Ginkgo biloba in Japan

Mariko Handa

Various theories estimate when ginkgo arrived in Japan. Some say it grew here during the Mesozoic era but then died out. Others argue that it arrived from China along with Buddhism in the sixth century. Nothing has been proven, but whenever and however it arrived, ginkgo is deeply rooted in the lives of the Japanese people, admired for its beautiful shape and its seasonal colors. Today ginkgos grow throughout Japan, along roadsides and streets, in parks and schoolyards, on shrine grounds, and in private gardens. Ginkgo serves frequently as the symbol of a region or as an object of worship, and it plays a role in many legends.

Ginkgo as a Roadside and Street Tree in Japan

According to one account, roadside trees in Japan date back to the middle of the eighth century, when fruit trees were planted along roads for the benefit of travelers. It was in the latter half of the nineteenth century, however—when Japan opened its borders and began to modernize—that trees became a part of urban landscapes.

The forerunners of modern street trees were first seen in Yokohama and in the capital, Tokyo. Willow and pine trees were planted along a street called Bashamichi in Yokohama in 1867. In 1873, black pine (Pinus thunbergii), cherry (Prunus), maple (Acer), and other species were planted in Tokyo along Ginza Street, newly modernized by the construction of European-style brick buildings. The first major use of imported trees to line city streets occurred in 1875 when a North American native, Robinia pseudoacacia (black locust), was planted in Tokyo, having been grown from seeds brought back to Japan from the 1873 International Exposition in Vienna. Ailanthus altissima (tree-of-heaven), Firmiana simplex (Chinese bottle tree), and other species were also planted at that time, but because of inappropriate planting methods or insufficient care, most of these trees died.

In 1907 a replanting project was initiated along Tokyo's streets using ten species selected for fast growth and the ability to withstand urban conditions: among them, Platanus (plane tree), Liriodendron tulipifera (tulip tree), Chinese bottle tree, Castanea (chestnut), Acer buergerianum (trident maple), Styphnolobium japonicum (pagoda or scholar tree), Cornus (dogwood), Fraxinus (ash), and Mallotus japonicus. Ginkgos were chosen for the front of Tokyo's City Hall, marking the species' debut as a street tree in Japan.

Tokyo's urban tree-planting projects suffered two major setbacks during the first half of the twentieth century. In 1923, the fires following the Great Kanto Earthquake destroyed more than half the street trees, leaving only about 10,000 still standing. As part of the effort to restore the city, more than 16,000 new trees were planted by the national government and nearly 5,000 by the city of Tokyo itself. This time the principal species chosen were ginkgo, plane tree, and black locust, all of them fast maturing.

The second disaster was the bombing of Japan during World War II, which destroyed 121,162 street and roadside trees in Tokyo, or about 45 percent of the 271,168 that were standing before the war. Postwar, the government's War Recov-
ery Agency appointed a committee to design a tree restoration project. The committee suggested that local trees be used for replanting, in order to take advantage of each region’s environmental conditions.

Government records trace the changes in tree species planted in the aftermath of these disasters and during the ensuing period of normality. Between 1922 and 1967, the species planted most often along roadsides and streets throughout Japan was the plane tree, with ginkgo in second place. The plane tree was preferred because it best suited the need for fast restoration: first from the 1923 earthquake, and later, from the devastation caused by the war. However, the characteristics that made it useful during the recovery periods—fast growth, vigorous sprouting capacity, and relatively big leaves—made it difficult to maintain as the city matured, and since 1982 ginkgo has been the preferred species for street and roadside planting. Ginkgo grows well in urban environments, withstanding pol-
Ginkgos line a walk at the Tsukuba Research Center of the National Institute of Advanced Industrial Science and Technology in Tokyo

lution, cold, and even fire. Unlike the plane tree, its shape remains symmetrical, and its changing appearance more clearly marks the progress of the seasons. Similar factors explain the popularity of Japanese zelkova (Z. serrata) and trident maple. Evergreen camphor (Cinnamomum camphora) is increasingly used for its year-round foliage. And cherry trees remain Japan’s overwhelming favorite among flowering trees, despite their susceptibility to disease. The mix of trees has varied by region, however. Ginkgo has been designated the prefectural tree in Tokyo, Kanagawa, and Osaka Prefectures, indicating that it is used preferentially there.

