Descriptions and Illustrations of 65 Woody Plants Common to the Kanto Area

Julie Fukuda

This book is dedicated to the two Pauls in my life; my father Paul Jerabek, who supplied and nurtured the seed, and my husband Paul Fukuda, who helped with the reaping and harvest.

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FOREWORD

Learning to recognize and identify various plants with which we share our earth will sharpen your skills of observation. These skills are built into every level of the Boy Scout program. This guide book will be helpful in meeting the following advancement requirements in the program:

WOLF Elective 18g:

"Point out poison plants. Tell what to do if you accidentally touch one of them."

BEAR Elective 12c:

"Collect, press, and label 10 kinds of leaves."

BEAR Elective 12e:

"Collect eight kinds of plant seeds and label."

BEAR Elective 14b:

"Make a sketch of a landscape plan for the area right around your house or for an apartment building. Talk it over with your parents or den leader. Show what trees, shrubs and flowers you could plant to make the area look better."

WEBELOS Forester Activity Badge

"1. Identify six forest trees. Tell what useful things come from them."
"2. Identify six forest plants that are useful to wildlife. Tell which animals use them and for what."

WEBELOS Naturalist Activity Badge

"6. Learn to identify poisonous plants found in your area."

TENDERFOOT Requirement 10

"Identify local poisonous plants."

FIRST CLASS Requirement 6

"Identify or show evidence of at least 10 kinds of native plants found in your community."

BOY SCOUT Merit Badges

Botany, Forestry and Landscape Architecture Merit Badges

EAGLE-Required Environmental Science Merit Badge

Boy Scouts of America makes them indispensable part of its programed requirements because of the importance of relationship between people and trees. This relationship continues regardless of where we live. Many of us may not live in Japan for the rest of our lives, or may not even complete the BSA program with the Far East Council, Japan District. However, wherever we are in the world we must not stop sharpening our eyes and awareness of our environment. It is with that need in mind that this small guide book of the trees and shrubs in the Kanto Plain has been compiled.

INTRODUCTION

IDENTIFICATION OF TREES BY LEAVES

During seasons when leaves are plentiful, studying leaf samples collected from the tree is a good way to make an identification. If it is late in the season, be careful of collecting fallen leaves. They may have drifted with the wind from some other tree. A poor sample that is still attached to the tree is a better sample.

Study a leafy twig from an average branch. Note the placement of leaves on the twig: Are the leaves paired or alternate; are they growing singularly or clustered? Look at a single whole leaf. Be sure you are not looking at a leaflet of a compound leaf which sometimes appears to be a whole leaf. First, look at the tip of the twig. If there is a bud, flower or fruit, then those coming off along the twig are single whole leaves. On the other hand, if there is what appears to be a single or paired leaves with no bud at the tip, then you are likely to be looking at part of a compound leaf. Also note the length of the leaf stalk or stem.

Decide if the leaf has a broad blade (broadleaved) or a needle (conifers). If the tree is broadleaved, it will be either evergreen or deciduous. In winter it is easy to tell this difference. At any rate, you will find that the leaves of an evergreen are tough, hard, thick, leathery and have glossy upper surfaces. Leaves that fall in autumn, deciduous, tend to be more delicate. These can be divided further into the following five groups.

Simple undivided leaves may be round, triangular or oval in outline and their veins either spread out from the base of the leaf or branch out from a main vein. The patterns of the veins is a clue.

Palmately-lobed leaves, such as those of maple, have leaf lobes extending into 3, 5, 7 or more lobes. Their main veins run out from the base of the leaf to the end of each lobe.

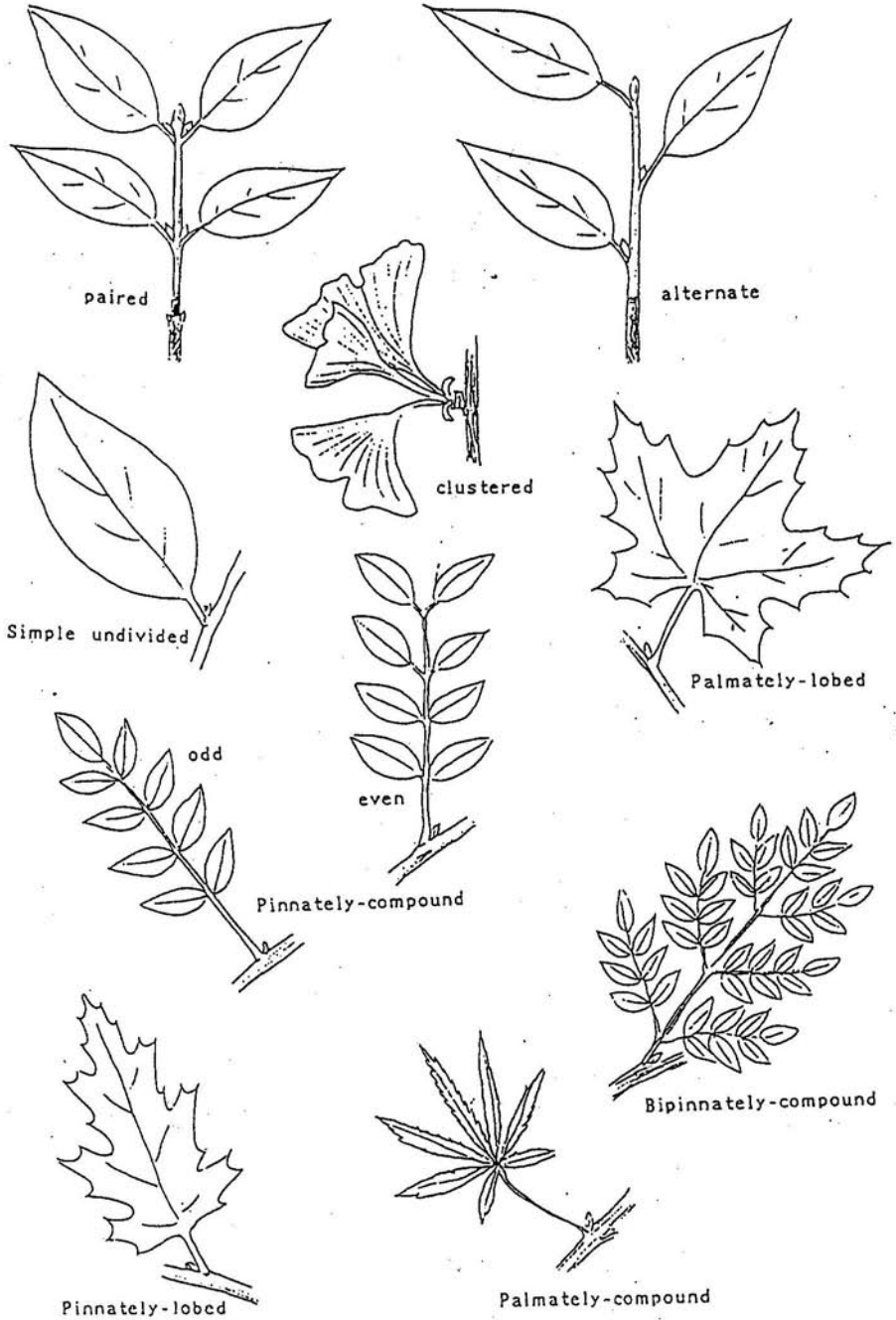
Pinnately-lobed leaves have lobes projecting from the sides of the leaves. The veins to the lobes branch off from the main vein at the center of the leaf.

Palmately-compounded leaves have separate leaflets radiating from the tip of a main stalk.

Pinnately-compound leaves have 5 to 21 leaflets growing alongside a long central stalk. This group has a sub-group called bipinnately compound.

There are a few exceptions to the rule, as some trees, like mulberry for example, have both simple and lobed leaves on the same tree. These exceptions would also be a clue. So, look at more than one leaf on the same tree.

When looking at the leaf shape, notice the point of the leaf. It may be a sharp point, rounded, or even indented. Also notice the base of the leaf, and see whether the leaves are serrated or toothed, or even doubly toothed. In general, pay attention to the size of the leaf and to any fuzz or hair, especially on the underside of the leaves. Some broadleaves, such as those of camphor, will give off a smell when crushed. Al-



though color varies with the season, it, too, may be a clue. Evergreen oaks, for example, may have a different color on the undersides of their leaves from that of the surface.

To identify trees with needle-like or scale-like leaves, notice the shape of the needle and its placement or arrangement on the twig. If there are any cones on the tree, notice their characteristics as well. These will all be clues to identification.

If the needles are attached to the twigs in bundles of two, three or five, this would indicate the pine family. If there are many needles radiating from short shoots in tufts, the tree could be a deciduous larch. If there are single needles mixed with the tufts, the tree may be a cedar.

If the needles are rather soft and flat and attached singly to the twigs, radiating from the twig mainly in two directions to form a flat spray, then, the tree may be a metasequoia. If they are tough and leathery, torreya or yew would be indicated.

Sharp stiff stalkless scale-like needles, radiating in a spiral fashion all around the twigs so that the twigs are concealed, belong to the cryptomerias. Flattened fern-like sprays covered with scale-like leaves belong to the cypress family.

In addition to the above, you may find ornamental conifers that are not covered in this guide book. An English guide book will help you decide the general classification if you remember to look carefully at all the clues.

IDENTIFICATION OF TREES BY OTHER THAN LEAVES

This method is useful in identifying deciduous trees in winter while the tree is dormant. All trees have a single terminal bud at the end of the woody twig. Note side buds on the twig. If they are in opposite pairs the tree may be a maple or dogwood. If buds are clustered at the shoot tips, this would indicate oaks. The twigs on such trees as birch are fine and those on sumac are heavy.

