own peculiar flavor suitable for tart ciders.

The Rhode Island Greening produces reliable, abundant crops in many localities. It is generally regarded because of its acidity as one of the very best cooking apples grown in the U.S., nearly on par with Esopus Spitzenburg and its more recent kin, Jonathan. It is used for many culinary purposes and for fresh desserts. Hovey claimed that:

> *As a cooking apple, the Greening is unsurpassed; and as a dessert fruit of its season, has few equals. To some tastes it is rather acid; but the tenderness of its very juicy flesh, the sprightliness of its abundant juice, and the delicacy of its rich fine flavor is not excelled by any of the numerous varieties that we at present possess. It ripens up of a fine mellow shade of yellow, and its entire flesh, when well matured, is of the same rich tint.*

A triploid, it is a poor pollen producer that should be grown with two different pollen-producing varieties. The tree does not come into bearing when it is young, but is vigorous and long-lived. Its form is wide spreading, somewhat drooping, and rather dense. The fruit hangs well on the tree until it begins to ripen. The tree has the tendency to form a rather dense canopy in fertile soils, so special care should be taken while pruning in order to keep the head sufficiently open so that the light may reach the foliage in all parts of the tree. However, the orchard keeper should avoid cutting out large branches from the center of the tree thereby exposing the remaining limbs to injury by sunscald. It is better to thin the top every year, by removing many of the smaller branches to make it uniformly open. This keeps the longest fruit-laden branches from ending up so close to the ground that they interfere with the free circulation of the air beneath the tree.

Rome Beauty. Originating with Zebulon, Joel and H.N. Gillett in Rome Township, Lawrence County, Ohio, this apple was from a tree bought in 1827 from Israel Putnam, a nurseryman in nearby Marietta. It was first brought to the attention of fruit growers at an Ohio Fruit Convention in 1848, and later distributed across the United States, Europe and Australia. Its synonyms include Rome, Starbuck, and Gilette's Seedling. There are at least nine commercially available variants of Rome Beauty, with Red Rome being the most popular one in nursery trade. It was

popular with orchardists because it is late blooming and thus a dependable producer in areas with late frosts.

Rome Beauty fruit are medium to very large, round to slightly conical to oblong, and often faintly ribbed. They can be symmetrical or slightly unequal but almost always have a large deep, furrowed cavity. Their thick skin changes from solid yellow-green to carmine red, without ever becoming russeted. Rome Beauty skin is thick, tough, smooth, and highly colored, with numerous small dots. Its flesh may be almost pure white, or have a hint of yellow- green; it is firm-fleshed, fine-grained or a little coarse, always crisp and juicy. However aromatic Rome Beauty flesh becomes, it is mildly subacid, passing in flavor but never really excellent in quality. Rome Beauty stands handling and is a good keeper, maintaining its qualities in cold storage as late as May. Beauty trees are strong growers and attain good size in the orchard. At first, their tree form is upright but later it rounds out, becoming spreading and drooping, with many slender, bending lateral branches.

Twenty Ounce. This heirloom is locally-known as Sixteen Ounce Cooking**.** Originating in New York or adjacent Connecticut, the Twenty Ounce was first brought to notice around 1844 in Cayuga County, New York. Its synonyms include Aurora, Cayuga Red Steak, Coleman, de Dix-huit Onces, de Vin du Connecticut, Eighteen Ounce, Governor Seward's Lima, Limbertwig, Morgan's Favorite, Pomme de Vingt-onces, and Wine of Connecticut. In the early 1900s, it was grown for processing in western portions of Upstate New York. In many parts of the East, it has been considered the most-heralded cooking apple for culinary uses in the home for well over a century.

As its name suggests, this flat to truncate ribbed fruit is hefty, reaching enormous proportions under good growing conditions. Its skin is at first an attractive green, with a peculiar "peened" surface like that of Granny Smith. As it matures, its tough, thick skin flushes to a yellow-green, with broad stripes and splashes of red with russeted dots. Its whitish flesh may be tinged with lemon yellow, is coarse, and moderately tender, while maintaining a high quality, sweet, sub-acid, savory flavor. This apple holds it shape when cooked remarkably well, but is not a long keeper, lasting only until mid winter in storage.

Winesap. Although it is one of the oldest and most popular apples in America, the origin of the Old Fashion Winesap has been obscured. It was first recorded by Dr. James Mease of Moore's Town, New Jersey in 1804, who noted that it had already been grown there for some time by Samuel Coles. It had appeared in trade by 1817, when Coxe spoke of it as being "the most favored cider fruit in West Jersey." Also, it was known in colonial times in Virginia. Other folk names suggest different origins: Holland's Red Winter, Royal Red of Kentucky, and Texan Red. Like various other older heirlooms, the Winesap has produced many seedlings which have been selected for characters slightly different from those of their parental stock. The best known of these are Arkansas or Arkansaw, Arkansas Black, Paragon, also known as Black Twig and Stayman.

This is a round, medium-sized apple. Its skin is moderately thick, tough, smooth, glossy, and deeply red. It may have purplish-red stripes and blotches that are even darker, and rather small, scattered, whitish dots, especially toward the cavity, but the prevailing effect remains a bright

deep red. Its flesh is crisp and juicy, tinged with yellow, with reddish veins; it remains very firm, rather coarse, and sprightly subacid. It is a good shipper and keeper early on after harvest, but tends to scald later in the winter. The tree can be vigorous and is a remarkably regular cropper. It grows best on light but rich, deep soils and does not fare well on heavy clays or in low, damp locations. It is a good shipper and stands heat well before going into storage. Winesaps are great for cooking applesauce, dessert, and cider. It is one of the few apple varieties that grow well throughout all apple-growing regions.

Winter (Yellow) Banana. The Winter Banana originated on the farm of David Flory near Adamsboro, Cass County, Indiana, where it was first selected as an heirloom around 1876. It was introduced into commercial trade by the Greening Brothers of Monroe, Michigan in 1890. Its most common synonym is simply Banana.

Winter Banana was one of the most popular varieties for pollination, especially for the pollen-sterile Winesap and its kin. At one time Winter Banana was a variety selected for dehydrating because the slices would stay bright and white after processing.

Its fruit are large and variable in shape, often elliptical and ribbed, with a distinct suture line. Its smooth, tough, waxy skin is colored a clear pale yellow, with beautiful contrasting pinkish-red blush. Its whitish flesh is tinged with yellow, with a characteristic aroma of bananas, and is moderately firm, coarse, crisp, tangy to mildly sub-acid and juicy, of good dessert quality, but is too mild in flavor to excel for culinary uses. The medium-sized tree grows well, has a rather flat, open form with branches that tend to droop. It comes into bearing while young, and then continues to bear modest crops almost annually. In ordinary storage, it keeps until March, but its color is so pale that any bruises show easily.

Winter Pearmain. This may be the oldest known apple in the English-speaking world, dating back to at least 1200 A.D. in the British Isles. In 1822, Thatcher gave the following account of the Winter Pearmain of the old Plymouth Colony in Massachusetts:

> *The Winter Pearmain is among the first cultivated apples by the fathers of the old Plymouth colony, and is, undoubtedly, of English descent. Many trees of this kind are now supposed to be more than one hundred years old, and grafted trees from them produce the genuine fruit in great perfection.*

Its synonyms include Autumn Pearmain, Campbell, Ducks Bill, Great Pearmain, Green Winter Pearmain, Hertfordshire Pearmain, Old English Pearmain, Old Pearmain (Lindley), Parmain D'Angleterre of Knoop, Parmain d'Hiver, Paramain-Pepping, Pearmain, Pearmain Herefordshire, Pepin Parmain d'Angleterre, Pepin Parmain d'Hiver, Permenes, Permaine, Permein, Platarchium, Sussex Scarlet Parmain, White Winter Pearmain. Unfortunately, several other, distinctive varieties have gone under the name Winter Pearmain both in Europe and in the United States. There is a Red Winter Pearmain that originated in North Carolina and described by the pomologist Warder in 1867.

