



IDENTIFICATION OF AMERICAN CHESTNUT TREES

How to Distinguish American Chestnut Trees from Other Chestnuts Within the Original Native Range, with Information on Other Chestnut Species

Literature available on care of chestnuts: Harvesting, Identification, Mudpacking, Nut storage, Planting, Pollinating and Quick Guidelines. To request any of these, write to: The American Chestnut Foundation, P.O. Box 4044 Bennington, VT 05201

INTRODUCTION

Chestnuts have been cultivated for nuts and wood for thousands of years. The name *Castanea* is believed to have come from *Kastanea*, a city in Pontus, Turkey. European chestnuts (*Castanea sativa*) probably originated in the Caucasus mountains between the Black and Caspian Seas. They were planted throughout the Roman Empire, and now grow wild in Italy, France, Spain, Morocco and Greece. Chestnuts are also important in China, Korea, and Japan, where there are four native species (*Castanea mollissima*, *C. Henryi*, *C. seguinii*, and *C. crenata*).

In North America, pollen records from the last interglacial period show that the American chestnut tree, *Castanea dentata*, was present on Long Island 30,000 to 50,000 years ago. American chestnut trees were once found up and down the Appalachian range, from Maine to Georgia (Fig. 1). Within this area it occurs either singly or in mixed forest growth, usually on high, sandy land, gravel ridges, or mountain slopes wholly or nearly free from limestone. In the last 150 years it has been planted outside its range in favorable spots (Michigan, Wisconsin) where it has become a forest tree, protected from chestnut blight disease geographically until only recently. American chinquapins, *Castanea pumila*, share the southern part of the range of American chestnut (from Pennsylvania south).

DESCRIPTION

Chestnuts are deciduous trees with short-stemmed, prominently veined, oblong leaves that have coarse to fine pointed marginal teeth or bristles. Male (staminate) flowers are formed in the axils of successive or alternate leaves in early June, in groups of cylindrical catkins (aments) as long as or longer than the leaves. Female (pistillate) flowers form later and on younger wood, at the base of short catkins. The nuts develop in prickly husks called burs, which open when the nuts are mature (usually mid-September to mid-October). All seven species will cross with each other, and hybrids are very hard to identify.

Group I

Leaves hairless, except for a few medium to long (0.5 - 1.0 mm) simple hairs on the veins. The nuts are usually 1 to 3 per bur (but sometimes as many as 7 to 10).

AMERICAN CHESTNUT • *Castanea dentata*

Before chestnut blight disease this was a tree 60 to 80 (occasionally 100) feet tall. Now mature trees are uncommon, and the species is usually found as a shrubby cluster of sprouts 3 to 15 feet tall, or as an understory tree 15 to 60 feet tall. The twigs are deep red to chestnut brown, the buds are smooth and brown and asymmetrically bullet-shaped, usually askew on the twig. Leaves are oblong, pointed at the tip, and acute at the base where they join the petioles (canoe shaped), with coarsely dentate (toothed) margins. Mature leaves growing in the shade are light green and paper-thin.

The most striking difference between American chestnut trees and the other species is their slender, upright growth, and their thinner, smoother and larger leaves, which are more pendant in position. The nuts are generally smaller than all other chestnuts, except chinquapins, and are sweeter.

Group II

Leaves hairy on the lower surface, and nuts usually 1 to 3 per bur.

SPANISH or EUROPEAN CHESTNUT • *Castanea sativa*

These trees were extensively planted in North America, starting in 1773 (Thomas Jefferson). They are usually apple-like orchard trees, but some are tall and straight like American chestnuts. Twigs are thick and coarse looking, dark-brown and downy at first and then becoming smooth. Some trees have densely pubescent leaves, other trees have almost hairless leaves. They are usually *not* acute where they join the petiole, and are about the same size as American chestnut leaves. They usually are more rigid than American chestnut leaves and a darker shade of green. The nuts are medium to very large. This species is almost as susceptible to chestnut blight as American chestnuts. There are many hybrids of *C. sativa* X *C. dentata* in the U.S., including the old and frequently planted cultivar 'Paragon.'

JAPANESE CHESTNUT • *Castanea crenata*

Trees of this species were first imported into the U.S. in 1876 (by S. B. Parsons of Long Island, New York). The chestnut blight fungus came into the U.S. on some of the early imports of this species. Young twigs are light, pinkish-brown, and downy, becoming smooth as they mature. Lenticels are large, white and sparse. The leaves have glands that look like yellow-brown dots, and a mixture of single and branching hairs on the lower surface. The margins have bristle-like projections and often are only slightly toothed. The nuts are medium to very large, and often slightly bitter when fresh. Japanese chestnut trees are usually very resistant to chestnut blight, but may not be very winter-hardy north of Pennsylvania.

CHINESE CHESTNUT • *Castanea mollissima*

These can be small, apple-like orchard trees or tall, straight forest trees. They were planted extensively in North America, starting about 1915. Young twigs are pale, yellow green and remain hairy. Older twigs are tan, especially on the lower surface. The lower surface of the leaves may feel like heavy felt because of large numbers of branched and simple hairs, but they are sometimes completely hairless, especially shade leaves. The upper surface of the leaves is shiny, and the texture is often leathery. The nuts are small to large, and are often quite sweet. Chinese chestnut trees range in resistance to chestnut blight from very susceptible (as susceptible as American chestnut trees) to highly resistant. They are a little more tolerant of cold weather than Japanese chestnut trees.

Group III

Leaves hairy on the lower surface, and nuts single in the burs.

ALLEGHENY CHINQUAPIN • *Castanea pumila* var *pumila*

OZARK CHINQUAPIN • *Castanea pumila* var *ozarkensis*

Shrubs or trees up to 60 feet tall. The leaves are slightly to deeply toothed, and range from nearly smooth to very fuzzy on the lower surface with branched and simple hairs. Twigs are purplish brown. Ozark chinquapins can look very much like American chestnut trees, but the branched hairs on the leaves distinguish them. They are all very susceptible to chestnut blight disease.