By 1991 a total of almost five million street and roadside trees were recorded in Japan—four trees for every kilometer of “ordinary” roads, which can be defined broadly as all roads and streets except expressways. A greater diversity of species were planted after the war: whereas in 1938 the top ten species in areas surveyed had accounted for 95 percent of all trees, by 1991, the top ten had fallen to 52 percent of the total, although in aggregate, the five million trees represented five hundred different species. Ginkgo, with 11.5 percent of the total, was followed in popularity by cherry (various species), Japanese zelkova, trident maple, and plane tree.

The use of trees is very different along roads managed by public corporations (primarily expressways). These trees accounted for an additional 1.7 million trees in 1991, representing about 210 species, with Japanese red pine (Pinus densiflora), black pine, and cedar (Cryptomeria japonica) being the most commonly used, and ginkgo accounting for only one-tenth of one percent. On these wide, high-speed expressways,
large numbers of evergreens are planted to reduce traffic noise in the surrounding residential areas. Where expressways pass through undeveloped areas, such as mountain foothills, species are selected for harmony with the surrounding natural vegetation. Both these factors mean that ginkgo trees are limited to service areas along expressways.

Ginkgo in Geometrical Japanese Landscapes

Ginkgo trees in Japan have often been used in designs that incorporate Western landscaping features, among them allées. An allée of ginkgos shapes the approach to the Meiji Jingu Gaien (Meiji Memorial Gallery) in Tokyo, built in 1926; two lines of ginkgo stand on either side of the path that leads from Aoyama Street to the Gallery. To exaggerate the perspective, the trees are maintained such that their heights decrease as they approach the Gallery—an effect that is further magnified by the slight downward slope of the ground. The massive ginkgos guide the viewer’s line of sight to directly focus on the Gallery. The entire complex includes 146 ginkgos, arranged in the four lines leading to the Gallery and in two additional, shorter allées that branch off to the left. The largest of the trees is now about 79 feet tall, with a trunk diameter of about nine feet; the shortest is 56 feet tall with a diameter of about six feet. The trees are pruned every four years to maintain their beautiful shape.

Ginkgos also form the allée in Tokyo’s National Showa Memorial Park, a 450-acre park that was created in 1983 to commemorate the fiftieth anniversary of the accession of the Emperor Showa. Because the site had previously been occupied by the United States’ Tachikawa military base, its condition first had to be improved. The 600 buildings on the base were removed, ponds were excavated, hills were reconstructed, and trees were planted and grasses sown to create forests and fields.
Geometrically pruned ginkgos in the National Showa Memorial Park, Tokyo.

From the park’s Tachikawa Gate, a canal extends 255 yards to fountains at the opposite end and, on each side, four lines of ginkgo trees. The 108 ginkgos were moved to their present location from other places on the site in 1982. They are kept at 23 feet to conform with height restrictions imposed by the proximity of the Self-Defense Force Air Base.

The ginkgo allees at both these sites—the Meiji Memorial Gallery and the National Showa Memorial Park—illustrate how Western influences have been adapted to the Japanese sensibility. By using ginkgos—a species that has rarely been used in Western geometric landscapes—the landscape architect, Yoshinobu Orishimo, rendered it unique. The alleé is a form that originated in Europe, but in using ginkgos, the effect is very different. This way of combining a form, or vessel, from the West with materials, or contents, of the East is an excellent example of the way culture changes and is transmitted in Japan.

Individual Ginkgo Trees of Note
Many individual ginkgos have taken on special importance in Japan, either for historical reasons or for their place in legend or simply for their size. A giant tree is defined by Japan’s Environment Agency as “a tree with a trunk diameter of 300 centimeters [117 inches, or close to 10 feet] or more at a height of approximately 130 centimeters [51 inches] above the ground.” According to a survey in 1988, of the 55,798 giant trees of all kinds in Japan, 4,318 (7.7 percent) were ginkgos, taking fourth place after cedar, Japanese zelkova, and camphor.