Its fruit are medium in size, uniform, and tapering to the crown. The skin is smooth, with a grass-green base color that can be a little red on the sunny side, maturing to a pale yellow or a red

apple with numerous dots. Its flesh is a rich yellow, fine-grained, crisp, tender and juicy; its flavor is slightly aromatic, pleasantly rich, and always agreeable. It has been the favorite dessert apple in the Midwest for nearly two hundred years, and remains one of the best all-purpose heirlooms. The tree is tall and upright, forming a handsome regular top. It is hardy, widely adaptable and vigorous, and will flourish in a light soil.

Wolf River. Found as a seedling sport derived from an Alexander, this apple is named for the river in Wisconsin on whose banks it was found in 1875. An apple connoisseur from the nearby farm town of Fremont distinguished it from its Russian parent, and by 1881, had begun to promote its unique qualities among American Pomological Society members. He must have had both a good eye and a good palate, for the Wolf River heirloom continues to be offered by more than thirty nurseries nationwide, while its ancestral Alexander is featured by less than a handful of nurseries.

The most distinctive feature of Wolf River is its largesse, for a single apple can weigh a pound or more and provide all the meat required for a sizeable apple pie. The pale yellow base color of the skin is typically overwhelmed with pale, non-lustrous red flushes. Its creamy flesh is soft and juicy but somewhat mealy. It is subacidic, and carries a distinctive flavor over into its pies and other baked goods. The Wolf River also dries well.

The trees are very hardy, and grow into large, spreading canopies with sturdy limbs. They are resistant to mildew, scab, fire blight and cedar-apple rust.

Yellow Transparent. Imported from Russia by the United States Department of Agriculture in 1870, its value was first brought to the attention of Americans by Dr. T. H. Hoskins of Newport, Vermont. It has been disseminated throughout the more northerly apple-growing regions of this country, from New England and the Northern Plains clear to the Pacific Northwest, and is now commonly listed by nurserymen in those regions. Its synonyms include White Transparent and Sultan.

Its fruit is medium to large in size, roundish ovate to roundish conic, and slightly ribbed, with unequal sides and a narrow cavity. Its skin is thin, tender, smooth, waxy, dotted and is always transparent but changes color from pale greenish-yellow to an attractive yellowish-white. Its flesh is a crisp, juicy white, moderately firm, fine-grained, tender, sprightly subacid with a light, pleasant flavor. Sliced, it can easily be solar-dried, and is excellent for culinary use and acceptable for dessert.

Maturing early in northern climes, it is a more reliable cropper than many other apples where growing seasons are short. It yields good crops nearly every year, ripening continuously over a period of three or four weeks, so that two or more pickings are required. However, it bruises easily so fruit must be secured while in prime condition and carefully stored. The tree is somewhat vigorous, hardy, healthy, and comes into bearing very young. At first, its form is rather vertical, but with age, it becomes spreading or roundish, and rather dense.

APRICOTS (*Prunus armenica)*

(Chinese) Sweet Pit. Also called Chinese Golden, Sweet Pit, Mormon Chinese, Large Early Montagemet or Chinese Mormon, this apricot may have been brought into Utah from Chinese immigrants that carried it into the Great Basin from California, while working on railroads and in mines. It spread north from there, well into British Columbia, at the limits of where apricots can survive. It is called a "sweet pit" because you can eat the oil-rich kernel like you would an almond, as well as enjoying the flavorful fruit. It is available from ten nurseries.

This clingstone is medium in size, up to two and a half inches in diameter, and has yellow to deep orange skin that is nearly free of fuzz. Its sweet, firm fruit are juicy, and their flavor, texture and quality are good, but the fruit ripen on the tree over an extended period, making a single harvest difficult. The fruit are good for home-use, drying, and roadside markets. They are susceptible to moth and insect damage, but well-suited to both northern climes and high elevations. The trees are early-bearing, heavy producers except where frosts persist very late in the spring. The spreading tree grows fifteen to eighteen feet tall, is self-fruitful, and blooms somewhat later than most varieties.

Moorpark. Originating as a chance seedling of a Nancy apricot, this heirloom was selected by Admiral Anson at his estate in Hartford, England around 1860. It remains widely available from nurseries, but is also ancestor to the popular Wenatchee Moorpark selected by the C & O Nursery in 1908.

This is a very large, round freestone apricot with fuzz-free, deep yellow skin that blushes orange. Its deep orange flesh is juicy and delectable. Good for shipping, canning, or drying, it is a good shipper.

Its trees have showy pinkish white blossoms and are self-fertile. The dwarf version of Moorpark grows up to ten feet tall and is an early, dependable producer.

CENTURY PLANTS (*Agave* spp.)

Hohokam agave (*Agave murpheyi)*. This may be one of the most prized heirlooms of prehistoric agriculture in the New World, for on prehistoric stone terraces below Table Mesa near New River, Arizona, clones of the very same *genetic individuals* of century plants are growing that were tended by Hohokam or Salado Indians more than a half millennium ago! Also known as Murphey's agave, or in the O'odham language as *a'ud nonhakam* ' mescal with eggs/progeny [on its stalk], this domesticated viviparous century plant has other local names in Spanish with the Sonoran Desert. Its prehistoric cultivation may have begun in Sonora, Mexico between Caborca on the west and Querobabi on the east, but it spread up through Papagueria as far north as the Sheep Springs Crossing on the Verde River, not far from Cordes Junction. Its entire range; however, is within the bi-national Sonoran Desert, between 450 feet and 3500 feet in elevation.

This is a medium-sized, prolifically suckering century plant with flowers that nearly always about to make viviparous bulbils on the flower stalks that are identical to and parasitic on the mother plant. Its leaves are light green, with a powdery sheen, firm, straight, and compacted

bundled into a rosette that is seldom more than a yard in diameter. The leaves are edged with small teeth, so that they are minutely serrated. After six to ten years the rosettes gain enough carbohydrates and hormones to send up flower stalks twelve to sixteen feet high, usually in late winter. The stalks may initially bloom with pale yellow flowers, which immediately abort, only to be replaced by vegetative buds that form miniature plants or bulbils. These bulbils stay on the stalk for months until knocked down by the wind, or removed by human hands. If they drop on undisturbed ground surfaces, they wither and die. However, if planted into soft, moist ground, they sprout rootlets and begin to photosynthesize. They are typically found on or near rock alignments, dry-masonry terraces or old habitations built by the Hohokam, Salado, Trincheras or O'odham cultures. Pit-roasted, the leaf bases and caudices are sweet and almost completely free of rash-inducing alkaloids. The inulin-rich vegetative biomass breaks down into complex sugars that are slowly digested and absorbed, and easily stored for months without spoiling.

CHERRIES *(Prunus avium*)

Belle of Santa Fe. Few details are known about this historic sweet oxheart cherry heirloom other than its association with Archbishop Jean-Baptiste Lamy, the French Catholic priest and orchard-keeper made famous in Willa Cather's novel, *Death Comes to the Archbishop.* Reputed to have introduced dozens of fruit tree and lilac varieties not only to Santa Fe, but surrounding Hispanic and Pueblo Indian villages as well, Lamy first obtained some of his plant materials through Durango, Mexico from central Mexico and Spain, and later brought others from California and Arizona, or from Italy and France across the Santa Fe Trail from St. Louis.