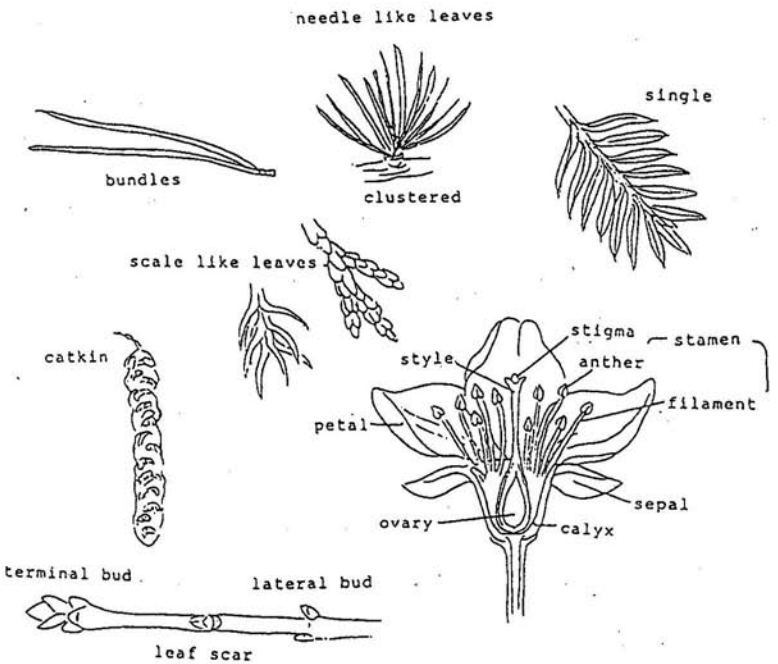
If the bud with only a single oval outer scale is hugging the twig, the tree belongs to the willow family. A single conical outer scale is characteristic of plane trees. Alders have buds that are on stalks. Magnolia buds are fuzzy.

Many trees have bark which is a distinguishing feature. Beech trees have smooth bark even in older trees. The bark of the plane trees flakes off in patches and aged zelkova flakes off in large thick plates. Some maples have flaky scales. Bark that strips off horizontally is characteristic of birches, and tight stringy bark stripping off vertically could be cryptomeria, hinoki or metasequoia. Smooth bark with prominent breathing pores occurs on cherries and young zelkova. Most oaks have rugged broken ribs. Networks of fissures and ribs are characteristic of willows and camphor.

If flowers are available, they may be useful. The season of flowering is a fairly good clue, though there may be some variety with the latitude and weather conditions. Willows, alders, elms and some maples flower before the leaves appear. Flowers on plums and cherries may bloom also before the leaves appear but, if the spring is warm, the leaves may appear at the same time. Notice if the flowers are petaled or catkins. Compare them with descriptions in the guide book.

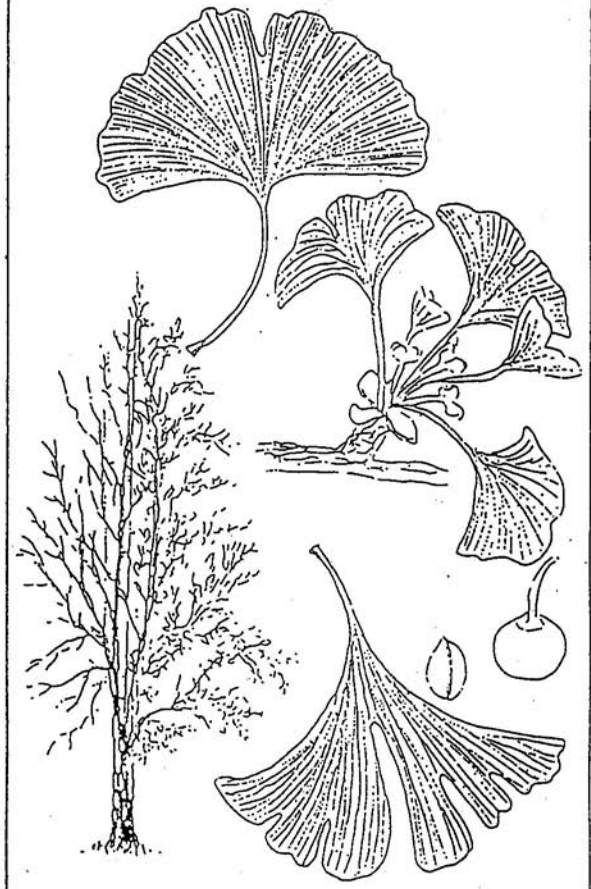
Fruits and seeds are highly distinctive for each type of tree. If they are available, they will help in identification. However, like the flowers, they are only on the tree for a short time. The number of seeds on trees varies from year to year. Male trees and trees too young to bloom will not have seeds. Knowing the number of seeds contained in the fruit that develops from a single flower may help in identification. In the case of 2-3 or 4 seeds, however, one must be careful because occasionally one seed of the group may fail to develop. One-seeded fruits include those of beech, elm, oak, cherry, plum, yew, ginkgo, palm and zelkova. Fruits having 2 to 5 seeds occur on chestnut, maple (2 seeds in pairs), dogwood and camellia, while willows, birch, alder, mulberries, magnolia, sycamore, sumac and trees with cones bear fruits with many seeds.

For making identification of trees not found in this guide book, a field book of Japanese trees in Japanese is most helpful. Even if you may not be able to read the Japanese descriptions, compare the pictures of leaves, seeds or flowers. Note the *Latin* name of the plant. That is the true name of the plant. Common names of plants vary from one area to another, and country to country. Common names are often misleading. By learning the *Latin* name you will discover the relationship between the tree you have identified and plants found all over the world. With a good Japanese guide book you should be able to find the *Latin* names. Then using a guide book published in English, look up the tree by its *Latin* name. You may not be able to find that particular tree in the English guide book, but you may find a description of other trees in the same family. Both Simon & Schuster's and Macdonald's guide books contain descriptions of trees found in Japan. Richard's *Japanese Plants* is poorly arranged but has good color photographs and interesting facts. It is small enough to carry in a day pack. *Nihon no Jumoku* published by Yama-kei Publishers Co., Ltd. is the most useful book in Japanese, although it is rather heavy to carry.



1. CYCADS (Sotetsu)
Cycas revoluta (Cycadaceae)

Cycads are very ancient and primitive plants. The earliest fossil cycads date back to 240 million years ago. They can be found in many tropical parts of the world. The shape is rather palm-like. The straight trunk is unbranched with a crown of leaves. The leaflets of the pinnately-compound leaves have only a single mid-vein. Male and female cones are produced on separate plants. Cycas plants are cultivated as ornamentals in greenhouses or tropical gardens. In cold areas they need to be protected in the winter.



2. GINKGO, Maidenhair Tree (Ichō)
Ginkgo biloba (Ginkgoaceae)

The ginkgo is the only living representative of a group of trees that lived 195 million years ago. This deciduous tree grows to 40 meters and is tall and slender with a pyramidal crown. The trunk tapers evenly and is brown to dull gray in color. The bark has dark and irregular fissures. The leaves (5~8 cm) are fan-shaped and more or less divided into two lobes. The leaves spring from rough knobbly shoots in an alternate arrangement and are pale green with undivided parallel veins like the ribs of a fan. They turn a bright golden yellow in autumn. Trees are either male or female. The male flower is a yellow catkin, 6~8 cm. The female flowers are small green acorn-shaped structures in groups of two or three on long stalks. The gingko flowers in April. Yellow fruits with one large seed ripen in the fall. The flesh of the fruit has an unpleasant smell as it ripens. The inner seeds are roasted for eating (rich in Vitamin B).

This tree can be grown in a wide variety of conditions and is free of disease and resistant to pests and air pollution. The ginkgo is often grown as a side-walk tree in the cities where it is pollarded (trimmed) to control the size and shape.

3. TORREYA, Japanese Nutmeg Tree (Kaya)
Torreya nucifera (Taxaceae)

Closely related to the yews, this evergreen grows to the height of 35 meters. The linear leaves, 2~3 cm long, grow around the branches in a spiral pattern but, because the stalks are twisted, they appear to be opposite. The leaves are dark glossy green on the upper side and very aromatic when crushed. The seeds are more or less ovoid, green, tinged purplish-red, and are edible. The bark of this tree is brownish gray and peals off in flakes on older trees.

4. YEW (Ichi-i)
Taxus cuspidata (Taxaceae)

A broad bushy tree, this evergreen is popular for hedges but can also grow 20 meters. The alternate hard spine-tipped leaves, 2~4 cm, turn sharply upward and are dark green above; brownish yellow beneath. The dark poisonous seeds are enclosed in a fleshy cup, or 'aril.' The sweet red aril is the only part of the plant that is not highly poisonous if eaten. The bark is reddish brown and stringy. The wood is good for canes, flooring and veneer.

5. CYPRESS, Hinoki Cypress or White Cedar (Hinoki)
Chamaecyparis obtusa (Cupressaceae)

This species of false cypress grows to a broadly conical shape of 36 meters. The blunt-edged leaves grow in flattened sprays, dark green above and patterned with pale bluish lines below. The foliage has a pleasant smell when crushed. The cones are about 1 cm across, green turning to brown at maturity, having 8 scales with small points. The bark is red brown and stringy. The timber is highly valued for building, furniture, wooden bath tubs and other items. It has a cedar-like smell and does not split or warp.

6. DAWN REDWOOD (Akebonosugi)
Metasequoia glyptostroboides (Taxodiaceae)

The Dawn Redwood is one of the deciduous conifers. It bears needles and branchlets in opposite pairs. It is unique in that the buds grow out below the twigs rather than in the axils as on other trees. In autumn the pale-green needles turn orange and branchlets drop as one piece. The tree has a narrowly conical shape and grows to 35 meters. The bark is thin, red-brown and stringy. The trunk develops deep rounded ribs as the tree matures. The oval cones with wrinkled scales are at first green, later turning brown and hang down on long stalks. The tiny brown oval seeds are surrounded by a yellow wing.

7. JAPANESE CEDAR, Japanese Red Cedar (Sugi)
Cryptomeria japonica (Taxodiaceae)

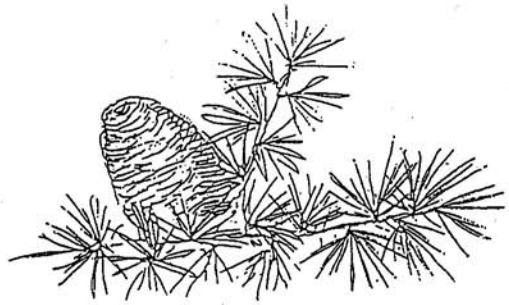
The scale-like evergreen leaves of the cryptomeria are pointed and bend out from the stem. The male and female flowers appear in the spring on the same branch. The male flowers in spike-like clusters scatter yellow wind-borne pollen from many sacs causing misery to many hay-fever sufferers. The round cones are about 2 cm in diameter on short stalks.

(Continued from Page 4)

They are green turning brown as they ripen.

