

Types of Chestnuts



American chestnut, *Castanea dentata* has leaves that are alternate, simple, 12-20 cm long with coarse, sharply pointed teeth along the edges.

Fall color is composed of shades of yellow, gold and brown. Their fruits form very sharp, prickly burrs 5-7 cm long, each containing 2 or 3 shiny, round, brown sweet nuts 1-2.5 cm long. Its bark is light gray, with broad, flat ridges and fissures that often form a spiral around the trunk.

Chinese chestnut, *Castanea mollissima* is a deciduous tree growing to 20 m tall with a broad crown. The leaves are alternate, simple, 10-22 cm long and 5 - 8 cm broad, with a toothed margin. The flowers are produced in catkins 4-20 cm long, with the female flowers at the base of the catkin and males on the rest. The fruit is a densely spiny cupule 4-8 cm in diameter, containing two or three glossy brown nuts; these are 2-3 cm in diameter on wild trees. The scientific name *mollissima* derives from the soft downy hairs on shoots and young leaves.

When cultivated close to other species of chestnut, including Japanese chestnut, American chestnut, and sweet chestnut, Chinese chestnut readily cross-pollinates with them to form hybrids. Chestnuts are in the same botanical family, Fagaceae, as oaks.

Horse chestnut, buck-eye or conker tree, *Aesculus hippocastanum* is NOT a true chestnut although the nuts appear similar. They are in the Sapindaceae family, as are the maples. It is a large deciduous tree that grows to 118 ft tall, with a domed crown of stout branches; on old trees the outer branches are often pendulous with curled-up tips. Leaves are opposite and palmately compound, with 5-7 leaflets; each leaflet is 13-30 cm long. The leaf scars left on twigs after the leaves have fallen have a distinctive horseshoeshape, complete with seven "nails". The flower clusters are usually white with a small red spot.

Chestnut Blight

The pathogenic fungus *Cryphonectria parasitica* is the cause of chestnut blight -- the devastating fungal disease of the American chestnut tree.

In the years since the chestnut blight decimated the



native chestnut population in the eastern United States, many scientists and botanists have worked to create a resistant hybrid chestnut tree that retains the main characteristics of the American chestnut tree. Trees not exposed to the blight were cross-

pollinated with a mixture of 3 Chinese chestnut selections: "Kuling," "Meiling," and "Nanking." The resulting fruit-producing hybrid was named the Dunstan chestnut. Today the seedling Dunstan chestnuts grow 50-60' tall, in many locations around the nation.

One of the most successful methods of breeding is to create a back cross of a resistant species (such as one from China or Japan) and an American chestnut. The two species are first bred to create a 50/50 hybrid. After three back crosses with American chestnut, the remaining genome is approximately 1/16 that of the resistant tree, and 15/16 American. The strategy is to select blight-resistance genes during the back crossing, while preserving the more wild-type traits of American chestnut as the dominant phenotype

The American Chestnut Revival in Houghton County, Michigan



At the turn of the 20th century, an estimated 4 billion American chestnut trees thrived in the eastern forests of the United States. American chestnut had numerous beneficial qualities including providing wood products and nutritious food for humans, livestock, and wildlife. Then in the early 1900s an accidentally introduced deadly fungus struck. By 1950 the American chestnut was essentially eliminated as a forest canopy tree.

A small group of citizens in Houghton County are taking the initiative to join nationwide efforts to return chestnut trees to the landscape and restore the many environmental and societal benefits provided by these magnificent trees.

Chestnut Range

Chestnut trees, unaffected by blight, are straight hardwood trees that can grow up to 100 feet tall, 5 feet in diameter, and are branch-free for 50 feet. In some



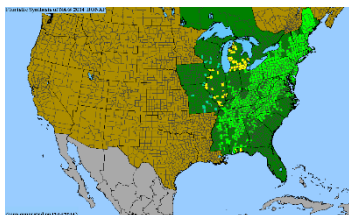
eastern forests, more than a century ago, over 25 percent of the canopy was comprised of American chestnut. Chestnut trees had a range of over 200 million acres from Maine to Georgia and west to the Ohio Valley (a range that extended approximately 1,600 miles).

Estimates are that in the center

of its natural range one in every four hardwood trees was American chestnut.

Our climate in the Keweenaw is moderated significantly by Lake Superior with summer cooling effects and heavy winter snowfalls. The American Chestnut is a prime candidate for “assisted migration” and its present range is today decidedly

expanded with trees being planted further north and west of its original range. The trees grow best in an open canopy in



loamy, well-drained, slightly acidic soils but can adapt to a wider span of soil conditions. Range expansion plantings include both recently bred blight resistant varieties and true American Chestnut.

At this time – Fall 2015 – we have planted 12 heritage American Chestnuts in 3 locations in Houghton County: BHK Child Development Center, near the Seaman Mineral Museum and in the wooded area above the Forestry School parking lot. In the coming year additional plantings will be done at the Marsin Nature Center. New plantings will also include blight resistant varieties.

Chestnuts are wind-pollinated. In 7 – 8 years the trees reach maturity and begin producing nuts.

The American Chestnut Foundation

is a non-profit conservation organization headquartered in Asheville, North Carolina, with three regional offices located in Charlottesville, Virginia; South Burlington, Vermont; and State College, Pennsylvania. The organization’s research farm in Meadowview, Virginia has more than 50,000 chestnut trees planted in various stages of development. The Foundation is comprised of 16 state chapters, more than 5,500 members, and a network of volunteers and partner organizations. TACF is dedicated to making the native chestnut tree a true American success story. Since 1986, over 135,000 blight resistant chestnut varieties have been planted across the native range of American chestnut.

Please visit the American Chestnut Foundation website (<http://www.acf.org/>) to learn more of their activities.

If you are interested in including chestnut plantings in your own landscaping plans here are some Midwest nurseries that supply chestnut seedlings:

<http://www.chiefrivernursery.com/store/American-Chestnut-Seedlings-6-12.html>

<http://www.empirechestnut.com/catalog.html>

<http://www.chestnuthilltreefarm.com/store/p/26-Dunstan-Chestnut-Tree.aspx>

Information in this brochure adopted from TACF website

Chestnuts roasted over an open fire

1 -2 pounds of chestnuts in the shell

1 tsp of oil

¼ cup of water

Sharp knife

Large heavy skillet with lid

1. Cut a large X into each chestnut with a sharp knife, piercing through the shell. Toss chestnuts and oil in a bowl.

2. Heat skillet over moderately low heat until hot, then roast chestnuts in covered skillet, stirring every few minutes, for 15 minutes

3. Add water and continue to roast, covered, stirring occasionally until water is evaporated and chestnuts are tender, about 5 minutes more. Serve hot, and enjoy this true North American delicacy.

Special Thanks to the following organizations and their members who have made this Chestnut Planting Endeavor in Houghton County possible:

BHK Early Child Development Center -- for facilitating trees planted on their grounds and including pre-school students in educational opportunities

Michigan Technological University School of Forestry – for initiating this project, obtaining and caring for the seedlings, and coordinating plantings in the community

Keweenaw Unitarian Universalist Fellowship – for enthusiastic sponsorship and superb community outreach

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