Lamy called his prized cherry tree varietal introduction the Belle of Santa Fe, and it was likely a black oxheart, a sweet cherry with soft dark flesh as well as dark skin. Oxhearts have hear-shaped fruit that are also called blackhearts. They may have come along with Lamy and the lilac cuttings that he brought from France in 1867, surviving a Comanche Riad on the Santa Fe trail.

In historian Marc Simmon's essay on "Bishop Lamy's garden," it is reported that this heirloom produced two crops a year in his personal garden located between St. Francis Cathedral and Alameda Street in downtown Santa Fe. It was associated with pears, peaches, apples, strawberries and almonds until Lamy's death in 1888, and, according to Paul Horgan's award-winning biography, *Lamy of Santa Fe,* his trees produced some forty gallons of cherries the year after Lamy died. Many small trees propagated by Lamy and his gardener Louis were auctioned for charity in the Plaza of Santa Fe. A century later, Simmons reported that only two pears and a half-dead almond survived on the Lamy garden site not far from the plaza, and now only mmulberries survive on the site, a parking lot. However, it may be that this heirloom persists somewhere nearby, in neighboring towns' or village's orchards. Cherries have continued to be grown north of Santa Fe, in the small huertas of the Rio Arriba, to the present day, but it is unclear whether this selection still lingers among them.

Bing. The selection of the most-widely loved cherry in the United States from a Black Republican planting in 1875 was the crowning achievement of Seth Lewelling of Milwaukee, Oregon. He also originated several other fine cherries in the Salem Oregon area. Mr. Lewelling named the variety after Mr. Bing, his Chinese-American assistant who faithfully helped him

develop this prize. When Bing cherries were first exhibited at the 1876 Centennial Exposition in Philadelphia, people at first thought they were crab apples, judging from their enormous size!

Bing fruit are one inch in diameter, broadly cordate, somewhat compressed, slightly angular with deep cavities. Their color is very dark red, nearly black, with small russet dots. Their stems vary in thickness. Their tough skin is of medium thickness, and adheres to the pulp. Their flesh is purplish-red, rather coarse, firm, very meaty, brittle, and sweet. Their large stones are semi-free, ovate or oval, blunt, with smooth surfaces.

Bing cherry trees tend to be large, vigorous, and erect, but the branches spread with age, the canopy becoming rather open. The cherries hang well on the trees, and the crop ripens simultaneously so they can be harvested in one picking.

Lambert. This cultivar was also developed in Salem, Oregon after the Lewelling property was sold to Joseph Hamilton Lambert in 1857. Its namesake, Mr. Lambert, found and introduced this cultivar in 1870. Lambert is second only to Bing in commercial trade in the United States. It has dark red, heart-shaped fruit that are smaller than Bing. They grow on strong, upright trees that are hardy and heavy-bearers. They require cross-pollination from another variety and appear to be resistant to spring frosts. However, they are not necessarily more productive than Bing.

Royal Anne. This sweet cherry is an old French heirloom that has also been called Queen Ann, Napoleon, Napoleon Royal Ann, and Napoleon Bigarreau. As with Lambert and Bing, Royal Anne was made famous by Seth Lewelling, who brought it from Iowa as a Napoleon Bigarreau, but renamed "Royal Anne" for reasons now long forgotten. From this single misnamed tree, the most profitable cherry variety grown in the Pacific Northwest had its origin. It is still available from nearly two dozen nurseries.

The Royal Anne has large, firm tallow-skinned fruit that gain a rose blush when ripened. Their light flesh is firm, juicy and sweet, and holds its shape well. These cherries are excellent fresh, dried or brined and canned as maraschinos. These upright trees reach twenty-five feet in height and bear heavily in years when spring frosts do not persist too late.

CITRUS (*Citrus* spp.)

Evergreen Chinese grapefruit (*Citrus grandis* or *C. maxima).* Also known as pummelo, pomelo or shaddock, this fruit of the India first reached the Americas via a trading ship christened the Shaddock. There are several commercial varieties of this citrus tree, Mammoth, Pink, and Tresca. They all produce large pulpy fruit similar to grapefruit, a New World hybrid derived from shaddocks. This particular variety was planted by Chinese immigrant Don Wah in 1928, and two generations of his extended have cared for it after him.

This is a frost-tender tree with fuzzy twigs and large, winged leaves. Its gigantic fruit are borne near the ground, have rather bitter skin, and contain masses of coarse-grained, acidic, whitish flesh. Most pummelos available in the Western U.S. have darker, pink flesh.

DATE (*Phoenix datylifera)*

Black Sphinx. Also known as the Sphinx date**, t**his enigmatic heirloom exists in no other part of the world than in Arizona, for it was discovered by Roy Franklin in 1928 or 1929, as a unique fruit type after a chance seedling was established in Brophy and McChesney's Sphinx Ranch plantation of 23 date varieties brought in from Arabia around 1917. The "mother plant" from which all other Black Sphinx dates were derived by crown separation was located on West Glenwood Avenue on the 300 to 400 block in the Arcadia District of Phoenix, near Camelback Mountain. It may be that it was a chance hybrid between Hayáni and another heirloom brought to Arizona in that 1917 shipment from the Middle East. The Black Sphinx emerged out of that sole date palm. By 1931, there were 156 Black Sphinx date palms in all of Arizona, making it the tenth most frequent variety in the state, according to Albert and Hilgeman's *Date Growing in Arizona*. In 1993, at the population's peak, there were perhaps 6000 to 8000 Black Sphinx palms growing in Arizona, 98 percent of them in the Metro Phoenix area. Dates of unknown varietal designation were among Padre Juan de Ugarte's introductions to San Javier, Baja California in the 1690s. Dates were already established in Arizona by the Civil War, both in Yuma and in Tucson. But the Sphinx soon became one of two mostly highly-prized and expensive varieties in the state, vying for the honor of the most expensive with the more common Medjool. President Eisenhower is said to have relished the Black Sphinx dates sent to him by Frank C. Brophy, Sr. and his partner, John McChesney.

The Sphinx date palms typically grow 25 to 30 feet tall, and their trunks are tall enough to require scaling to be hand-pollinated. They are prolific producers of large, soft, plump, slightly conical fruit that are one to one and three-quarters inches long. Their color changes from carmine to brown black as they ripen. The dark amber flesh is soft and syrupy, with very high sugar content, and an exquisitely buttery but mild taste.However, the fruit's skin is thin, vulnerable to splitting after rains, and prone to molding if not eaten long after being picked.

This variety would have remained poorly known, were it not for the revival it went though in the 1980s and 1990s at the hand of Dr. Harry Polk, who revived interest in the exceptional flavor and buttery but highly perishable texture. Polk and his skilled Mexican pollinating crew tended virtually all the trees that remain in original historic grove in the Arcadia district of Phoenix; just a few Black Sphinx palms have survived elsewhere, in Yuma. Scaling up their trunks, hand-pollinating them, bagging them, undertaking multiple harvests of their extremely perishable fruit, then marketing them fresh before they spoil are tasks that only Harry has shouldered for more than a quarter century. The culinary benefits are worth the pain, for they have been featured as a favorite dessert by Alice Waters at Chez Panisse in Berkeley. They are extremely rare, hard to propagate, and without Harry's care in the future, will be endangered.