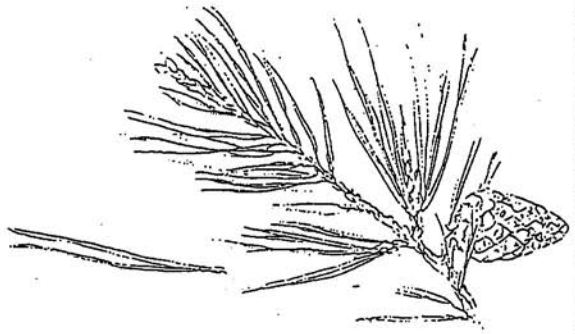
These tall trees with conical top have red-brown bark which peels off in shreds. They sometimes grow to more than 60 meters. The wood from this fast growing tree is durable, insect-resistant and highly valued for construction, shrine building, furniture and roofing as well as for boxes and chopsticks.

8. HIMALAYAN CEDAR (Himaraya Sugi)
Cedrus deodara (Pinaceae)



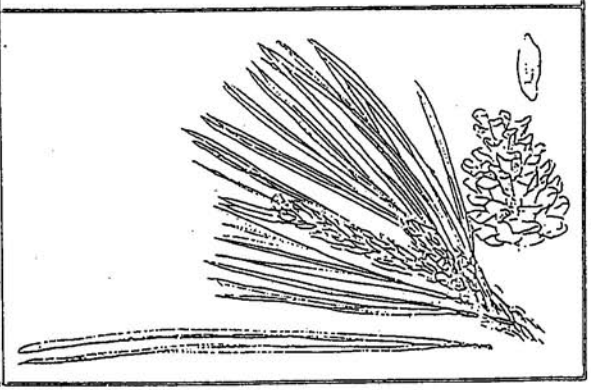
This species is named from *devadara*, or 'tree of gods' in Sanskrit. This evergreen grows up to 50 meters. It is pyramidal in shape with level branches drooping at the tips. The silvery green leaves are needle-like 3~6 cm long and smooth. The smooth-scaled cones are long, barrel-shaped and rounded at the end. The dark gray bark is evenly fissured.

9. RED PINE, Japanese Red Pine (Aka-matsu)
Pinus densiflora (Pinaceae)

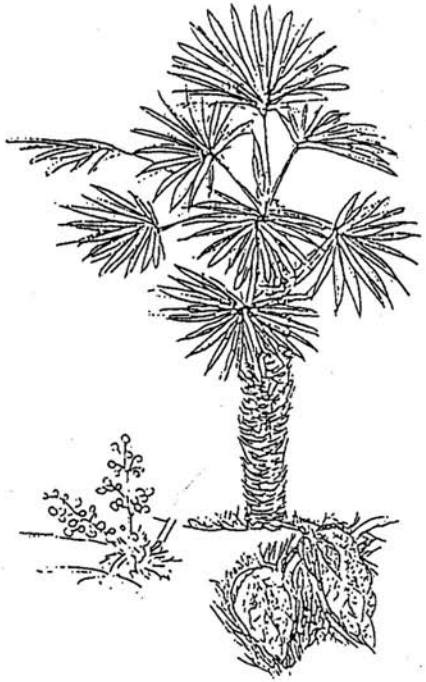


This pine, distinguished by its red trunk with irregular plates of bark, grows to 30~35 meters, but on occasion may reach 50 meters. The 7~12 cm needles grow in bundles of two. The male flowers appear in dense clusters at the base of the new wood in April. Female flowers are at the end of the new growth, and the round cones, 3~5 cm, ripen in October the following year. The lumber is used for general construction and pulp. Japanese potters use red pine to fuel their kilns.

10. BLACK PINE, Japanese Black Pine (Kuro-matsu)
Pinus thunbergii (Pinaceae)

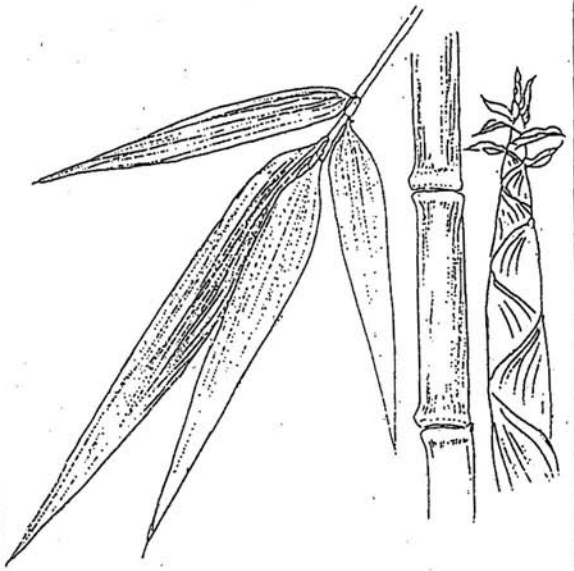


Similar in looks to the red pine, this tree also has needles in bundles of two. The needles are 5~16 cm and the cones 5~7 cm in length. The dark gray black bark splits into plates which are very thick on older trees. While red pine is found in forests and hills, black pine grows naturally along the sea coast. It is strong against dryness or salt spray and makes a good wind-break.



11. PALM, Windmill Palm
(Shuro)
Trachycarpus fortuni (Palmae)

Originally from China, the windmill palm is one of the hardiest of all palms and often found in gardens. The single shaggy trunk with a crown of leaves may grow to 5~10 meters in height. The flat fan-like leaves are 50~80 cm wide and divided into numerous stiff segments that blend at the tips. The small yellow flowers hang down in clusters at the base of the leaves. Male and female flowers are on separate trees. Fruits are yellow at first turning blue-black in late October.



12. BAMBOO, (Take)
Phyllostachys bambusoides
(Gramineae)

Bamboo is a basic plant of Japan. There are about 50 genera and 1,250 species of which about 15 types grow commonly in Japan. Examples of those genera are *Bambusaceae, Phyllostachys, Sasa* and *Pseudosasa*. In English all of these are referred to by the common name 'bamboo.' Bamboos cannot be regarded as 'true' trees, but in some species the stems exceed the height of true trees. The plants shoot up from a running root below ground. The shoots, when they break through the ground, are as wide as the adult plant will ever get and contain all the joints for reaching the final height. Bamboo is known to grow very rapidly. The shoots may be eaten if cut while they are young and tender. Bamboo is one of the most often used plants for daily life in Japan.

13. SNOWBELL TREE (Ego-no-ki)
Styrax japonica (Styracaceae)

This native deciduous tree is found all over Japan. It grows to a height of 7~15 meters with graceful spreading branches. In early summer (May to June) clusters of white flowers hang on the undersides of the branches. These are replaced with green egg-shaped fruits, 1~1.3 cm long, hanging from long stalks with a tight fitting calyx. The leaves are alternate, 4.5~8 cm in length. The trunk has smooth dark purplish brown bark. The bark of the second-year growth can be peeled off in strings. Skin of the fruit can be used for laundry soap or as an anesthetic to catch fish. The wood is used as the central hub in the construction of bamboo umbrellas, because it is strong and can withstand wear.

14. AZALEA, Wild Azalea
(Yama-Tsutsuji)
Rhododendron kaempferi
(Ericaceae)

This semi-deciduous bushy tree grows to 1~4 meters high. The pale orangey-pink flowers, 4~5 cm, bloom from April through June at the tip of the branches. The flowers may vary in color to red or purple, or sometimes white. The leaves, 3~5 cm in length, are alternate and thin with fuzz on both sides. There are many types of hybrid azaleas grown as garden shrubs and hedges. Flowers vary from white to pink, or even to red, orange and purple. This plant grows well in the acid soil of Japan and does not mind the pollution along roadsides.

15. HELWINGIA (Hanaikada, Mamakko, Yome-no-Namida)
Helwingia japonica
(Cornaceae)

This shrub grows in hills and mountains. The leaves are alternate, 6~12 cm, elongated oval with curved teeth. You notice this tree because of the interesting flowers and fruit which grow out of the main vein of the upper side of the leaf, giving rise to the various Japanese names of *Hanaikada* (flower-raft), *Mamakko* (step child) and *Yome-no-Namida* (bride's tears). Male and female flowers are on different trees. The pale green flowers bloom in May and June; males in groups of several flowers, each with four pollen-bearing stamen, and females singly or in groups of no more than three with one central stigma. The fruit, 7~9 mm, is round and black when ripe and sweet. The young leaves are used as mountain vegetables in cooking. This plant is also grown as a yard tree or used in flower arranging.

16. FATSIA, (Yatsude)
Fatsia japonica (Arliadeae)

This shrub-like evergreen tree is native to Japan. It may have several trunks coming from the base and grow as high as 3~4 meters. The big (15~45 cm) glossy green palmate leaves have long stalks. The flowers are inconspicuous and white, growing from the top of the plant. The small berries turn from green to white, and to black when ripe. This plant can be found in half shaded spots coming up from seed.

17. DOGWOOD, Flowering Dogwood (Hana-mizuki)
Cornus florida (Cornaceae)

This tree is actually a native of eastern U.S.A. It grows to 8~11 meters with a wide crown and spreading branches, with the end twigs pointing upward. The leaves are pointed ovals with wavy edges and turn deep red before falling. The flowers appearing in mid-spring may be white or pink with four petals (actually bracts) and the red berries ripen in October, attracting many birds. There is a Japanese tree of this family (Cornus kosua), being somewhat smaller and with creamy white flowers with pointed bracts. These flowers bloom after Cornus florida, with fruit resembling big red raspberries.

18. GARDENIA (Kuchinashi)
Gardenia jasminoides
(Rubiaceae)

This 2~3-meter evergreen shrub can be seen growing wild at the edges of woods in warmer areas or in gardens. The leaves are dark, glossy and leathery and grow in pairs with supportive leaflets at the base. Fragrant waxy white flowers may be single- or double-petaled, and bloom through June and July. The fruit, about 3 cm across with ribs and 6 horns at the top, contains seeds and gives a dye used as yellow food coloring. The fruit does not open, giving the Japanese name which means *No mouth*.

19. TRIDENT MAPLE (Tō-Kaede)
Acer buergerianum
(Aceraceae)

This member of the maple family grows to 20 meters with a rounded crown. The leaves are narrow-based with three pointed lobes and three veins. They grow in dense masses. The wings of the paired seeds are not widely spread and seeds grow in clusters. The trunk is brown with flaking bark. These trees are often used as sidewalk trees.

