

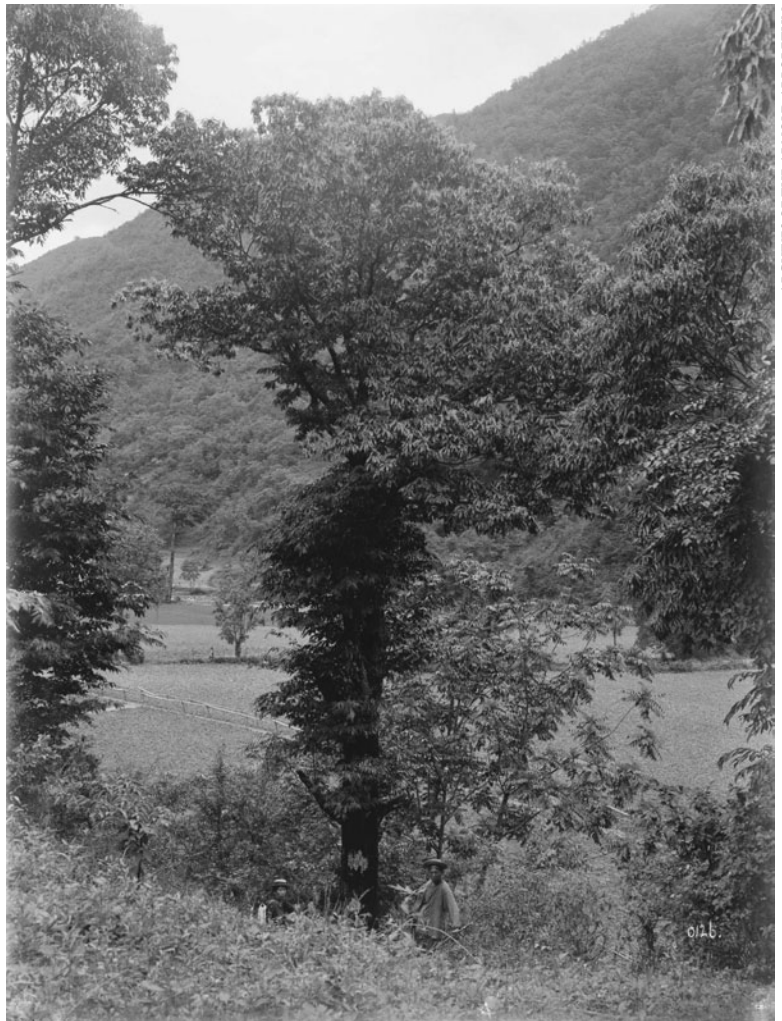
Chinese Chinquapin *Castanea henryi*

Sandra L. Anagnostakis

Charles Sprague Sargent wrote a beautiful description of this chestnut tree in his *Plantae Wilsonianae* in 1917. He also revised the taxonomy to the name that we still use today. Here is an excerpt from his article:

"This very distinct species is distributed from the neighborhood of Ningpo through the valley of the Yangtze River as far west as Mt. Omei. On the mountains of western Hupeh and of eastern Szech'uan it is common in woods. This chestnut grows to a larger size than any other Chinese species and trees from 20 to 25 meters [66 to 82 feet] tall with trunks from 1 to 3 meters [3.3 to 9.8 feet] are common. Occasionally trees 30 meters [98.4 feet] tall and 5 meters [16.4 feet] in girth of trunk are met with. The leaves are green on both surfaces and entirely glabrous except for a few appressed hairs on the underside of the primary and secondary veins. The leaves are without lepidote glands except on the upper surface of the very young leaves, from which they disappear very early. Although variable in size the leaves are very characteristic; they are always caudate-acuminate and broadest below or at the middle, and the secondary veins are projected in long aristate points. The shoots are dark-colored and quite glabrous and the winter-buds are brownish, short, broadly ovoid, obtuse or subacute and are glabrous or nearly so. The styles vary in number from 6 to 9, and the fruit may be solitary or two or three on a short spike. The spines of the ripe involucre are sparsely villose. All the fruits we have seen contain a solitary nut, but it is probable that occasionally two occur, as they do in the American *C. pumila*."

My interest in this species was piqued when I saw a large planting of it at Callaway Gardens in Hamilton, Georgia. Founder Cason J. Cal-



E. H. Wilson made this photograph of a large *Castanea henryi* growing in Hubei Sheng, China, on June 22, 1910.

laway was very interested in chestnuts, and in 1935 he began planting chestnut trees from Asia procured by the United States Department of Agriculture's plant exploration and importation program. Over a period of eight years, he planted 2,192 chestnuts, and among them were 202 *Castanea henryi* from eight different locations in China. I visited the chestnut plantings at Callaway Gardens in 1993 with Dr. Jerry Payne and Ann Amis from the USDA. We noticed that most of the chestnuts were badly damaged by the Asian chestnut gall wasp that Dr. Payne had discovered and described in 1976, shortly after a chestnut grower accidentally brought it to central Georgia. Within one

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This Morris Arboretum specimen of *Castanea henryi* (WD-069) was grown from seed collected in Wudang Shan on the 1994 Hubei expedition. It flowers heavily and bears sweet-tasting nuts that are quickly devoured by squirrels, deer, and other wildlife.

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Developing nuts are enclosed in prickly involucre.

of the plantings we came to a block of what I thought were Japanese chestnuts (*C. crenata*) and noticed that there were no galls. A check of the planting plan revealed that these were

C. henryi, and all plants that we saw of this species had either very few or no galls.

Finding a chestnut species that was clearly resistant to gall wasp presented an opportunity to breed resistance into our orchard and timber chestnut lines (*C. henryi* is also resistant to chestnut blight). We have one mature *C. henryi* here at the Connecticut Agricultural Experiment Station, but others planted over the years have not been winter-hardy enough to survive. Seeds that Wilson collected were planted at the Arnold Arboretum, but no trees from this accession (AA-551) now survive. However, one open-pollinated offspring (a probable cross with a nearby Chinese chestnut, *C. mollissima*) is still alive and well (AA-623-32).

Since that discovery of gall wasp resistance in Georgia, I have been including *C. henryi* in my crosses to produce better timber and nut-producing chestnut trees for our northeastern forests and orchards. We don't know what pest or disease of chestnuts will next be brought into the United States, but it is clear that imported chestnut species will be called into use in hybridization to combat these new threats. All the more reason to say "Keep exploring, NACPEC!"

References:

Payne, J. A., R. A. Green, and C. D. Lester, 1976. New nut pest: an Oriental chestnut gall wasp in North America. *Annual Report of the Northern Nut Growers Association*. 67: 83-86.

Sargent, C. S. 1917. *Plantae Wilsonianae: An enumeration of the woody plants collected in western China for the Arnold Arboretum of Harvard University during the years 1907, 1908, and 1910* by E. H. Wilson. Volume 3, p. 197. Cambridge, Massachusetts: University Press.

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ERRATUM 15 December 2010: The specimen shown in the two images above has been identified as a *Castanea* hybrid rather than straight species *Castanea henryi*.