Hayáni. Also known as Birkawi, Birket al Hjji, Hadji or Haggi, the latter names refer to "the Pilgrim's Pool," an oasis near Cairo, Egypt where pilgrims leaving that city on their *hadj* to Mecca make their first night's stop. Hayáni is, apparently, the name of a village near the pool. Not only is this one of the best and earliest dates of Egypt, but once it was transplanted to the Sonoran Desert, Popenoe noted, that "no variety has given such good results in Arizona". Just after World War II, Hayáni was the date variety planted to the most acreage in the Grand Canyon state**.** It is the probable parent of Arizona's most famous heirloom date, the Black Sphinx.

A palm with almost graceful, feathery leaves and few spines, it is hardy and tolerant of an occasional winter frost. It is prolific in both the number of vegetative offshoots it produces, and the weight of its fruit yield, which often reaches two hundred to two hundred fifty pounds of dates per year.

This date is two inches long and thick, turning from bright red or carmine when immature to dark brown when ripened and cured by the sun. Under the tough skin is soft, amber flesh that can be almost watery, but it has coarse fiber in small bits. The ends tend to crack in the hottest of weather, but no more so than most other varieties suffering from the same temperatures. Although its flavor and sweetness are not as exceptional as its progeny, the Black Sphinx, it is still considered excellent. It ripens so evenly at the beginning of October that two Tempe, Arizona harvesters brought down a thousand pounds in just one day.

Iteema. As known as Itima, and Yatímeh, its Arabic name means "the orphaned one". In parts of Algeria, it is called Al Qtar, **"**the honey dripper", because its excess juices drip from the tree. It is the North African date that is most often favorably compared with Deglet Núr. It was among the top three dates in acreage planted ikn Arizona by the end of World War II. However, this variety demands frequent irrigation and considerable amounts of manuring or fertilizer, and its offshoots are so delicate that they do not always transplant well.

Its fruit are as much as two inches long and half as wide. The thick but tender, shiny yellow skin is deepened to a chestnut brown before curing. When dried, it is a tawny olive, with blisters that take on an ochraceous hue. The thick flesh is soft and syrupy when fresh, but firmer and more pronounced in sweetness when mature. The inch long seeds are cinnamon or hazel in color. The fresh dates are a favorite among Arabs, and they cluster on large stalks that are sold in souks without being individually picked. Placed in a box and surrounded with dry dates, Iteema dates will remain in excellent eating condition for sixth months to a year.

Khadrawi. Also known as Khadhrawi, Khudrawee, its Arabic name means "the verdant." This is one of the most important Iraqi dates of the Persian Gulf to be introduced to California and Arizona. This date has been eaten as a staple in Arabia for centuries if not millennia. It had been introduced into the Southwest by 1910, if not earlier. It is now well adapted to the Sonoran and Mohave deserts, for its trees are so vigorous and healthy that they bear fruit in as little as two or three years after their offshoots are planted.

The fruit of Khadrawi are oblong, almost elliptical, being widest at the center and tapering to one end. The apex can be either round or pointed. They are medium-large, averaging an inch and half in length, and three quarters of inch in width. Their firm, tough skin is smooth and translucent, with a deep orange brown to light brown hue. The skin rarely wrinkles but often separates from the underlying flesh in folds and blisters. The amber brown flesh itself is firm and meaty, with a rich, extremely pleasant flavor that is never cloying to the palate. The smooth seed inside is oblong, blunt at the base and pointed at the apex. Like the flesh, it is usually pale brown in hue, with an orange russet on occasion.

Maktoom. Also known as Maktúm, or Makdúm, its name means "the bitten." The Arabic name alludes to the short, transverse scars of the date's skin that resemble the imprints left by a child's bite. This Mesopotamian heirloom has adapted to conditions in both southwestern Arizona and southeastern California. According to the Popenoes, it has perhaps produced more prolifically in Phoenix than it originally did in Baghdad and Basra.

The oblong fruit of the Maktoom are slightly broader near the center, with a flattened base and abrupt but broad apex. They are medium to medium large for a date, up to one and half inches long and up to one inch wide. Their glossy skin has an uneven surface that is translucent, almost luminescent, with golden brown hues overlain by a thin, blue-gray bloom. Their deeply wrinkled skin is firm and fairly thick, but not too tough. It separates from the light golden brown flesh in blisters. The flesh is very delicate in texture, buttery enough to melt in the mouth, and very mild in taste. The fragrance and flavor resemble those of the Deglet Núr, the prize of the Sahara. The cinnamon brown seeds are smooth-textured, oblong and rounded at the base.

Firm enough to be packaged and stored without damage to their quality, Maktoom dates maintain their tender texture and melting, mild flavor for well over a year. Between the two World Wars, this date covered at least twenty-two acres of plantation production in Arizona.

FIG (*Ficus carica)*

Black Mission Fig. By the 1690s, Jesuit Padres Juan de Ugarte and Eusebio Francisco Kino had established figs at Baja California missions such as San Javier de Viggé, where Ugarte put his training as a horticulturalist to good use. By California's statehood into the U.S. in the 1850s, a purplish-black fig was so common around the Spanish missions in Baja and Alta California, Arizona and Sonora that this variety simply became known as the Mission fig. Because it was also associated with Franciscan monks, who planted it in the gardens around the San Diego mission in 1769, it was sometimes called the Franciscan fig. The O'odham name for it, *suuna,* came to them through Spanish from Arabs and Berbers of North Africa, where the terms *tuun, tiin*, or *tuna* referred to figs, dates or olives at different points in history. It was not until the introduction of fig wasps to California in 1889 that other varieties of figs could be cross-pollinated sufficiently to out-produce the selfing Black Mission. From then on, Black Mission figs have only made up one fifth to one tenth of the annual harvest in the Southwest, with Calimyrna, White Adriatic, Kadota and Smyrnas out-distancing them since then.

This heirloom variety has pendulant purplish-black fruit that are sometimes faintly striated, and about the size of a small egg. Their flesh varies from purple to rust-colored, and is thick with seeds. The leaves of this tree are larger than a human hand, lobed and sometimes sand-papery to the touch. The trees can be pruned to be single- or multi-trunked, typically spread more widely than they grow tall, and certain selections are quite tolerant of alkaline soils.

GRAPES (*Vitis* spp.)

Catawba (*V. vinifera X V. labrusca).* This accidental hybrid of domesticated European grapes and wild Northern fox grapes was first found by Major John Adlum around 1810 probably on his Wilton Farm in Havre de Grace, Maryland. Known as foremost horticulturist and viticulturist of the Colonial period in the United States, Major Adlum lived from 1759 to 1836 between Pennsylvania, Maryland, and "the Vineyard" estate along Rock Creek in Washington, D.C. Major Adlum was appointed Deputy Surveyor for the Commonwealth of Pennsylvania and maintained long-standing friendships with both George Washington and Thomas Jefferson. However, it was Adlum's passion for wine and winemaking which gained him acclaim, particularly after he published the 1828 book, *A Memoir on the Cultivation of the Vine in America and the Best Mode of Making Wine.* By that time, Adlum had sold clippings of his Catawba vine selections to Nicholas Longworth of Cincinnati, who is known as the "father of American winemaking" and the father-in-law of Teddy Roosevelt's daughter, Alice. After establishing Catawbas in the fertile Ohio River Valley in 1813, he gradually expanded his vineyards to cover some three thousand acres, and by 1860, was producing 570,000 gallons of wine a year. His Catawba sparkling wine has been immortalized in Longfellow's poem "Ode to Catawba," and as a feature of Southwest Ohio's Nicholas Longworth Heritage Wine Trail.