20. JAPANESE MAPLE (Momiji)
Acer palmatum (Aceraceae)

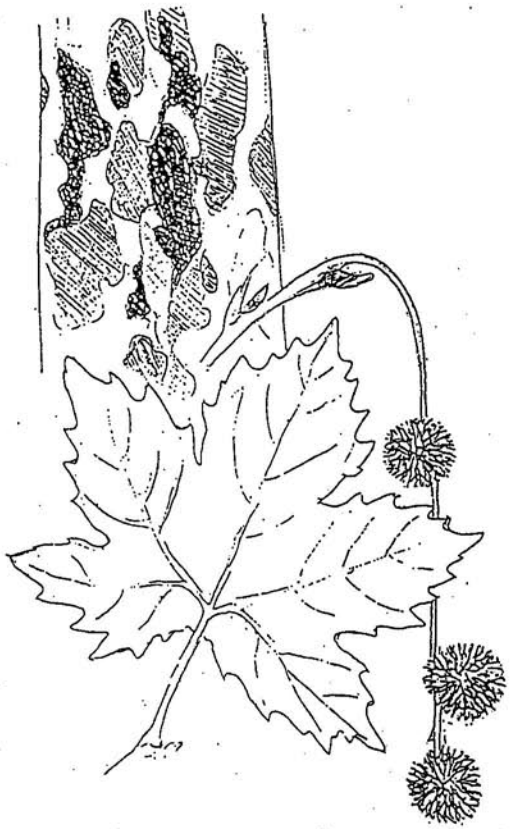
There are many variations of this tree. The specific name *palmatum* refers to the shape of the leaves which resembles the palm of a hand with the fingers spread. This deciduous tree with a domed crown grows to 16 meters. The leaves are divided into 5~9 fine-toothed tapered lobes on smooth stalks. In spring the foliage is shaded from green to red, and in autumn the colors are more vivid shades of red and yellow. The pairs of winged seeds form a wide angle.

21. CUT-LEAFED JAPANESE MAPLE
(Shidare-Momiji)
Acer palmatum var. dissectum
(Aceraceae)

This is a hybrid variety of Japanese maple with fine lacy leaves split all the way into 7-9 narrow lobes. The new leaves are reddish and some plants retain a bit of red even in summer. This highly ornamental tree with drooping branches (*shidare* in Japanese) is frequently used in gardens.

22. ORIENTAL PLANE TREE
(Suzukake or Puratanasu)
Platanus orientalis
(Platanaceae)

Planes are also known as sycamores, buttonball or buttonwood trees in America. They are deciduous and are easy to identify from the scaling bark, giving the trunk a green, brown and white camouflage effect. The rounded spreading tree can grow to 20 meters or more. The large leaves, 20 cm, are palmate and lobed with the variety of shapes, sometimes on the same tree. The leaves of planes are usually one of the last to fall in autumn. The spiky fruits hang in clusters in the fall. The planes are often used in parks and as sidewalk trees.



23. JAPANESE SUMAC (Nurude)
Rhus javanica (Anacardiaceae)

This tree grows in hilly fields to a height of 3-7 meters. The compound leaves, 30-40 cm, have 4-6 pairs of leaflets and one leaflet at the tip of the winged stalk or petiole. The leaflet edges have dull teeth. The back side of the leaf is fuzzy. The tree blooms in August to September with spikes of white flowers. The berries are yellowish white with a powdery surface that is sour to the taste. A certain insect parasitizes this tree leaving peculiar looking galls on the leaves that are rich in tannin.

24. LACQUER VINE
(Tsuta Urushi)
Rhus orientalis (Anacardiaceae)

This is not a true vine in that it does not wrap around things but climbs using aerial roots. This type of poison lacquer has a compound leaf made up of three leaflets on a long stem, resembling in this way poison ivy, its American relative. The top leaflet has a short stem and is 12-15 cm long, oval with a broad wedge-shaped base. Side leaflets are egg-shaped with a round base and have no stems. The young leaves have brownish fuzz on the underside and, when fully grown, there is dense fuzz along the side veins on the undersides of the leaves. Male and female flowers grow on different plants and appear in May to June in the leaf axis of the new growth. The berries are white. The deciduous leaves turn a beautiful red in autumn.

25. MOUNTAIN LACQUER
(Yama-urushi)
Rhus trichocarpa (Anacardiacea)

This attractive tree grows to around 3 meters in height. The twigs and leaf veins, and in fall the whole leaf, are dark red. The leaflets are paired on the stem with one leaflet at the tip, with the leaves growing from the branches in an alternate pattern. The leaves are poisonous and cause a rash upon contact with the skin. The purplish-red berries that appear late in summer are spiky and also cause a rash. Except for its size, this tree looks like the *Urushi*, Poison Lacquer.

26. POISON LACQUER (Urushi)
Rhus verniciflua (Anacardiaceae)

Taller than the Mountain Lacquer this variety reaches a height of 10 meters. It is the most toxic of the lacquers. The sap is used in making lacquerware.

27. PUSSY WILLOW (Neko-yanagi)
Salix gracilistyla (Salicaceae)

Like most willows this shrub grows in wet places and has long thin pointed leaves that alternate on the stem. The name pussy-willow comes from the short hairy catkins that open ahead of the leaves and are often gathered for decoration. This plant is easy to root from cuttings.

28. WEEPING WILLOW (Shidare-yanagi, Ito-yanagi)
Salix babylonica (Salicaceae)

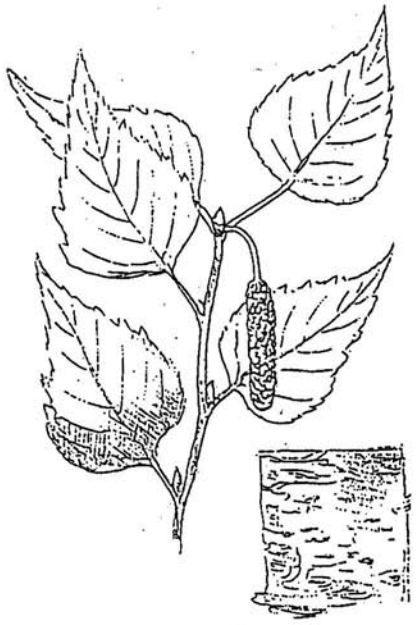
The weeping willow originates in Asia and takes its name from the long hanging leaves and twigs. This is one of the first trees to leaf out in spring, and its yellow-green leaves turn pale green as seasons progress. They are also one of the last leaves to fade and fall. This dome-shaped tree grows to 17 meters and likes wet places around lakes.

29. EURYA (Hisakaki)
Eurya japonica (Theaceae)

This evergreen, shrub-like tree, 4-8 meters in height, has thick shiny and pointed leaves. They are alternate and 3-7 cm long, with toothed edges. The yellowish white bell-like flowers bloom in clusters along the stalks in March and April. The fruits are little berries that turn from green to black in late summer and remain through the spring.

30. MAHONIA, Barberry (Hiiragi-nanten)
Mahonia japonica (Berberidaceae)

This shrub, 1-3 meters tall, originally came from the Himalayas through China. The evergreen holly-like leaflets are arranged pinnately in 5-9 pairs. Often leaves turn bronze in winter. The flowers hang in fragrant yellow clusters in early spring, and are followed by berries that ripen to a dusty purple-black in September-October.



31. WHITE BIRCH (Shira-kaba, Shira-kanba)
Betula platyphylla (Betulaceae)

The trunks of white pealing bark, marked with clusters of dark brown breathing pores, make this tree easy to identify year round. This tree resembles the American paper birch *B. papyrifera*. The white birch grows in tall (20 meters) irregular rounded crown. The leaves are triangular in shape, finely toothed with thin stems. Pollinated female catkins hang down in autumn. The wood of the birch is a light color, hard, and useful for furniture, veneers, and makes excellent firewood.

32. MOUNTAIN ALDER (Yama-han-no-ki)
Alnus sibirica (Betulaceae)

The name alder may derive from the Celtic meaning 'near the banks' as many species of this genus grow in damp soil. Alders, 3-18 meters tall, are the only broad-leaved trees that bear cones, and several varieties grow wild in the Tama area and the Yokosuka Naval Base. The female catkins (shorter than male's) develop into soft green round cones that turn a woody brown in autumn. Alders can be identified in winter by the old cones and the purplish-brown club-shaped buds set alternately along dark brown twigs.

The mountain alder is most shrub-like of all alders, and often found in Tama. Its leaves are broad and irregularly-toothed with a pointed tip. Its male catkins grow downward to the length of 7-9 cm. This tree grows in almost any sunny spot irrespective of the types of soil. The wood is frequently used for making charcoal.

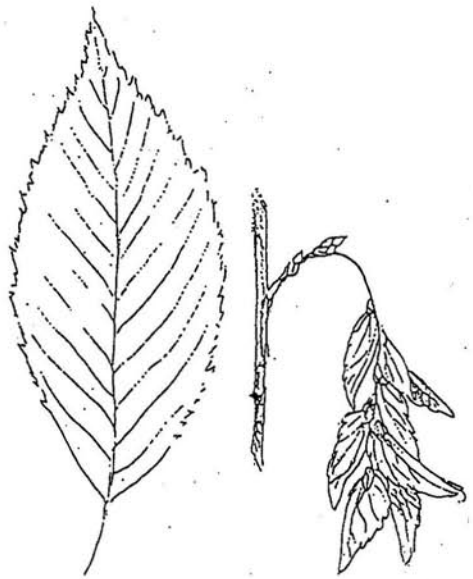
33. JAPANESE HORNBEAM (Kuma-shide)
Carpinus japonica (Betulaceae)

This tree gets its English name *hornbeam* from the fact that the hard, horn-like wood was once used to make ox yokes. It grows to about 13 meters in a rounded shape and is deciduous. The bark is smooth and brownish-gray when young, becoming darker and rougher as the tree ages. The long and oval leaves have strong parallel veins and clearly toothed edges. Male and female catkins occur on the same tree. The female catkins are pollinated by the wind and ripen into clusters of green, paper-like, three-pointed wings. The hard tiny seeds are at the base of each wing.

Today the wood is used as butcher's chopping blocks and hammers within pianos. It is a first-rate firewood.

