

The American Chestnut

Introduction

By David Wooddell

By David W. Wooddell and Shelley Sperry, *National Geographic* staff

The American chestnut tree, *Castanea dentata*, was once the dominant tree on more than 200 million acres of woodland in the eastern United States. As recently as 1900, every fourth tree in the Appalachian forest was a chestnut. The tree was found from Maine to Florida and as far west as the Ohio Valley. Today, as a result of the blight that infected the nation's American chestnut population in the early part of the 20th century, the tree is listed as endangered in Kentucky and Michigan and of special concern in Maine and Tennessee.

This large, well-formed deciduous tree is characterized by a rounded canopy and long limbs: Before the onset of the blight it normally grew as tall as 100 feet, with old-growth trees often measuring as much as 30 feet in circumference. The dark green leaves (with a paler green underside) are five to eight inches long, oblong-blade shaped, and coarsely serrated. The tree produces tiny greenish white flowers on six-inch, yellowish catkins in the late spring or early summer. The fruit of the chestnut is enclosed in spiny green husks called burs, which protect two to three flat-sided nuts that are one to two inches in diameter. The nuts ripen in the autumn and fall to the ground.

The American chestnut is a relative of the Chinese chestnut, or *Castanea mollissima*, as it's better known today, and of the European chestnut, *Castanea sativa*; it's also a cousin of the Appalachian chinquapin, *Castanea pumila*. It made a wonderful shade tree, was frequently felled for its hard wood, and provided abundant food for wildlife.

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Other Resources

[The American Chestnut Foundation](#)

Chestnut Blight

By David Wooddell

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Discovered in 1904 at the New York Zoological Park, the blight that killed an estimated four billion chestnut trees was introduced into the United States by infected chestnut-sapling nursery stock. Spreading at an incredible rate for a plant disease, it had obliterated most of the American chestnut population by the 1950s.

A fungus, *Cryphonectria parasitica*, appears on the tree first as microscopic spores in the crannies and recesses of the bark. The fungus eventually invades the tree with tubelike threads that spread into the inner layers of bark. Plant cells die as the fungus invades each cell. The tree may live a long time after it's first infected, the only outward evidence that it's slowly dying being the dead limbs that appear one at a time. But after a decade or so, most infected chestnut trees are dead.

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A New Chestnut

By Shelley Sperry

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Blight-resistant American chestnuts on a Virginia research farm are striking back at the fungal disease that wiped out four billion of the majestic trees in the early 1900s. The superior pollen of this newly developed breed may be the key to protecting trees from Maine to Alabama—and returning Appalachia to a time when spring meant American chestnuts in snowy bloom. Plant pathologist Fred Hebard has been on a 40-year crusade to do just that. He and his team at [The American Chestnut Foundation](#) pollinated about 500 trees last summer. Hundreds of devoted volunteers tend those trees and others in the foundation's orchards. Next year they'll sow a handful of forest test sites with what they hope are the blight-resistant nuts. How will Hebard gauge success? "When I'm long gone, and someone 50 years from now measures one of our trees in the forest—a hundred feet tall and thriving."

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Other Resources

[Photos of chestnuts, blight, and how to plant](#)

The Redwood of the East

By David Wooddell

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The American chestnut was not just the dominant tree in many forests but one of the most prolific nut trees in the eastern region of the United States. Its annual nut crop was a dietary staple for large populations of white-tailed deer, bear, squirrels, and wild turkeys. The nuts were so vital to these wild creatures that after the chestnut's demise, the animal populations dependant on it as a food source crashed as well. Today they have barely recovered from the loss of their chestnut-forest habitat in the Appalachian Mountain regions.

Chestnut trees were also useful to people. The nuts, harvested and sold to farmers for animal feed, were important to the rural economy until the 1920s and 1930s. The tannin found in the nuts and wood was used in the leather-tanning industry and as pigment in wood stains for the furniture industry. Chestnut lumber was rot-resistant and was widely used for buildings and fences. Many 18th- and 19th-century log cabins were made of old-growth chestnut logs and still stand today as a testament to the durability of the wood. The chestnut was so useful that some people called it the redwood of the East.

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