The Catawba is a large purplish-red grape with a distinctive foxy flavor that is by no means as rank and musky as that of its parent, the Northern Fox grape. It is prevailingly sweet by the time it ripens between September and November. It is not only a table grape, but an ingredient in wines, non-alcoholic sparklers, champagnes, juices, jellies and jams. It had arrived in the Southwest by the mid-1880s, when Archbishop Lamy of Santa Fe grew "flawless Catawba grapes" in his garden off Alameda Street.

Concord(*Vitis labrusca)*. This classic American grape was developed in 1849 by Ephraim Wales Bull in Concord, Massachusetts, just across the Lexington Road from the home of the distinguished American writer, Nathaniel Hawthorne. Bull, who is now acclaimed as the Father of the Concord, began his search for the perfect grape at an early age, growing more than 20,000 seedlings of wild *Vitis labrusca* for evaluation in his seventeen-acre garden. In 1843, he found one wild grape that interested him, planted its seeds, pulp and skins in sandy soil on a southern exposure, and tended the plants for six years before deciding that it was the winner. The parent vine still grows next to his home in Concord, in a landscape now considered a National Historic Landmark. Four years later, in 1853, Bull took his seedling's grapes to the Boston Horticultural Society Exhibition, where they won first place in the exhibition. Bull introduced them into trade the following year, and they soon won the Greeley Prize, with Horace Greeley calling them "the grape for the millions." Today, Concord is considered to be the standard of quality for bluish-black table and juice grapes, and its production constitutes about 8% of the total grape production in the United States.

Concord is typically dark blue-black or purple, and large-seeded; however, a mutant white form has appeared in some vineyards. It is a slip skin grape that is highly aromatic. Its unique flavor is an identifiable characteristic of bottled grape juice and grape jelly, as well as many artificially flavored candies and sodas. While its primary commercial use is for grape juice, concord is cherished as a table grape for desserts.

Mission (*Vitis vinifera)*. The oldest *vinifera* grape cultivated in the United States, the Mission grape shares many traits with ancient heirlooms from Spain, *Monica* or *Criolla*, of which it may be a clone. Heirlooms akin to Mission are planted in the warmer landscapes of Argentina and Chile ,where they are known as *Criolla del Vino* and *Pais*. Jesuit Missionaries probably transported the original vines from Spain to Mexico by 1540, where it was cultivated for nearly a century before migrating north by 1620. The cuttings or slips from this heirloom may have undergone mutation, cross, or hybridization with native grapes before missionaries brought it to Texas and New Mexico in the 1620s, Sonora and Baja California in 1690, and Alta California in the 1760s. It is documented that the famous Franciscan monk, Junipero Serra, first planted the Mission variety in California, at Mission San Diego, in 1769. Padre Serra initiated other vineyards as he established eight other missions elsewhere in California before his death in 1784. The variety persisted into the 1900s in the Central Valley and in the foothills around the Los Angeles basin, where used in making brandy and Angelica, a sweet dessert wine created by blending brandy with unfermented Mission juice. There still may be as much as 1000 acres of Mission in California, and hundreds of acres elsewhere in the binational Southwest.

The late-ripening fruit clusters of Mission are large and loose, so that ripe fruit can hang for a relatively long time, developing high sugar content while resisting mold or rot. While Mission is a dark-skinned grape, it makes very light-colored red wine or brownish-toned white wine with a mild flavor and low acidity. Its canes are vigorous, strong, and heat-resistant, producing ten tons of grapes per acre under modest amounts of irrigation on warm alkaline soils. Mission is still used for a California varietal wine by Domaine de la Terre Rouge, Nine Gables and Story, all located in Plymouth, Amador County, and Malvadino in Murphy's, Calaveras County. Angewlica dessert wines are still made with Mission in Santa Cruz, Fresno, Santa Barbara, Temecula, California, and Tularosa, New Mexico.

Red Málaga (*V. vinifera).* This muscatel-type grape can be traced for sure to the ancient Moorish city of Velez-Málaga in Andalucia, Spain. The pinkish-red to purple American Málaga is apparently derived from the greenish-white Málaga that traces its history back to introductions into the Iberian Peninsula by the Greeks or Phoenicians some 2500 to 2900 years ago. When dried, this original White Málaga grape was used to produce a sweet, rich, deep-brown wine with the flavor of raisins. By 1500, this syrupy Xarabal Malagui wine was produced in Andalucia in a manner that allowed it to survive long sea journeys without spoiling. At some earlier stage in colonial history, the darker Málaga grape made it to Mexico, perhaps brought to the New World by Crypto-Jews and Islamic Arabs escaping the Spanish Inquisition. It later made its way to California. Between 1880 and 1885, Archbishop Lamy of Santa Fe, New Mexico brought cuttings from California to his garden off Alameda Street, and established material for grape production as well as for propagation and distribution at the Plaza of Santa Fe.

The pale red to reddish-purple skin of the muscatel grape is thick, and the grapes themselves grow in enormous bunches that measure up to fifteen inches long. The fresh grapes are crisp and mildly sweet, but lacking in acidity, and ship well during their July to September period of

harvest. They are also dried for raisins, and by 1904, Málaga grapes were de-seeded and featured as a key ingredient in the American dessert known as ambrosia.

JUJUBE *(Ziziphus jujuba*).

Chinese Hunto date. Also known as jujube, Chinese date, and Ber tree, this Asian fruit-bearing shrub was probably brought into the Western United states by Chinese immigrants working in mining towns and on railroads. It had arrived in Tucson by the 1920s, and continues to be cultivated there today in neighborhoods or barrios near the railroad yards.

The jujube is a multi-stemmed shrub or small tree with ovate, glabrous leaves that fall from slender branchlets in the winter. It produces brownish or dark red drupes that are three inches long, and pear-shaped. Each fruit has light-colored pulp and a hard stone within it; this heirloom is not as sweet as others, but has an apple-like taste and texture. The fruit can be dried, stewed or fermented, and are sometimes boiled down to make a syrup.

PEACHES (*Prunus persica)*

Elberta. Now the most popular of all peaches in the markets, Elberta emerged as a selection grown by Samuel H. Rumph, Marshallville, Georgia, from a seed of Chinese Cling planted in the fall of 1870. The most appealing feature of Elberta is wide adaptability, or as one author has said, "freedom from local prejudices of either soil or climate," creating the most cosmopolitan of its species.

Its fruit are two and three-fourths inches long, two and one-half inches wide, are round, slightly oblong or cordate, usually with a slight bulge at one side. Its cavity is deep, flaring, and often mottled with red, while its suture is shallower. The fruit skin is thick and tough and easily separates from the pulp. Its immature color is greenish-yellow, ripening to orange-yellow, with half of the skin overspread with red. Its hairs are densly fuzzy and coarse. The flesh of Elberta is deep yellow, but it is stained with red near the pit. The sweet pulp is juicy, somewhat stringy, firm but tender, mildly subacid, and separates free from the stone. Some fully ripened Elberta peaches leave a bitter, tangy aftertaste in the mouth, which some peach connoisseurs find disagreeable. They claim that because Elberta is now picked green and allowed to ripen not on the tree but in refrigerated market bins, it is deemed scarcely edible by those who know good peaches.

What Elberta lacks in flavor it makes up for in fruitfulness. If frosts or freezing winds do not force it to drop its blossoms, the trees are laden with fruit year after year. Elberta trees routinely withstand insects and fungi, and grow to be large, vigorous, upright-spreading, densely-topped specimens.