34. YEDO HORNBEAM (Inu-shide)
Carpinus tschonoskii (Betulaceae)

Taller than *C. japonica*, this tree grows to 15 meters, with a slightly twisted trunk and smooth bark. The leaves have the same parallel veins and doubly-toothed edges, but are wider at mid-point. The seed clusters are sparser and the wings are sickle-shaped with toothed edges.



35. KONARA OAK, Small Leaf White Oak (Ko-nara)
Quercus serrata
(Fagaceae)

One of the best features for identifying any oak is the cluster of buds at the twig tip. Another is the seed or acorn nestling in its round cap. Due to interspecific hybridization the leaves vary from tree to tree in size and shape.

The *ko-nara* is found in sunny hills and fields and grows to 15-20 meters. However, it may reach 30 meters under good conditions. The gray-black bark has irregular vertical fissures. Leaves alternate on the stems. They are 5-15 cm long, reverse egg-shaped with sharply pointed tips. The base may be wedge-shaped or round and edges saw-toothed. The underside of the young leaves is fuzzy and grayish-white. The tree blooms in April or May. The male catkins, 6-9 cm, hang on the new growth but the small yellowish female flowers are inconspicuous. The 1.5--2-cm acorn sits in an oval cap. The wood is used in construction and also makes good firewood.

36. JAPANESE CHESTNUT OAK (Kunugi)
Quercus accutissima
(Fagaceae)

This oak grows in hilly areas and the bark has deep irregular vertical fissures. The leaves are long (8-15 cm) and narrow (2 cm), and the sharply-toothed edges are an extension of the veins. The leaves tend to hang on the tree after they have died until new growth pushes them off. The round acorn matures in autumn of its second year and is the largest (2 cm) of this genus. The cap has long scales arranged in a spiral shape and covered with white fuzz.

37. JAPANESE RED OAK, (Aka-kashi)
Quercus acuta (Fagaceae)

The name for this tree comes not from the leaves but from the color of the timber, which is reddish. This big rounded evergreen grows to 25 meters. The thick bark is grayish black. Leaves are alternate, 7-20 cm in length and elongated egg shape with sharply pointed tips. The edges of the leaves are almost smooth. The leathery leaves are glossy dark green on the upper surface and light green below. In April/May the male catkins hang at the upper end of the new growth. The female flowers are at the upper end of the new growth and are pollinated by the wind. Acorn ripen in autumn of the following year and are edible. The acorn caps are shallow with 6-7 layers of ring-shaped scales. The timber is used for ship-building, general architecture and musical instruments.

38. EVERGREEN OAK (Suda-jii, or Shii)
Castanopsis cuspidata
(Fagaceae)

This large rounded tree grows to 30 meters with dense foliage. The dark blackish gray bark is smooth, developing splits as it ages. The 6-15 cm leaf is a broad oval shape with wavy teeth on the upper half. The thick leathery leaf is deep green on the upper surface and gray-brown underneath with fuzz. This tree blooms in May/June. The male catkins grow upward from the lower part of the current year's growth. The flowers are yellow and have a strong smell. Female catkins grow below the male and are pollinated by insects. The seeds ripen in autumn of the following year. They are cone-shaped with a pointed head and edible. The acorns are fully covered by a capsule which splits into three when the seed is ripe. This is a popular park and and garden tree, grown as a wind break. The timber is good for building, ships, and the split wood is used to grow mushrooms. That is why Japanese mushrooms are called *shii-take*, or 'fungi on *shii* tree.'

39. CHESTNUT (Kuri)
Castanea crenata
(Fagaceae)

This deciduous tree grows to 15-20 meters with spreading branches and a rounded crown. The leaves are slender, 7-15 cm, with distinct veins and crenate edges (thus the name *crenata*) and having gray down on the underside. The male catkins appear as long tassels in June and July, and the fruit can be seen in August looking like round green pincushions among the branches. It ripens from mid-September to October. The ripe nuts are delicious, boiled or roasted. The wood is golden brown and useful for furniture or building houses.

40. SIEBOLD'S BEECH (Buna)
Fagus crenata
(Fagaceae)

Beeches occur in all three continents of the Northern Hemisphere. This Japanese species, named after a Dutch naturalist who came to Japan in late the 19th century and introduced many Japanese plants and animals to the rest of the world, grows up to 30 meters with a round spreading top and smooth gray bark. The leaves are alternate, with each 5-10 cm long, widest below the middle and more or less oval in shape. The leaf edges are wavy, or crenate. There are 7-10 pairs of veins. The elongated winter buds are a very distinctive feature of this family. The flowers are unisex and the nuts are enclosed in a woody prickly capsule on a short stem. Beech timber is strong and hard, and valuable for flooring and furniture, but it does not hold up well if exposed to weather.

41. ZELKOVA (Keyaki)
Zelkova serrata (Ulmaceae)

This native deciduous tree, growing 30 meters, is admired for the graceful symmetry of its slender branches. The leaves, which are arranged alternately, are tapered ovals, 5 cm long, and sharply toothed with a rough surface. They are a fresh green in spring and turn orange in autumn. The young bark contains horizontal stripes similar to cherry or birch, but in older trees it flakes off in thick chunks, giving the gray, brown bark a mottled appearance. The wood is very beautiful and valued for furniture and utensils.

42. JAPANESE ELM (Nire)
Ulmus davidiana (Ulmaceae)

This deciduous tree is often found in mountainous areas in northern Japan, but is also used in gardens and parks, all over Japan. It grows to 35 meters and has a rounded top. The bark is dark grayish brown with irregular vertical splits. The young twigs are fuzzy. The leaves, 3-12 cm, are oval with a narrowly pointed tip and an asymmetrical base. The leaf edges have double saw-like teeth, and the rough upper surface of the leaf is slightly indented along the veins. The elm blooms in April-May before the leaves appear. The 7-15 flowers grow in a bunch on the previous year's growth. The flowers are both male and female. The flat winged fruits ripen in June. The wood is used for general construction, musical instruments and charcoal.

43. MULBERRY (Kuwa)
Morus bomycis
(Moraceae)

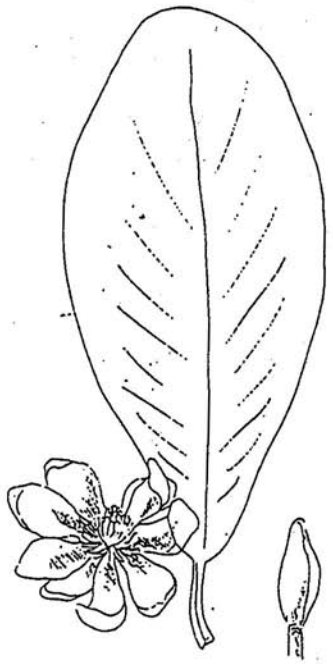
This deciduous tree grows wild to 15 meters throughout most of Japan, with leaves usually heart-shaped or three-lobed. However, it is also seen growing in bush form, with a variety of leaf shapes from one to seven lobes. The tender young leaves are cultivated as food for silkworm larva. The black juicy berries that ripen in July-August are edible, if you can get them before the birds do.

44. PAPER MULBERRY
(Kaji-no-ki)
Morus papyrifera or
Broussonetia papyrifera
(Moraceae)

This tree grows wild in mountainous areas to 12 meters, or is cultivated for its bark which is used for making Japanese 'rice' paper (*washi*). Leaves are thick and egg-shaped, with stems up to 8 cm long. The upper surface of the leaves is rough and the underside fuzzy. Male and female flowers bloom on separate trees in May-June. The berries ripen to a red color and have string-like hairs.

45. BIG LEAVED MAGNOLIA
Japanese Cucumber Tree,
Whiteleaf Japanese Magnolia (Hō-no-ki)
Magnolia obovata
(Magnoliaceae)

A big deciduous tree, this magnolia is found in mountain areas throughout Japan. The big leathery leaves, 20~40 cm, cluster at the end of the branches. They surround the large flower which is creamy white with reddish stamens. The tree blooms in May~June. The bright red seeds are enclosed in a brown cone-like structure. The wood of this tree is a favorite of wood carvers because of its fine even grain and light color.



46. CAMPHOR TREE (Kusu-no-ki)
Cinnamomum camphora
(Lauraceae)

This tall (15 meters) evergreen tree has a spreading crown of dense foliage. The leathery oval leaves, which grow alternately, are pinkish green when they open in spring. The leaves become shiny green in summer. The most characteristic features are the three distinct veins in the leaf and the scent the leaves give when crushed. The wood and fruit of this tree also give off a camphor smell. The wood was once widely used in the manufacture of celluloid, in medicine or as a preventive against insects. The grayish bark is divided into an even pattern of fissures. The shiny black berries smell of camphor and are poisonous.

47. CAMELLIA, (Tsubaki)
Camellia japonica
(Theaceae)

This tree grows wild in the forests and southern mountains where it becomes a straggly tree to 10 meters with smooth gray bark. The evergreen leaves are glossy dark green ovals with finely toothed margins. The single-petaled red flower, with long yellow stamens, blooms in winter. Seeds develop within round woody fruits that split open in three parts. They are rich in oil that is used for hair. The wood is good for carved utensils. Cultivated camellias have been developed into hundreds of varieties with single and double flowers striped and mottled from white to red. The most widely cultivated member of this genus *C. sinensis* is grown for tea.

48. SAZANKA (Sazanka)
Camellia sasanqua
(Theaceae)

This plant is similar to *C. japonica* but has scented flowers which appear in the fall and winter. These flowers are single or double, white, pink or red. The main difference is that the petals of sazanka fall one by one instead of dropping the whole flower head as *C. japonica* does. The young shoots are fuzzy. This plant is often planted to form hedges.

