

The Truth Behind Some Great Plant Stories

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BIOLOGY texts often use intriguing historical stories to add interest; however, several of these stories are often presented inaccurately. This is doubly unfortunate because it undermines scientific accuracy, and the true story is typically more interesting than the distorted version. Examining both versions of the tale is useful to show how scientists can test the validity of such stories. This article examines the truth behind some of these intriguing plant stories.

Ginkgo & Monasteries

The ginkgo (*Ginkgo biloba*) is one of the few plant species guaranteed to be in most biology texts because it is the only living species in its phylum. It is also celebrated as a “living fossil” appearing nearly identical to fossils from the Jurassic Period. It has been used medicinally for thousands of years and is currently one of the best selling herbal supplements, claiming to improve mental sharpness (Greenwald 1998). The *Journal of the American Medical Association* recently published a double blind study showing its effectiveness as a treatment for Alzheimer’s patients (Gorman 1997). The story is often told that ginkgo is extinct in the wild and was saved from extinction by Buddhist or Taoist monks who grew ginkgo in their monastery gardens. This is an intriguing story but one which appears false on both counts.

Li (1963) credits the origin of this story to Ernest Wilson (1876–1930), the celebrated plant explorer in China who found large ginkgoes on monastery grounds. However, Li (1963) discredits the monastery hypothesis in several ways. First, large ginkgoes also occurred outside of monastery gardens because old trees were revered in China and Japan. Second, monks preserved the forests around the monastery, so there were old trees of many species. Third, ginkgo had no religious significance in either Buddhism or Taoism. Fourth, ginkgo was highly valued for its edible seeds, so it was widely cultivated outside monasteries. Chinese and Japanese literature indicates that ginkgo

cultivation originated at least as early as the 1100s, and the ginkgo was brought from China to Japan about that time.

Although Wilson explored extensively in China, he covered only a small area and did not know where ginkgo originated because he had not traced it back in the Chinese literature (Li 1963). Many Chinese trees have limited natural ranges so they can be easily missed. For example, Wilson explored extensively near the native range of the dawn redwood (*Metasequoia glyptostroboides*), another living fossil, but missed it. The dawn redwood was not discovered until the early 1940s.

The early Chinese literature indicated that the ginkgo spread to northern areas from south of the Yangtze River in Eastern China (Li 1963). Wilson’s explorations failed to cover that area completely. Another plant explorer, Frank Meyer discovered a 10-square-mile area of forest with abundant ginkgoes. Despite Wilson’s speculation that these trees all originated from cultivated trees, this appears unlikely. Chinese botanists visited the area in the 1920s and 1930s and agreed that ginkgo appeared to be growing in a native state. Thus, it also appears that the ginkgo, like the dawn redwood, was never really extinct in the wild.

For a tree that is apparently extinct in the wild but still survives in cultivation, one can look to the United States. *Franklinia* (*Franklinia alatamaha*), named for Benjamin Franklin, was discovered in 1765 by William Bartram and son William (Krochmal & Krochmal 1979; Little 1993; Prince 1977). The plants grew beside the Alatamaha River in southeast Georgia. It was last seen growing in the wild about 1790. We do not know if its extinction in the wild was caused by over-collection of a small population or if it succumbed to natural fires or flooding of its riverside habitat.

Dodo & Tambalacoque

Another fabulous extinction hypothesis involves the extinct dodo bird (*Raphus cucullatus*) and the threatened tambalacoque tree (*Sideroxylon grandiflorum*) formerly *Calvaria major*, both native to the island of Mauritius in the Indian Ocean. Mauritian

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