J.H. Hale. This variety began its career as a chance seedling found by its namesake J.H. Hale of South Glastonbury, Connecticut. Judging from its characters, it is clearly either an offspring or a close kin to Elberta; in fact, to the untrained eye, they are identical. Nevertheless, after J.H. Hale evaluated its performance in Connecticut and Georgia, he deemed it worthy of introduction,

selling his rights to the William P. Stark Nurseries in Stark City, Missouri. The Stark nursery began to distribute the Hale variety in 1912.

In fruit size and shape, J.H. Hale is on the average larger and more perfectly spherical than Elberta. They are lemon-yellow washed with a dark red blush and splashes of carmine. The skin of J.H. Hale is lightly fuzzy, but firmer and tighter, and although it is a free-stone, its skin does not separate as easy from the pulp. Its trees are as productive as Elberta, being vigorous, upright spreading, and open-topped. Like Elberta, it is widely adapted to a variety of climes and soils.

Navajo Clingstone. Spanish-introduced peaches made their way to the Navajo of Canyon de Chelly via the Hopi and Keres-speaking Puebloans in the early eighteenth century, with the first orchards being established near White House Ruins. They have persisted in the canyon vicinity despite the 1864 attempts by U.S. Army forces led by Captain John Thompson to cut them down as a means of starving Navajo families who were "holding out" in the lesser-known recesses of the canyon system, rather than moving to Bosque Redondo. However, the orchards were ultimately revived, some say by using pits from a few remote "Spanish-type" trees carefully guarded from the military by one lone Navajo woman.

In reality, there is no single Navajo peach, for up until World War II, nearly all the peach trees grown in Navajo-land were begun by planting three to six whole seeds in a hole in the early spring, or transplanting volunteer seedlings begun at peach-drying sites. No planting of grafted cutting or slips was traditionally practiced, so the seed-propagated trees can be vary quite a bit from one another. While both clingstones and freestones were grown by the Navajo, Canyon de Chelly families have favored clingstones because they stand more bruising during transport by horseback, and fresh freestones do not last as long. Both yellow and creamy yellow (almost white) fleshed peaches were common. They were traded, both fresh and dried, to neighboring Navajo and to other tribes.

PEARS (*Pyrus* spp.*)*

Anjou (*Pyrus communis)*. First known as Beurré d'Anjou, then simply d'Anjou, this historic heirloom originated near Angers, France prior to 1800. English pomologist Thomas Rivers introduced it to Great Britain in the nineteenth century, and then Colonel Marshall P. Wilder brought it to Boston in 1842. It became the favorite European winter eating pear of all time. It remains available from more than two dozen nurseries in the United States.

A large, short-necked, rather conical pear, the Anjou remains light green even when ripe, but gains some light brown russeting. As its name *beurré*, meaning "buttery", implies its mild, fine-textured white flesh virtually melts in your mouth, and has the most delicate of aromas. It is most exquisite when stored in cold cellars for two months after picking.

These early-bearing trees are large, hardy and productive, but require other varieties' for cross-pollination. They are moderately resistant to fire blight and to cold.

Bartlett (*Pyrus communis)*. This pear was brought to North America from England in the 1790's. In parts of the British Isles, this classic heirloom was, and is still known as the William pear. Once in the US, this name was gradually forgotten, and by 1817, the variety had become better known as the Bartlett pear. It did not take long for the Bartlett to become the most widely planted pear in America. Its fruits remain more common in American grocery stores and roadside markets than any other pear.

The Bartlett attains a rather large size for a pear, 3 and 3/8" by 2 and 3/8" wide. Its shape is oblong-obtuse-pyriform, tapering toward the apex. The skin is thin, tender and easy to bruise, but smooth. The surface of the skin is subtly pitted and somewhat uneven. As it ripens from a pale green, the color of the skin turns toward clear yellow, and gains a faint rosy blush on the exposed cheek. The skin is often thinly russetted around the basin, with scattered dots that are small and green or russet. The mature flesh can be fine-grained, but is often slightly granular near the center of the fruit. Fully ripened, a Bartlett can be buttery, juicy, vinous, and mildly aromatic, but today it is often picked, shipped, sold and eaten before these qualities accumulate.

Bartlett trees are adapted to a wide range of soil types, climates and growing conditions. They bear many large fruit from a rather early age, and can be long-lived. The disadvantages of the Bartlett are that the trees are very vulnerable to blight, extreme winter cold and summer heat. They are simply not as cold-hardy or as heat-resistant as some newer varieties. Furthermore, other pears are better-flavored more richly perfumed than the reliable but commonplace Bartlett. There is, however, no other pear that is so easily grown in North America, and so readily available for canning.

Flemish Beauty (*Pyrus communis)*. The parent to Flemish beauty is said to have been a seedling found growing in the woods near Alost, Eastern Flanders, Belgium. It was first brought into trade under the name of Bosc peer, or "pear of the woods." Flemish Beauty was introduced in 1810 under another name, Fondante des bois, under which it was grown in England for many years. Lindley, writing in 1831, was the first to describe this heirloom variety under the name of Flemish Beauty.

The fruit of Flemish Beauty is large, 2 ¾" long and 2 ½" wide and rather uniform in shape, which is as round as it is ovate pyriform. Its skin is thick, tough, and dull rather than glossy. Skin color is a clear yellow, overspread on the exposed cheek with a dotted and marbled reddish blush. These underlying colors are overlain with numerous russet dots. Its flesh is creamy yellow, firm and smooth. As it fully ripens, it becomes melting and tender, rather granular but juicy. The Flemish Beauty has a sweet, aromatic musky flavor of the finest quality.

To attain its most exquisite flavor and fragrance, these pears must be picked just as they reach their fullest size, and then they must after-ripen, wrapped in paper, in a cold cellar. It is said that a slowly after-ripened Flemish Beauty is incomparable in the pleasure it offers, for its rich flavor is delicately balanced between sweetness and sourness, with a musky aftertaste not unlike certain dessert wines.

Flemish Beauty trees are late bearing, but remain vigorous and fruitful for many years. This heirloom was at one time the leading commercial fruit variety in certain regions of the eastern

US renowned for their pears. However, because of its susceptibility to pear blight and scab fungus, the Flemish beauty has been replaced by other, disease-resistant varieties in all but the most remote locales that are isolated from the spread of these diseases.

Winter Bartlett (*Pyrus communis)*. Sometimes known simply as Winter Pear, this heirloom appears to have originated around 1880 in or near Eugene Oregon. It was then introduced into trade by D.W. Coolidge, a Pasadena California nurseryman. Its superficial resemblance to other Bartletts is the basis of the assumption that it was a chance seedling derived from that variety.

Larger in size but showing the characteristic pyriform shape of Bartletts, this winter pear has yellow uneven skin that blushes red on the sun-exposed cheek, while being splashed with russets on the other sides. The firm flesh is creamy yellow white, fine-grained and tender. Sweet and pleasant in flavor, the pulp is juicy and of good to very good keeping quality. The fruit are typically harvested later than classic Bartletts, and fully ripen in storage between December and January. The trees are unusually large, with loose spreading canopies that mature to fruiting size quite rapidly. The Greenmantle Nursery in Garberville, California is the only mail-order outlet still known to carry this heirloom.

Kieffer pear (*Pyrus lecontei).* Hybrids between the common European pear (*P. communis)* and the Chinese Sand pear (*P. pyrifolia),* both Kieffers and Le Contes are long-lived trees that may develop to considerable heights and canopy sizes. They have large oval leaves with serrated edges, and white flowers. The trees are tolerant of both heat and cold, and very resistant to fire blight.

The trees produce large golden fruit that blush with crimson hues when approaching ripeness. Their white flesh is crisp and juicy, but somewhat coarse-textured and musky. Like quinces, they are picked while still hard to the touch, then after-ripened in cold cellars until they become a bit tender. This heirloom, like its ancient ancestor, the wood pear, is best when baked. It is excellent for stewing, for pear honey and for preserves.