49. SWEET OLIVE (Kinmokusei)
Osmonthus fragrans
(Oleaceae)

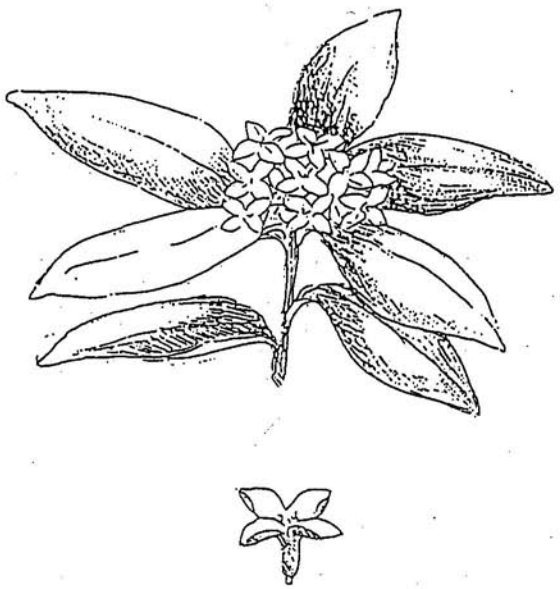
This popular garden shrub with shiny dark evergreen leaves, 6-12 cm, grows to 3-4 meters. The small orange flowers growing in short stalked clusters in the leaf axils give off a pleasant fragrance when they bloom in October. There are yellow and white varieties of this plant. In warmer climates small, dark purple fruits may appear. Most *mokusei* plants are male and grown from cuttings.

50. BIG-LEAVED HYDRANGEA,
Hydrangea (Ajisai)
Hydrrangea macrophylla
(Saxifragaceae)

Hydrangeas, native to Japan, are notable for their large clusters of summer-blooming white, pink or blue flowers. They have pairs of large coarsely toothed leaves and grow 1-2 meters in height. These plants can frequently be seen potted and sold by florists with large flowers on plants less than a foot tall. The big-leaved hydrangeas are unusual in that, except for white varieties, the color of the blossoms is affected by the amount of aluminum in the soil available to the plant, depending on the soil's acidity.

51. KERRIA (Yamabuki)
Kerria japonica
(Rosaceae)

This bushy deciduous shrub with arching green branches grows wild throughout most of Japan. The sharply pointed leaves are coarsely toothed and bright green in the spring. The bright yellow flowers may be five-petaled or be multi-petaled pom-poms. One flower grows per twig coming from last year's growth. This shrub blooms for only a week or so in mid-spring. Kerria can be propagated by layering, that is, rooting branches where they touch the ground. Single flowers produce seeds but the double flowers are sterile.



52. SWEET DAPHNE, Winter Daphne (Jinchō-ge)

Daphne odora
(Thymelaeaceae)

This evergreen shrub, 1.5 meters, is a favorite of gardeners for hedges and border plants. The intensely fragrant flowers in late winter herald the spring. The flowers may be white or pink inside and red or pink outside. Most shrubs are male and do not bear fruit. *Jin-cho-ge* can be grown by cuttings. The leaves are leathery and broadly lance-shaped. They surround the cluster of flowers at the ends of the branches. All parts of the plant are said to be poisonous if eaten.

53. WILD ROSE (No-Ibara)

Rosa multiflora (Rosaceae)

The rose family is represented by 100 genera and over 3,000 species of which cherries and roses are the greatest in number. Known for their beautiful flowers, many are cultivated around the world.

The wild rose grows all over Japan. This thorny shrub grows to about 2 meters. The compound leaves are alternate with 3~4 pairs of serrated egg-shaped leaflets. The upper surface of the leaflet is not glossy and the underside is fuzzy. At the base of each leaf where it joins the twig is a modified leaf called stipule, which has comb-like teeth on its edges. Fragrant white five-petaled flowers bloom in May-June at the end of the twigs. The 6~9 mm round fruit becomes red when ripe. This plant is used for gardening. Cuttings of wild rose are used as a base for grafting hybrid roses. The fruit or 'hips' are used for Chinese medicine.

54. FLOWERING CHERRY, Mountain Cherry (Yama-sakura)

Prunus jamasakura
(Rosaceae)

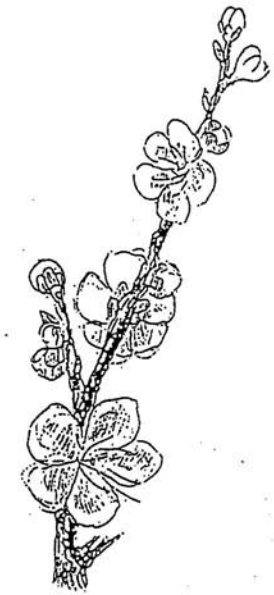
The mountain cherry is the wild cousin of the flowering cherries found in parks and gardens all over Japan. There are several hundred species and varieties of this spreading ornamental tree. Their flowers are the national flower of Japan.

The leaves of this species are, like those of most cherries, oval, 10~12 cm, with narrowly pointed tips and serrated edges. They appear with the flowers in April and are a soft red-brown, later turning green in summer and again red and yellow in autumn. The flowers are white to pale pink with five petals. The cherries are small, dark and mostly seed. The wood of the cherry is very hard and makes long-lasting blocks for wood-block printing. The reddish young bark, with its shiny surface and horizontal splits, is used as a veneer for small articles. The bark on old trees is thick and granulated.

55. FLOWERING PLUM (Ume or Mume)

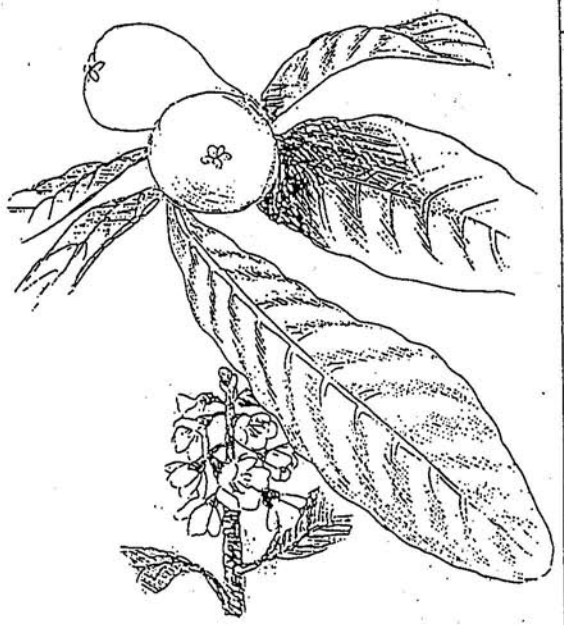
Prunus mume
(Rosaceae)

The type of *ume/mume* grown for flowers today was developed from the wild *mume* having single white or pale pink blossoms that bloom in February to March. The round buds open into clusters of sweet smelling flowers close to the dark brown branches. These days you can see single or double flowers in colors from white to red. Actually what we call a flowering plum is really a variety of apricot. The leaves on this small (6 meters) ornamental tree appear after the flowers have bloomed. The bark is rough and scale-like.



56. PERSIMMON (Kaki)
Diospyros kaki
(Ebenaceae)

This small (4~12 meters) dome-shaped tree is most conspicuous in late autumn when the large, bright orange-colored fruits hang on the bare dark-brown branches. The dark green leaves are elongated oval (15 cm), glossy on the upper side and often downy on the underside. They turn red before falling. Trees bear both male and female flowers which are pollinated by insects. Persimmon wood is gray-brown in color, and exceptionally hard and shock resistant. It is, therefore, chosen for golf club heads, shoe lasts and shuttles for looms.



57. LOQUAT (Biwa)
Eriobotrya japonica
(Rosaceae)

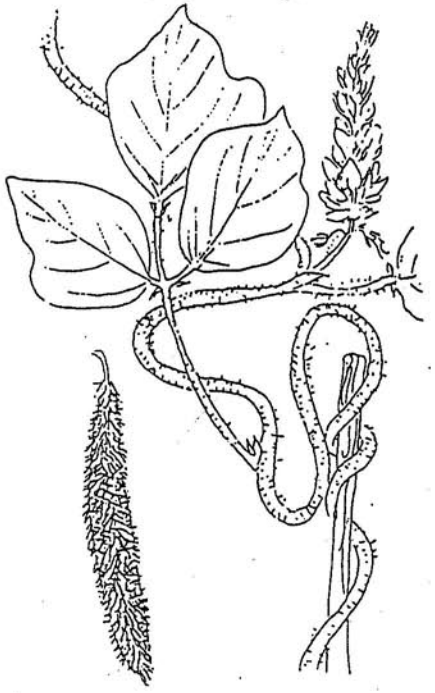
This evergreen with erect spreading branches is native to China and Japan. The long 12~25-cm leaves are light and downy when they first appear, becoming big, leathery and shiny above and brown and fuzzy beneath. The trees flower in autumn and the edible fruits ripen in the spring. The fruits are orange in color, with 1~4 brown seeds at the center. The fruit does not keep well. So, it is usually eaten while fresh or made into jam or alcoholic drinks. This fast-growing tree is frequently used for ornamental purposes.

58. JAPANESE WISTERIA (FuJI)
Wisteria floribunda
(Leguminosae)

This plant climbs through tall trees in woods all over Honshū. The pale green deciduous leaves have 13~19 leaflets arranged in pairs. The pale purple flowers hang down in long bunches and have a pleasant smell. They bloom in May. The vine twines in a clockwise direction. The seeds are contained in long pods, 12~19 cm.

59. MIMOSA, Silk Tree, Persian Acacia, Pink Siris (Nemu-no-ki)
Albizzia julibrissin
(Legminosae)
(Subfamily: Mimosaideae)

This graceful spreading tree gets its Latin name from the Italian naturalist Filippo Albizzi who introduced the plant into cultivation in the mid-18th century. This rapid growing tree may reach 10 meters and have a spread greater than its height. The feather-like leaves are deciduous and bipinnately compound, up to 20 cm long, with up to 40 sickle-shaped leaflets in pairs (see illustration). The leaves grow in an alternate arrangement. The pink flowers, which bloom at the beginning of summer, have tufts of long stamens. The seed is in a long pod, 10~13 cm, that hang from branches even in winter. This tree is a popular ornamental for lawns as the light shade allows grass to grow beneath and it begins to bloom only 2 or 3 years after seeding. The Japanese name, translated to mean *sleepy tree*, comes from the leaves that droop and close at night.



60. KUDZU, Thunberg Kudzu Bean (Kuzu)
Pueraria thunbergiana
(Fabaceae)

This deciduous plant grows wild in sunny locations all over Asia. It has vine-like stalks growing to 10 meters or more. The large compound leaf is made up of 3 leaflets on a long stem. The thick smooth-edged leaflets have a green upper surface with coarse horizontal fuzz. The whitish underside of leaves is covered with dense white fuzz. The leaves are alternate. Kudzu blooms from July to September. The flowers are reddish-purple, fragrant and sweet-pea-like in shape. The 5-~10-cm bean-like fruit is flat and covered with brown fuzz. The trunk-like base of this plant can grow to 12 cm in diameter and the roots over 2 meters deep. The kudzu can be grown by seed or cuttings. This useful plant is used in medicine, as a fibre for hemp-like cloth, animal feed, a source of starch and a ground cover. Because of its vigorous growth and dominating tendency, however, it can be hazardous to other plants in the area.

