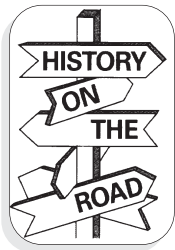


# HISTORY ON THE ROAD

## AMERICAN CHESTNUT TREES AT THE SMITHSONIAN'S NATIONAL MUSEUM OF AMERICAN HISTORY



Before a fungal blight brought the American chestnut (*Castanea dentata*) to the brink of extinction in the twentieth century, this stately tree was a dominant species in the eastern hardwood forests of the United States. Its native range extended from Maine to Michigan, southward to Mississippi and Georgia.

The American chestnut—the tallest of which soared to over 100 feet, with a trunk seven feet in diameter—played an important role in the nation's history and culture. A fast-growing and straight-grained tree, it was known for its broad, rounded canopy that flowered in early summer with abundant greenish-white catkins. It was sparingly planted for ornament but was primarily prized for its edible nuts (a rich food source for humans and wildlife alike) and its strong, reddish-brown wood which was used for wide variety of purposes, including heavy construction, fine furniture, musical instruments, railroad ties, fence posts, interior furnishings, and fuel. It also served as a major source of tannin for the leather tanning industry.

Chestnut blight is caused by the fungal pathogen *Cryphonectria parasitica*, which was accidentally introduced from Asia. The disease was first noted in 1904 on trees growing at the New York Zoological Park. The resulting epidemic proved devastating, virtually exterminating the American chestnut from many sections of the country, including Washington, DC, in less than 50 years.

In an effort to increase public awareness and understanding of the historical and ecological importance of these trees, and to draw attention to the ongoing efforts to restore them to the nation's forests, the Smithsonian Institution's Horticulture Services Division (HSD) recently planted two pure American chestnut trees, donated by The American Chestnut Foundation

(TACF), on the grounds of the National Museum of American History, overlooking the National Mall.

The Horticulture Services Division and TACF decided to plant these specimens outside one of the nation's most popular museums so that visitors may see the trees and learn—through interpretative signs—something about them, the blight, and the restoration efforts. The trees are expected to contract the blight eventually, and thus watching this process and the efforts to treat the fungus-caused cankers will be part of a valuable educational experience. HSD will monitor the Smithsonian trees for signs of disease and report the information to TACF. The Foundation's pathologists will work with Smithsonian horticulturalists to diagnose problems and make records of the trees' health, and TACF will provide the Smithsonian with replacement trees when the trees on the Mall finally succumb to the blight. Having the trees become infected will also allow

visitors to see firsthand the fungus that nearly wiped out the American chestnut.

At the time of their planting in March 2006, the trees were about four years old and stood about six-feet tall. They were propagated at TACF's research farms from seed collected in the woods of southern Virginia. The tree planted to the east side of the museum is from Big Stone Gap in Wise County; the tree planted to the west is from the Mt. Rogers National Recreation Area in Smyth County. As such, both trees are susceptible to the blight, and HSD staff will monitor the trees carefully, promptly applying mud-packs to any cankers that might appear. Because microorganisms in the soil attack the fungus, covering cankers with mud and then wrapping them with plastic is the only known treatment for the disease. This treatment may slow the spread of the fungus throughout the tree.

Researchers at TACF have been using genetic data gathered from surviving



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The American Chestnut Foundation President Marshal Case (left), Smithsonian Chief Horticulturalist Stephan VanHoven, and Smithsonian Horticulture Services Division Associate Director Barbara Faust at the ceremonial planting of two American chestnut trees at the National Museum of American History on March 20, 2006.



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At the turn of the twentieth century, the landscape of the National Mall in Washington, DC, looked much different than it does today. There were rolling hills and winding paths, and it was thickly planted with trees of various types, including beautiful stands of American chestnuts.

American chestnut trees to develop a more resistant strain by introducing the blight resistance of the Chinese chestnut, *Castanea mollissima*, through a backcross breeding method. Currently, TACF has succeeded in backcrossing to a point that they can produce trees that are 15/16ths American chestnut and 1/16th Chinese chestnut.

For chestnuts to return to the Mall reconnects the species to its own historical past. The Mall once had a glorious stand of American chestnuts. Ironically, after these trees were lost to the blight, the Mall was redesigned and planted with long lines of elm trees, which were later threatened by another introduced pathogen, Dutch elm disease, caused by *Ophiostoma ulmi*.

This demonstration planting is also a natural extension of the Smithsonian Institution's educational mission. Curators within several museums document the cultural and environmental history of America's forested landscapes, but HSD

designs grounds for each museum to exemplify its particular mission and collections. For example, plants reflecting the native environments of tribal lands surround the new National Museum of the American Indian. At the National Museum of Natural History, there is a popular Butterfly Garden, containing various plants known to attract migratory and indigenous butterflies. The Smithsonian's main administrative building (the Castle, completed in 1854) is embraced by a spectacular Victorian garden that symbolizes both the tastes and formal garden fashion of the era in which the institution was founded. Near the Hirshhorn Museum, the Mary Livingston Ripley Garden features changing displays of annual and perennial flowers among a wide range of smaller ornamental trees and shrubs. At the National Museum of American History, a graceful stand of river birch (*Betula nigra*) at the Mall entrance is complemented by a Victory Garden (demonstrating efforts

to encourage household gardeners to grow crops during World War II) and an Heirloom Garden (which features annuals, perennials, and bulbs that have been in cultivation for more than 50 years). The American chestnut trees thus fit a Smithsonian-wide effort, demonstrating how trees relate to the legacy of American history and culture.

The Smithsonian is exploring the possibility of joining with TACF and the Forest History Society to develop public programming associated with the American chestnut. In the meanwhile, the next time you visit the nation's capital, be sure to stop by the National Museum of American History and see these examples of living history.

—Jeffrey K. Stine, National Museum of American History, and Stephen VanHoven, Horticultural Services Division, Smithsonian Institution