PECANS *(Carya illinoisensis)*

Native. Native or seedling pecans are those that have not been grafted and do not have a varietal name. Native pecans have been widely used by indigenous peoples within its native range, from northeastern Mexico through most of the southeastern US, and their shells occur in many archaeological sites in the Mississippi watershed. Their formal cultivation began around 1700s, but then declined with the development of named cultivars and improved grafting techniques in the mid- nineteenth century.

Native pecans are small, difficult to shell, and have a low percentage of edible kernels relative to their thick shells. The nuts have high oil content, an excellent flavor, and are preferred by many rural folks because of these characteristics. They are excellent for pastries and candies because of this rich flavor, but their small size and thick shells preclude their widespread use.

Stuart (Paper Shell). The Stuart heirloom was discovered in Mississippi around 1880, making it one of the oldest named pecan varieties. It is sometimes grafted onto local native pecan saplings. It is still the most dependable and most widely cultivated pecan variety and is offered by more than a dozen nurseries. Stuart is widely used in both the shelled and unshelled pecan trades, but is most popular between Virginia and Oklahoma.

The large "type two" nuts are cylindrical, being slightly longer in length than in width. They are considered to be medium in both size and shell thickness. While the thin shells have fair to medium hard cracking characteristics, it is relatively easy to separate the kernels from the cracked shells. The nuts are almost half edible kernel by weight.

The scab-resistant trees come into bearing late, taking as much as ten to twelve years before they offer significant production. Stuart is a mid season, dependable producer with average yields of one hundred fifty pounds per tree. The trees can easily live a century or more if properly cared for.

PLUMS (*Prunus* species)

Italian Prune (*Prunus domestica).* The Italian Prune is one of the most widely grown of all plums. As its name implies, it originated in northern Italy at least a century ago, where it was historically popular in the hills surrounding Milano. According to the London Horticulture Society, it had arrived in England by 1831. The following year, it was described by Prince as an excellent prune recently introduced to North America from Europe. Within decades, it was among the top four most popular plums along the Atlantic seaboard of America and the leading plum for drying into prunes in the Pacific Northwest.

The fruit are nearly 2 x 1 ½ inches in size, long-oval, enlarged on the suture side, and slightly compressed, with the halves unequal. Their color is purplish-black, overspread with very thick bloom. The skin of Italian plums is thin, but somewhat tough, and separates readily from the flesh. The tart flesh is at first greenish-yellow, changing to bright yellow, and is juicy, firm, subacid, and slightly aromatic. It is free stone.

The Italian plum has a fine flavor whether eaten fresh, stewed or cured as a prune. With cooking its color changes from yellow to a dark, wine color, but keeps a most pleasant, sprightly flavor. When cured as a prune, the flesh is firm and meaty, yet elastic.

The low-topped trees can be large, spreading or upright, and are usually productive. They are well-formed and bear regularly, but seem to be susceptible to many diseases, insects, and hot, dry weather.

Potawatomi (*Prunus munsoniana).*This plum is native to the middle Mississippi and lower Missouri watersheds, but was apparently translocated to the Colorado Plateau and Great Basin either by Mormons or miners. In southern Utah, it is restricted to hedgerows and vacant lots in small Mormon villages, rarely reaching beyond these anthropomorphic landscapes into truly wild habitats. Sometimes spelled Pottawattamie, or simply called the wild or hog plum, its horticultural potential first came under the notice of J.B. Rice of Council Bluffs, Iowa in 1875,

who named it after one of the counties of his home state, thereafter making it available to nurserymen in many other states.

The fruit are variable in both color and size, ranging from 7/8 to1 1/8 inches in diameter. In shape, they are round to oval, and slightly compressed. There is a very shallow cavity on one side of them. Their skin color runs from a clear currant-red with thin bloom, to pale yellow and white. Over this basal color are a few, whitish dots clustered about the apex. The skin of this plum is tough, cracking under conditions of high heat, separating readily from the flesh of the fruit. The stem of each fruit is slender, ¾ inch long, and weakly adheres to the fruit itself. The flesh of this plum is deep yellow, juicy, tender and melting. It is described by most Mormons familiar with it as sweet next to the skin but sour at the center and of memorable flavor. The plum pit or stone clings closely to the flesh, is 5/8 inch by 3/8 inch in size. The pit is flattened, smooth, somewhat oval and turgid. Its dorsal suture is faintly grooved.

The trees are dwarfish, multi-stemmed shrubs at maturity, seldom more than seven feet tall, and often forming hedges that average less than five feet in height. They are vigorous in their branching, and especially productive when receiving irrigation tailwaters, or growing alongside a ditch or a road. They are considered to be among the hardiest of the native plums, growing without danger of winter injury to tree or bud far into cold winter climes.

The Potawatomi is lauded in *The Plums of New York* as "possibly of greater cultural value" than any other wild American plum, for the flavor of its flesh is "of high quality…, the texture of the fruit being especially pleasing in eating, and though melting and juicy, it keeps and ships very well because of a tough skin. It escapes both the curculio and the brown-rot to a higher degree than most of its kind…" Elderly Mormons claimed that as children during the Depression, they survived on this fruit more than any other grown in their villages at that time.

Santa Rosa (*Prunus salicina*). The Santa Rosa was developed in 1906 by Luther Burbank from his trials of Japanese plums. Its place of origin, the Luther Burbank Home and Gardens in Santa Rosa, Sonoma County, California, is now a National Historic Landmark. This cultivar is widely available and still distributed by more than forty nurseries in North America.

The Santa Rosa is very large for a plum, round, heart-shaped or slightly oval in shape, with purplish red skin carrying a thin bloom and light dots. Its clingstone flesh is purplish near the skin, but pink with yellow streaks near the pit. The flesh is fragrant and fine-textured with a flavor that remains memorable whether it has been eaten fresh or canned. The fruit ships well.

The trees are partially fertile, and bear best with cross-pollination in the presence of other Japanese plums. The trees grow vigorously and become quite large, but are susceptible to bacterial spot.

Stanley. This is a European-type plum developed from a hybrid of Agen and Grand Duke cultivars that was introduced into trade by the New York State Agricultural Experiment Station in Geneva around 1926. It remains so popular that it is available from at least three dozen nurseries across the United States. It may still be the most widely planted of its kind in the East, Midwest and South.

The dark blue Stanley plum carries a thick whitish bloom on its skin. It is medium to large in size, and oval in shape. Its freestone flesh is firm and fine-grained, and a yellowish-green that turns purplish red when canned. It has a sweet rich flavor excellent for eating fresh, for canning, drying or preserves.

Late bloomers but early bearers, Stanley trees are large and spreading. They are self-fertile but benefit from the presence of other varieties for cross-pollination, and either way, can be heavy bearers.

Yellow Egg. This cultivar sprang up as a chance seedling in the Tiddesly Woods near Pershore, Worcestershire, England. It became very popular, but is now largely replaced by other varieties. The fruit is good for both canning and fresh use. It is sometimes simply referred to as Pershore.

The fruit are large, oval in shape, and golden yellow. The flesh is firm, juicy, and have a semi-free stone. The flavor is rich and sweet when it is fully ripe, but is tart if eaten before maturity. The fruit ripens from mid August to September.

The trees are vigorous, fast growing, and develop a tall, spreading habit. They are very productive and self-fruitful.