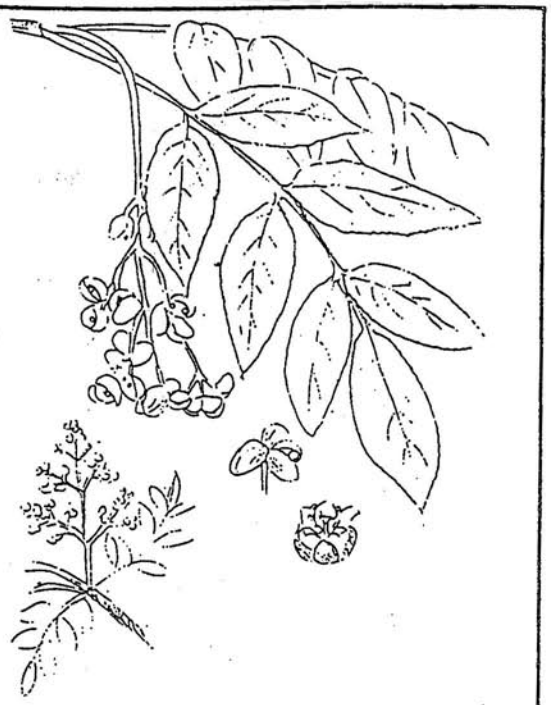
61. OLEANDER (Kyōchikutō)
Nerium oleander
(Apocynaceae)

The oleander is mainly used for ornamental purposes because of its decorative evergreen foliage and beautiful flowers, which bloom from the end of spring to early autumn. The narrow shiny dark green leaves are usually 10~15 cm long. The single or double petaled flowers are most commonly pink or white, but can come in red or yellow. Harmless to the touch, all parts of the oleander are poisonous if eaten. Most varieties grow 2~3 meters tall.

62. NO ENGLISH NAME (Gonzui)
Euscaphis japonica
(Staphyleaceae)

This small (5~6 meters) deciduous tree grows wild in mountainous areas of Japan. The 10-~20-cm pinnately compound leaves have an odd number of narrow egg-shaped leaflets with fine saw-toothed edges. The leaflets are thick and slightly glossy. In May~June cone-shaped buds form at the tips of branches. These develop into many pale yellowish-green flowers. The fruits are half-moon shaped sacks that ripen red. They split open showing 1~3 shiny black seeds. The blackish-green bark is mottled with gray and tan spots, and has irregular vertical slits.

The Japanese name *gonzui* comes from a totally useless fish of the same name, because this tree is also considered useless.

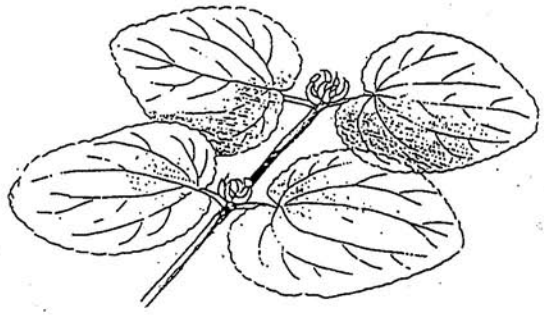


63. HEAVENLY BAMBOO, Nandina (Nanten)
Nandina domestica
(Berberidaceae)

This slow growing shrub topped with graceful 12~18 evergreen fronds grows to 1~2 meters. The delicate compound leaves have narrow leaflets that change from bronze in early spring to deep green in summer and red in autumn. The small white flowers that appear on upright stalks in mid summer ripen to bright red berries in the winter. The aromatic close grained wood is used for quality chopsticks and the plant is used to add color to gardens.

64. AUCUBA, Spotted Laurel (Aoki)
Acuba japonica
(Cornaceae)

This bushy evergreen shrub, 1~3 meters, grows wild in shady mountain areas. The 10~15-cm leaves are leathery and slightly toothed. The flowers are inconspicuous on both male and female plants. The females bear decorative clusters of red berries, which remain through the winter. Variations of this plant are often variegated or mottled.



65. KATSURA TREE (Katsura)
Cercidiphyllum japonica
(Cercidiphyllaceae)

Katsura is the largest deciduous tree native to Japan. This tree, growing to 30 meters, is the only member of its genus.

The oppositely arranged heart-shaped leaves have palmate veins that are very prominent beneath. The leaf has a reddish stem and rounded teeth along the margins. Reddish tinged in spring, the leaves turn green in summer and soft yellow in autumn. Inconspicuous flowers appear before the leaves come out. Male and female flowers are on different trees. Winter buds are paired, oval, and wrapped in two purplish scales. The tree is rather pyramidal in shape with a single or multiple trunk. The young branches are slightly drooping, becoming almost horizontal as they mature. The dark brown bark is furrowed on old trees and shreds along the trunk and main branches. The soft, light weight, fine grained wood is easy to work. It is widely used for building, cabinet making, veneer and implements.

Apendix 1

Index of Descriptions and Illustrations

BIBLIOGRAPHY

Brockman, Frank C. *Trees of North America*. New York: Golden Press, 1968.

Crockett, James U. *Evergreens*. New York: Time-Life Books, 1971.

Crockett, James U. *Flowering Shrubs*. New York: Time-Life Books, 1972.

Crockett, James U. *Trees*. New York: Times-Life Books, 1972.

Downs, Lavinia D., ed. *Nojiri Nature Handbook*. Nagano: Nojiri Lake Association, 1975

Edlin, Herbert L., Nimo, Maurice et al *The Illustrated Encyclopedia of Trees, Timbers and Foests of the World*. United Kingdom: Salamander Books Ltd., 1978.

Edlin, Herbert L. *The Tree Key*. New York: Charles Scribner's Sons, 1978.

Furusato, Kazuo et al, eds. *Illustrated Trees in Color* ("*Genshoku Jumoku Dai-zukan*" in Japanese). Tokyo: Hokuryu-kan, 1985.

Goldstein, Marcello, et al *The Macdonald Guide to Trees*. London: Macdonald & Co. (Publishers) Ltd., 1984.

Hayashi, Yasaka, ed. *Woody Plants of Japan* ("*Nihon no Jumoku*" in Japanese). Tokyo: Yama-Kei Publishers Co., Ltd., 1987.

Hora, Bayard, ed. *The Oxford Encyclopedea of Trees of the World*. Oxford: Oxford University Press, 1980.

Lanzara, Paola, and Pizzetti, Mariella, eds. *Simon & Schuster's Guide to Trees*. New York: Simon & Schuster, 1977.

Petrides, George A. *A Field Guide to Trees and Shrubs, Second Ed.* Boston: Houghton Mifflin Company, 1972.

Yano, Tasuku, and Ishido, Tadashi *Pictorial Reference Book of Woody Plants in Original Colors* ("*Genshoku Jumoku Kensaku Zukan*" in Japanese). Tokyo: Hokuryu-kan, 1964.

BIBLIOGRAPHY

Brockman, Frank C. *Trees of North America.* New York: Golden Press, 1968.

Crockett, James U. *Evergreens.* New York: Time-Life Books, 1971.

Crockett, James U. *Flowering Shrubs.* New York: Time-Life Books, 1972.

Crockett, James U. *Trees.* New York: Times-Life Books, 1972.

Downs, Lavinia D., ed. *Nojiri Nature Handbook.* Nagano: Nojiri Lake Association, 1975

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Goldstein, Marcello, et al *The Macdonald Guide to Trees.* London: Macdonald & Co. (Publishers) Ltd., 1984.

Hayashi, Yasaka, ed. *Woody Plants of Japan* (*"Nihon no Jumoku"* in Japanese). Tokyo: Yama-Kei Publishers Co., Ltd., 1987.

Hora, Bayard, ed. *The Oxford Encyclopedea of Trees of the World.* Oxford: Oxford University Press, 1980.

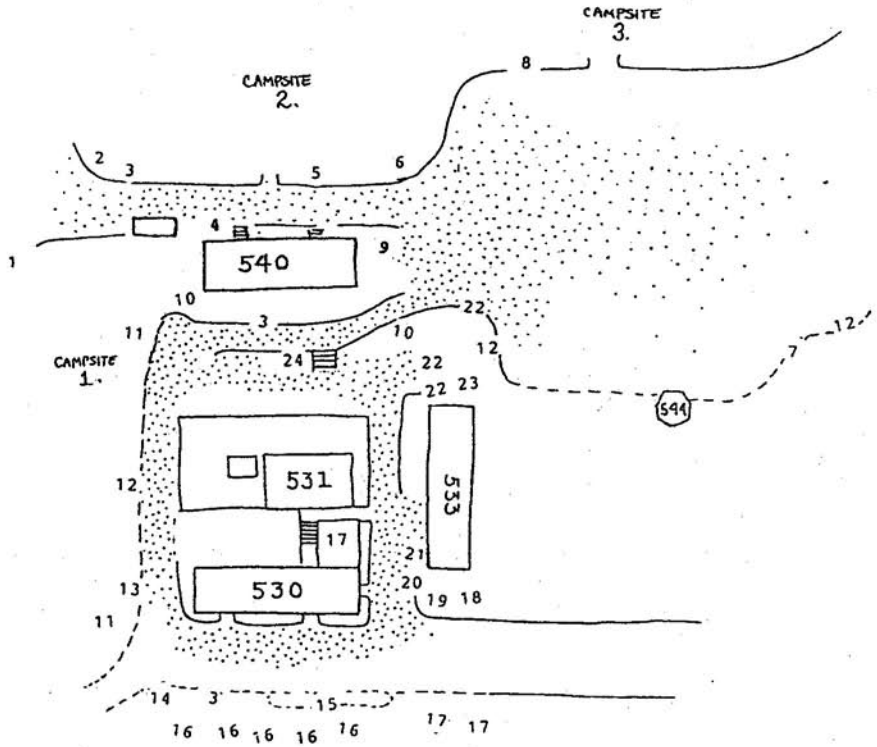
Lanzara, Paola, and Pizzetti, Mariella, eds. *Simon & Schuster's Guide to Trees.* New York: Simon & Schuster, 1977.

