

## Medical Uses of Ginkgo

Research has shown that ginkgo extract has at least three important actions in the body: it improves blood flow to most tissues and organs; it is an anti-oxidant that protects against cell damage; and it blocks many of the effects of blood clotting.

In recent years, Western medicine has focused on ginkgo extract, marketed as Ginkgo biloba, as protection against memory loss. Clinical trials have not confirmed this benefit, and recent studies have pointed to potentially harmful effects of taking ginkgo. Nonetheless, Ginkgo biloba sales in the U.S. exceed \$250 million per year.

The largest commercial ginkgo plantation in the world is located outside Sumter, S.C. Millions of ginkgo saplings are planted on this property, which occupies more than 7,000 acres. Leaves from these trees are harvested annually, then dried and shipped to manufacturers in Europe, where active ingredients are extracted for use in medicinal products.

## Ginkgo Petrified Forest

In the 1930s, highway workers in central Washington State discovered petrified wood deposits, and analysis identified samples as the first known examples of petrified ginkgo wood. The area was protected as Ginkgo Petrified Forest State Park in 1935. In 1975, the Washington legislature adopted petrified wood as the state gem.

Petrified ginkgo wood is now known from other sites in North America and Eurasia.

## The Hiroshima Ginkgo

In a move that brought World War II to an end, the U.S. dropped an atomic bomb on Hiroshima, Japan, on August 6, 1945.

Virtually every living thing near the blast site, including trees, was obliterated. In September 1945, scientists examined plant life near the epicenter in a bid to better understand the powerful blast.



Photo: Mandy Conti

Like many buildings, the Housenbou temple, approximately one kilometer from the epicenter, was destroyed by the bomb. But the following spring, a ginkgo tree on the temple site showed

signs of life. Although the tree's trunk was demolished, its rootstock had survived. The temple was rebuilt, and an outside staircase was redesigned to surround and protect this remarkable symbol of survival.



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State Arboretum of Virginia  
At the University of Virginia's Historic  
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# A Guide to the Ginkgo Grove



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# The Story of the Blandy Ginkgo Grove

The Blandy ginkgo grove is one of the largest collections of ginkgos outside the tree's native China. Given their autumnal glory, a visitor might assume that Blandy's ginkgos were planted solely for their beauty. But this grove is the happy result of a scientific experiment.

Dr. Orland E. White, Blandy Experimental Farm's first Director, began collecting ginkgo seeds in 1929 from a single "mother tree" on the University of Virginia Grounds in Charlottesville.



Ginkgo seeds

After these seeds germinated, Dr. White's students planted over 600 ginkgo saplings to determine the sex ratio of this tree. Most plants are

both male and female, but like holly, persimmon, and other species, ginkgo is dioecious, meaning a tree is usually male or female, but not both. Dr. White hypothesized the sex ratio would be 1:1. He did not live long enough to find out if he was right, but of the 301 trees that survived to maturity and for which gender could be determined, 157 were female and 144 were male. Statistically speaking, this does not deviate significantly from 1:1.

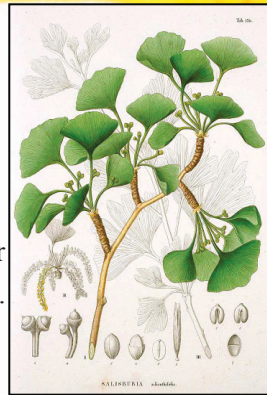
## A Living Fossil

*Ginkgo biloba* is often described as a "living fossil." It is one of the most primitive seed plants found today, and it's the only surviving representative of its plant family (Ginkgoaceae) and order (Ginkgoales).

The earliest ginkgo leaf fossils date from 270 million years ago. During the Jurassic (200-145 million years ago), the era of the dinosaurs, ginkgos were already widespread. By the Cretaceous (145-65 million years ago), ginkgos grew in what is now Asia, Europe, and North America.

Ginkgos disappear from the North American fossil record about 7 million years ago, and from the European record about 4.5 million years later.

Western scientists first learned of the ginkgo in the late 1600s, when living trees were found growing in cultivation near Buddhist temples in China. Thus, the sole remaining member of what was once a dominant plant group remains a link between the present and our geological past.



From 'Flora Japonica' by Siebold & Zuccarini, 1835

## The Silver Apricot

The word "ginkgo" originates from a Chinese word meaning "silver apricot." When mature, the

fleshy ginkgo seed—ginkgos don't form fruits—has roughly the size and appearance of a small apricot. Historians trace the earliest documented use of ginkgo as a food and herbal medicine to 11th century China, and it is still widely used in traditional Chinese and Japanese medicine.



It's important to remember that if eaten raw, ginkgo's fleshy seeds are poisonous, and we ask visitors not to collect ginkgo leaves or seeds for this or any other use.

## Coming to America

Engelbert Kaempfer (1651-1716) was a German doctor and botanist who traveled to Japan in 1690 on a mission for the Dutch East-India Company. There he first encountered ginkgo trees, and he later brought seeds back to Europe.

One of the first ginkgo trees planted in Europe was cultivated in Netherland's Utrecht Botanical Garden, where it still grows today. In 1754 ginkgos were propagated by James Gordon in his private London nursery. It was first grown in the United States in 1784 by William Hamilton of Philadelphia.

By the late 1800s and early 1900s, ginkgos had become a favorite street tree, due in part to their hardiness and tolerance of harsh urban settings. Today ginkgos line many streets in the District of Columbia and other cities. Homeowners who have male trees on and near their property are fortunate indeed, as the fleshy seeds are quite foul smelling.