

The demise of the American chestnut

By PAM VAN PELT - Master Gardener

For: [The Evening Sun](#)

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Several years ago, my husband and I were fortunate enough to purchase some land with acreage. Half of the land is wooded and although I grew up in the country and knew a little bit about trees, I knew I needed an expert to tell me what we had and how best to manage it.

A visit from our local service forester resulted in a wealth of information about our trees and wildlife management. During the visit, he pointed out several small American chestnut trees. He told us of the chestnut blight and how it is rare to see an American chestnut surviving in the forest today. His story of their disappearance piqued my curiosity, so I did some research on this once majestic tree.

Prior to the 1900s, the American chestnut, closely related to oaks and beeches, was quite common from Maine to Georgia and as far west as Illinois. It could grow in excess of 100 feet with considerable girth. Chestnuts are not self pollinating, so both male and female flowers are required for pollination.

Once pollinated, a spiny bur would develop and in the fall, it would split open and contain up to three chestnuts. They were often roasted or included in the stuffing for the Thanksgiving turkey.

The chestnuts were eaten by birds, deer, bear and many other mammals. They not only provided a food source, they also provided tannin, used to treat and cure leather. The wood was hard, but split easily. It was as rot resistant as redwood, so it was an excellent building material. The

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added benefit of chestnut over oak was its ability to grow 50 percent faster than oak. It grew so fast, it was commonly known as the redwood of the east.

You can still purchase old barn beams of chestnut wood, a testimony to their incredible strength, even 100 years later. At one time, the American chestnut represented one

quarter of the Appalachian forests and was the most economically important tree of that era.

The chestnut blight arrived with a vengeance in the early 1900s. It is surmised that the blight arrived with the planting of some Asian chestnut trees in or around New York City, in the early 1900s. It was first discovered at the Bronx Zoo in New York.

The American chestnut trees that lined the avenues had wilted leaves, ruptured bark and large cankers. In a very short period of time, the trees died. The blight spread up to 50 miles a year, killing every chestnut tree along the way. Attempts at quarantine were useless as it continued its path of destruction.

Businessmen who earned their living by harvesting chestnut trees were afraid there would be nothing to harvest if the blight got to their stands, so they cut them down before the blight arrived. Any trees that may have had a resistance to the disease never had a chance. By 1950, the trees were gone. It is estimated that nearly 4 billion trees died as a result of this devastating blight.

The blight responsible for this destruction is a fungus. Its spores are transmitted via wind, birds and insects that enter through cracks or wounds in the tree. The fungus then grows under the bark, affecting the cambium layer in the tree. The cambium is essential for the

life of the tree as it carries vital nutrients allowing the tree to grow and thrive. Like all trees that are wounded, the American chestnut tree tries to build a shield around the fungus to keep it from affecting the rest of the tree. Unfortunately, the fungus grows much too quickly for the tree to contain it. It eventually strangles the tree, resulting in death of the tree above the fungus. This fungus does not destroy the roots, so you will occasionally see suckers growing where an old chestnut once stood. These suckers can attain heights of more than 12 feet before they are infected and eventually die.

Is there any hope of survival for this once plentiful, useful and magnificent shade tree? For the past 25 years, The American Chestnut Foundation has been backcross breeding the American chestnut with the blight resistant Chinese chestnut. The resulting tree has all the characteristics of the American chestnut, but is blight resistant. This is not a true American chestnut, but it seems to be a very good compromise (93.75 percent American chestnut). They currently maintain more than 150 acres of these trees in Pennsylvania. For more information, visit their Web site at www.patacf.org or www.acf.org.

Pam Van Pelt is a Penn State Master Gardener.