Petrides, George A. *A Field Guide to Trees and Shrubs, Second Ed.* Boston: Houghton Mifflin Company, 1972.

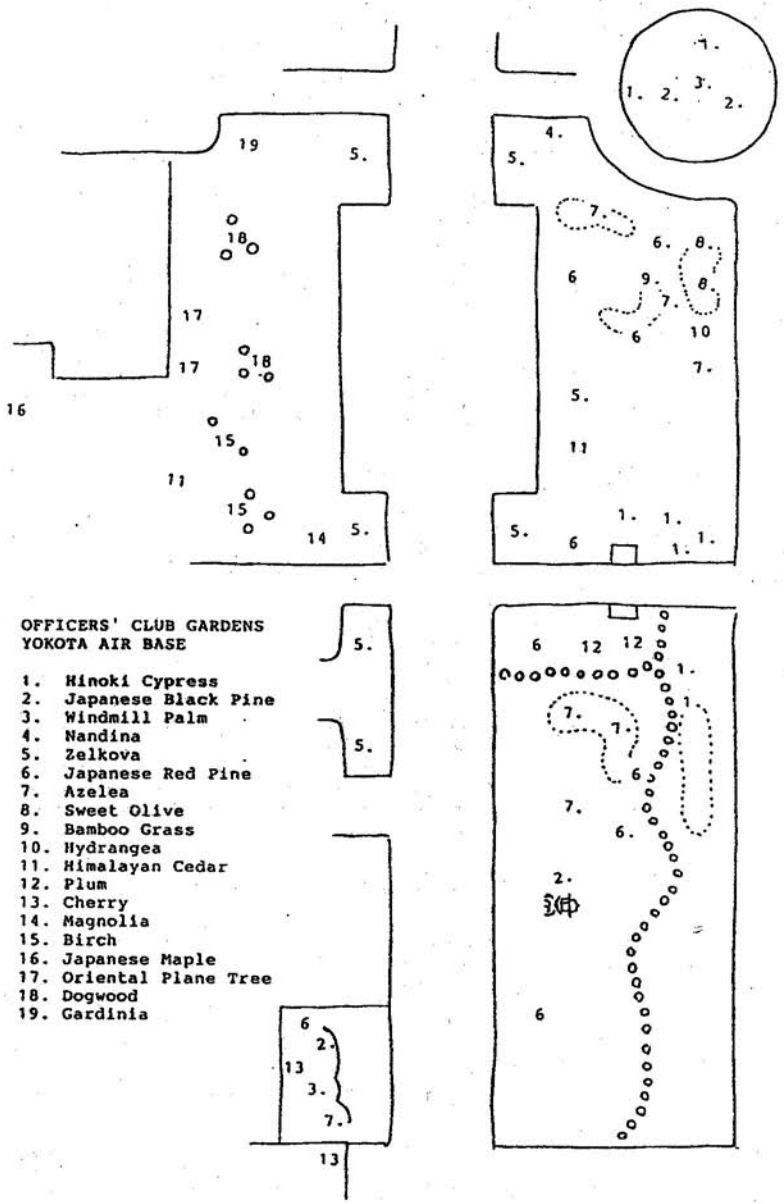
Yano, Tasuku, and Ishido, Tadashi *Pictorial Reference Book of Woody Plants in Original Colors* (*"Genshoku Jumoku Kensaku Zukan"* in Japanese). Tokyo: Hokuryu-kan,1964.

A Guide Map of Trees in Camp Tama Scout Area

1. Big Leaved Magnolia
2. Alder
3. Mulberry
4. Hornbeam
5. Snowbell
6. Paper Mulberry
7. Chestnut Oak
8. Mimosa
9. Evergreen Oak
10. Chestnut
11. Red Pine
12. Konara Oak
13. Wild Rose
14. JapaneseSumac
15. Bamboo
16. Cryptomeria
17. Mountain Cherry
18. Japanese Maple
19. Zelkova
20. Persimmon
21. Azalea
22. Hinoki Cypress
23. JapaneseRedOak
24. Trident Maple



B. Guide Map of Trees in Yokota Air Base Officers' Club Gardens

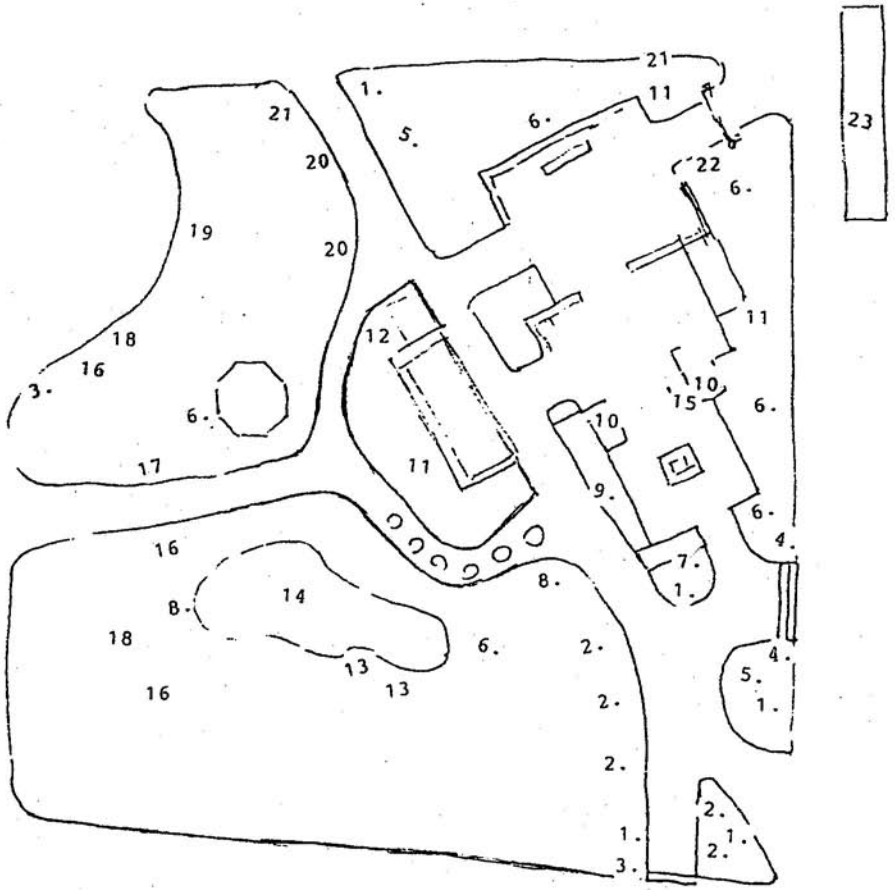


OFFICERS' CLUB GARDENS
YOKOTA AIR BASE

1. Hinoki Cypress
2. Japanese Black Pine
3. Windmill Palm
4. Nandina
5. Zelkova
6. Japanese Red Pine
7. Azelea
8. Sweet Olive
9. Bamboo Grass
10. Hydrangea
11. Himalayan Cedar
12. Plum
13. Cherry
14. Magnolia
15. Birch
16. Japanese Maple
17. Oriental Plane Tree
18. Dogwood
19. Gardinia

C. Guide Map of Trees in American School in Japan Student Court

1. Azalea
2. Ginkgo
3. Mahonia
4. Camellia
5. Sweet Olive
6. Cherry
7. Windmill Palm
8. Maple
9. Hydrangea
10. Dogwood
11. Zelkova
12. Magnolia
13. Plum
14. Black Pine
15. Yew
16. Birch
17. Japanese Hornbeam
18. Konara Oak
19. Cypress
20. Camphor
21. Sazanka
22. Gardenia
23. Bamboo



D. Other Suggested Places for Plant Study in the Tokyo Area

Botanical Gardens of Tokyo University (Koishikawa Botanic Garden): 7-1 Hakusan 3-chome, Bunkyo-ku Tokyo Telephone: (03) 3814-0138

A 10-minute walk from Hakusan Station on the Subway Toei Mita Line or a 15-minute walk from Myogadani Station on the Subway Marunouchi Line, this garden has a large collection of plants labeled with scientific names.

Institute for Natural Study Park, National Science Museum 21-5 Shirogane-dai 5-chome, Minato-ku Tokyo 108 Telephone: (03) 3441-7176

A 10-minute walk from Meguro Station on the JR Yamanote Line, this large natural area has a broad sample of Japanese trees and other plants. All labels are in Japanese only. An English brochure with map is available.

Garden of Tokyo Metropolitan Tei-en Art Museum 21-9 Shirogane-dai 5 chome, Minato-ku Tokyo 108 Telephone: (03) 3443-0202

Adjacent to the Natural Study Park, this garden has many trees and shrubs all labeled with scientific names.

Tokyo Yumenoshima Tropical Botanical Garden 3-2 Yumenoshima, Koto-ku, Tokyo Telephone: (03) 3522-0281/2

A 15-minute walk from Shin-kiba Station on the Subway Yurakucho Line, three large glass domes enclose 15,000 square meters of space for many tropical plants. Labels are in Latin as well as in Japanese.

East Garden of the Imperial Palace 1-1 Marunouchi 1-chome, Chiyoda-ku Tokyo Telephone: (03) 3213-2050

Enter at Hirakawa-mon Gate near Takebashi Station on the Subway Tozai Line or at the Ohte-mon Gate across from the Palace Hotel, a short walk from Otemachi Station of the Subway Chiyoda, Marunouchi, Tozai and Toei Mita Lines. The Ohte-mon Gate is also 7 minutes away from Tokyo Station on the JR Yamanote, Keihin-Tohoku, Chuo, Sobu, Keiyo and other Lines. In this Imperial Garden, which is now open to the public, there is a section exibiting trees from all prefectures in Japan. Those trees are labeled with Latin names as well as in Japanese. The admission is free.

Tokyo Metropolitan Jindai Botanical Park Jindaiji-Motomachi, Chofu City Telephone: (0424) 83-2360

Located at Jindai Shokubutsu Koen-mae Stop on the Odakyu's Mitaka-Chofu Bus Line or Keio's Kichijoji-Chofu or Kichijoji-Tsutsujigaoka Bus Line. An English language map is available with areas identified by number.

Prince Arisugawa Memorial Park

Located near Hiro-o Station on the Subway Hibiya Line, this park has many trees labeled in Japanese. A few have Latin names as well.

Dewey Park, Camp Zama

This park has names in English on some of the trees.

Notes