POMEGRANATE (*Punica granatum)*

Sonoran White. With pale pink rather than blood red juice and seeds inside its leathery fruit, this heirloom is reputed to have been introduced to the Southwest during the era of Padre Eusebio Francisco Kino, around 1700. Kino was indeed an active solicitor of agricultural plants from the Old World, and an active disseminator of those same stocks. The survival of this variety in rather remote desert oases such as Quitovac and Quitobaquito suggests that it may have been bypassed in those places by more recent desert-adapted varieties, such as the Wonderful, Greenrind, Sweet Fruited and Hermosillo selections evaluated in 1926 by King and Leding in Sacaton, Arizona. Also called the Papago or O'odham Pomegranate, this heirloom is available from only one commercial outlet in the United States, the Catalina Heights Nursery in northeast Tucson.

This pomegranate begins to bloom early in the spring, when it attracts migrating hummingbirds. Its floral bud and calyx is bright (almost day-glow) scarlet, and it bursts open at the tip, revealing six petals clustered in a Star of David design. The flower has bright scarlet stamens and golden anthers. Pollinated flowers develop into a leathery, dull red fruit that is typically the size of a baseball. It slowly matures, but this heirloom escapes the heat-induced cracking of the leathery husk more than other varieties do. Inside the tough skin are irregularly-shaped carpels of pale pink, almost translucent, berry-like seeds that are tinged with pale yellow by contact with the creamy yellow carpel walls. They are succulent, mildly sweet and exceedingly satisfying to eat on a hot summer day.

These delectable fruit are harbored on a multi-stemmed shrub that has glossy-green acuminate leaves. The shrub can be pruned into a single-trunk tree, but is more frequently cultivated as a hedge, from which new suckers are removed and easily propagated directly in moist ground. This heirloom variety is extremely salt-tolerant, maintaining the adaptability to the alkaline soils of desert oases that its Old World ancestors developed millennia ago. They are extremely easy to propagate by cuttings, so that most Black Missions in the Southwest are likely of the same widely-distributed "clone."

QUINCES (C*ydonia oblonga).*

Champion. Although this species is native to central and western Asia, it was introduced into the English-speaking world by 1275 A.D., and became a major raw material for marmalades in England by the sixteenth century. Because all quince cultivation declined as soft fruit became more storable in the nineteenth century, little is known of the origins of particular varieties. The fruit of this heirloom is bright yellow, and strongly russeted near the stem. The shape is described as obscure pyriform, that is, between the shape of an apple and pear. The calyx is set in a deep and strongly corrugated basin. The fruit is larger than the common quince, and ripens later and more tenderly than that any other quince. The flesh is yellow, only slightly astringent, sweet, and has a delicate flavor.

It fruits at a young age on vigorous, very productive trees that tend to produce ripe fruit by mid-season. The tree grows twelve to fifteen feet tall, is very vigorous and hardy. Its shoots have a very dark color, which is a feature that can be used to distinguish it from other varieties. The flowers are big, white and showy. This variety is known to be somewhat difficult to propagate from cuttings.

Orange. Also called the Apple Quince, **t**his heirloom has large, round, bright yellow, smooth skinned fruit that weigh from a half a pound to over a pound. The fruit shape is likened to that of the Rhode Island Greening apple, often slightly flared toward the stem, and occasionally siding up to the stem like seckel pears do. The flesh is orange-yellow, turning red when baked, and has excellent flavor and aroma. Inedible when fresh, this quince is baked or roasted for a variety of culinary purposes.

Best suited to sites with cool summers, the mature trees are readily distinguishable from other varieties by the very rough excrescences (outgrowths) that occur all around the trunks at short intervals. The leaves and young shoots are much lighter than those of other varieties. It is still available from at least eight nurseries in the United States.

SHADDOCK (*Citrus maxima or C. grandis).*

Evergreen Chinese grapefruit. Also known as pummelo, pomelo or shaddock, this fruit of India first reached the Americas via a trading ship christened the Shaddock. There are several

commercial varieties of this citrus tree, Mammoth, Pink, and Tresca. They all produce large pulpy fruit similar to grapefruit, a New World hybrid derived from shaddocks.

This is a frost-tender tree with fuz-covered twigs and large, winged leaves. Its gigantic fruit are borne near the ground, have rather bitter skin, and contain masses of coarse-grained, acidic, reddish pink flesh.

WALNUTS (*Juglans* species)

Black Walnut (*Juglans niger*). A native of eastern North America, the Black Walnut can be found growing wild along rivers and streams from central Texas northwards to Ontario, Canada.

The fruit is deeply furrowed and has a semi-fleshy husk that typically drops off the nut in October. The nuts are round, two inches or so in diameter, and the unimproved varieties may be difficult to crack. While the meaty nuts are highly flavorful, difficulties in shelling them preclude their widespread use as food. However, the Black Walnut is also highly valued for its beautiful dark brown wood, which is easily worked into furniture.

The Black Walnut is a large deciduous tree growing to heights of one hundred feet or more. The bark is dark grey-black and deeply furrowed. The twigs have pithy centers filled with air spaces. The pinnate leaves are alternate, with 15 to 23 leaflets per frond-like leaf. They are widely available from nurseries.

Carpathian Walnuts (*Juglans regia*). Introduced into the US and Canada in 1939 by Reverend Paul C. Crath, who obtained seed from the Carpathian Mountains of Poland. Crath first distributed his Persian Walnut-like seed nuts through the University of Guelph in Canada, and through the Wisconsin Horticultural Society, and they have continued to be dispersed by more than two dozen nurseries in North America.

Plump but thin shelled, this heirloom is slightly smaller version of the English walnut. The nuts have a rich, full-bodied flavor and keep their excellent quality in storage. In late fall, the nuts fall free of their husks.

Carpathian walnuts are much hardier and more pest and disease resistant than their pampered English cousins. Their canopies are quite symmetrical and as much as forty feet wide, while growing up to fifty feet in height. The sturdy limbs are dark grey, with lacey dark green foliage. The self-fertile trees prefer sunny spots, with well-drained, deep and fertile soils.

References:

Beach, S. A. 1905. *The Apples Of New York Volumes. I & II. Report of the New York Agriculture Experiment Station for the year 1903*. J. B. Lyon Company. Albany, NY.

Davidson, George E. 1986. Red Rock Eden: the Story of Fruita. Capitol Reef Natural History Association, Capitol Reef Nastional Park, Utah.

Hedrick, U. P. 1911. *The Plums of New York*. Report of the New York Agriculture Experiment Station for the year 1911. J. B. Lyon Company. Albany, NY.

Hedrick, U. P. 1921. *The Pears of New York*. Report of the New York Agriculture Experiment Station for the year 1921. J. B. Lyon Company. Albany, NY.

Jett, Stephen C. 1979. Peach cultivation and use among the Canyon de Chelly Navajo. *Economic Botany* 33(3): 298-310.

Lax, Tami and C. Todd Kennedy. 2004. *Pears of North American Origin*. Prepared for Slow Food USA Ark of Taste Committee and privately printed by Tami Lax, 28 South Franklin Street, Madison, Wisconsin.

Morgan, Joan and Alison Richards.2001. *The New Book of Apples.* Ebury Press, London.

Muriel, S. W. G. 1971. *National Apple Register of the United Kingdom*. Ministry of Agriculture, Fisheries and Food. London.

Yepsen, Roger. 1994. *Apples*. W.W. Norton, New York.

Whealy, K. 2001. *Fruit, Berry, and Nut Inventory: Third Edition*. Seed Savers Exchange. Decorah, Iowa.

Whiting, Alfred E. 1942. The Ethnobotany of the Hopi. Museum of Northern Arizona, Flagstaff