When ginkgos grow to immense size, some of them develop distinctive shapes that are reflected in the names given to them. In the senbon [one-thousand] ginkgo, the central trunk is surrounded by many secondary trunks, forming a single large tree that looks like a collection of many separate

Hashigami-cho, a giant ginkgo in Aomori Prefecture, northern Honshu.
Shibata-cho, a giant in Miyagi Prefecture, northern Honshu. Camellia japonica is flowering at its base.

trees—therefore the name “one-thousand ginkgos.” Sakasa (upside-down) ginkgos are so-called because their branches, especially the lower ones, appear to be upside down. The names meoto (husband-wife) ginkgo and oyako (parent-child) ginkgo refer to pairs of trees growing close together and appearing to be related. Ohatsuki ginkgo is a name used when flowers bloom at the margins of leaves; ohatsuki means “stuck to leaves.” In the chichi (breast) ginkgo, a number of aerial roots droop down from the thick branches and trunk of the trees, becoming narrower as they near the ground. Many women pray to these sacred trees for the ability to nurse their babies.

Many trees, whether giant or not, are associated with legend and worship. A good example is the Nigatake ginkgo at Ichou Machi, Sendai City, Miyagi Prefecture. It is a female tree about 115 feet in height with a trunk diameter of about 8.2 feet at chest height; it is said to be a thousand years old. Of its many “breast columns,” the largest is 63 inches in diameter. According to legend, the dying wish of Byakkouni, a wet nurse of the Emperor Shoumu (reign 724–749), was that a ginkgo be planted on her grave mound. A god is said to be enshrined at the foot of the tree. Women who cannot produce their own milk often worship there.

Another famous old ginkgo tree, called mizufuki (water-spray) ginkgo, stands in front of the Founder’s Hall at the Nishi Hongwanji Temple in Kyoto. Its age is estimated to be 400 to 500 years old. A legend tells that when the fire that swept through Kyoto in 788 threatened...
When the Mizufuki ginkgo showed signs of decline, a Kyoto tree doctor, Shoji Yamada, was called in to restore its vigor. First, he studied the tree externally and found spreading trunk rot and hollowing. Next, to investigate the soil layers and the distribution of the root system, soil excavations 4 feet deep and 3.2 feet wide were made at three locations under the tips of the canopy. This revealed that the soil was severely compacted by foot pressure to a depth of 4 to 6 inches, hampering the growth of feeder roots and causing asphyxiation. The measures taken to help the tree recover its vigor were:

1. Dead parts of the trunk and large branches were pruned to remove rot, taking care not to harm the tree’s beautiful shape. Then, urethane resin was injected into the tree; putty was used to prevent rainwater from penetrating this repair work. Finally, an antibacterial agent was applied.

2. The soil beneath and around the tree was excavated to a depth of 20 inches—using great care not to damage the fine roots—then filled with new soil, a soil-improvement agent, and fertilizer.

3. A shallow embankment was formed and groundcovers planted to retain moisture in summer and prevent freezing in winter.

4. To protect the tree from soil compaction, a fence and curbstones were placed around the tree to keep people away from it.

By mid-April of the same year, fresh young buds had formed. The tree has recovered its vigor and appears to be in good condition.

*Mizufuki ginkgo at Nishi Hongwann Temple, Kyoto, photographed in 2000*
to spread to the Hall, this large, male ginkgo sprayed a column of water on the flames, saving the building. It is 39 feet in height with a circumference at the roots of 29 feet and a canopy of 85 feet in diameter. In 1994 the tree was losing its vigor: its branches were drying up, and the size and density of its leaves were dwindling. Fortunately, treatment carried out at that time has restored the tree to health.

Perhaps the most famous ginkgo stands in Hiroshima. When the atomic bomb was dropped on that city on August 6, 1945, some of the trees in the temple called Housenbou survived the atomic blast, although it was only one kilometer from its center. One of these survivors was a ginkgo tree that stands near the main building of the temple. The building was instantly destroyed but the ginkgo survived; fresh young buds appeared soon afterward, and new branches formed.

The temple's followers were eager to rebuild the main building, but the ginkgo tree presented a problem. There was no room for it elsewhere on the temple grounds, and in any case, it would have been risky to move such a large tree, estimated to be 150 years old. Rather than cut it down, the building was modified to preserve the tree where it stood. The roof was changed to give the tree more space, and two stairways were built in the front of the building to form an inverted "U" with the ginkgo protected inside it. An opening under the stone stairs allows air to flow past the tree. This accommodation expresses the intense feelings that this ginkgo tree inspires, still living today, a precious witness to the disaster. It has a powerful impact on all who see it.

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Ginkgo biloba and shrine in China, the village of Leng che, Valley of the Tung River, western Sichuan. Measured at eighty feet in height and twenty-five in circumference and photographed by E. H. Wilson, 1 August 1908.