

A stylized illustration of a pine tree with a thick brown trunk and green needles, standing on a yellow sandy beach. In the background, there is a blue body of water and a range of dark blue mountains under a clear blue sky.

# TREES

*of North America*

by  
Donald Culross Peattie

ALL TREES ILLUSTRATED IN *Color*

# Trees You Want to Know

By

DONALD CULROSS PEATTIE

Illustrations of the eastern trees from the classic  
"Sylva of North America" by Francois Andre Michaux;  
illustrations of western trees by Ethel Bonney Taylor.



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## P R E F A C E

EVERY American wants to have at least a speaking acquaintance with the trees that make up our great national heritage, the unequalled forests of North America. The camper, the trumper, the woodsman, the gardener, the motorist, and the inquisitive school girl and boy, all wish to know the names, the uses, and the ranges of our native trees. There are more than 400 tree species in North America, north of Mexico, and in so small a book it is impossible to include all. Species from every section of the country have been selected so that this little book is as serviceable near San Francisco as near New York, in Alaska as in Georgia, and throughout Canada.

The names of trees are confusing to learn only because lumbermen, farmers, foresters, guides, and botanists all have different names for the same tree. Again, one name, like Bull Pine or Scrub Oak,

may be applied to a dozen kinds of trees, in different regions. It has been thought best in most cases to use only one name, chosen from the least provincial and most literate sources. The Latin names are those now used at the great Arnold Arboretum, except in a few cases that might confuse the beginner.

Measurements and other characterizations of trees in the text apply to mature growths of the season or to trees at the height of their life cycle, not to early spring condition, nor to the appearance of saplings or ancient, decrepit trees. Particularly the shape as described applies to trees growing in the open. Under crowded forest conditions all trees tend to have spindling outlines. At the limits of their ranges many trees become mere shrubs. They develop most luxuriously near their centers of distribution.

## CALIFORNIA NUTMEG

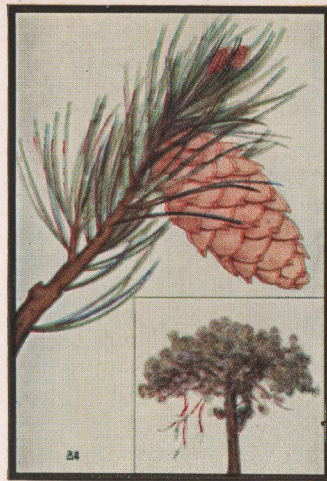
(*Torreya californica*)

SHAPE with a pyramidal head, becoming round topped in age, 15-90 ft. tall. BARK smoothish, thin, dark gray-brown, fissured into narrow ridges. BRANCHES spreading, slightly pendulous. NEEDLES flat, scattered along the twigs, the undersides marked with two whitish lines. FRUIT olive-like or plum-like, green becoming purple-streaked, consisting in a fleshy aril in an open pit of which is buried the nutmeg-like seed. RANGE: n. Coast Ranges and central Sierra Nevada of Calif. Of tree size only near the coast, this curious tree is unlike any other in America except FLORIDA YEW (*Torreya floridana*) a little tree, rare in nw. Fla., with dark purple flesh on the fruit. PACIFIC YEW (*Taxus brevifolia*) has short, slender, yellowish-green needles and a scarlet fleshy coat around the seed. Alaska to Mont., and Sierra Nevada.



California Nutmeg





*Limber Pine*

## LIMBER PINE

(*Pinus flexilis*)

SHAPE broadly round topped; 40-50 ft. tall. TRUNK massive, short. BARK on young growth light gray, on old breaking into scales, furrowed and finally black. BRANCHES whorled and open. NEEDLES in clusters of five, stout, rigid, short, forming clusters at branch ends. CONES 3-4 in. long; scales thick; seeds not winged. RANGE Albt. to w. Tex., mts. of the Gt. Basin and up the e. slopes of the Sierras; rare on the Calif. side. WHITE BARKED PINE (*Pinus albicaulis*) similar, with silvery bark, short needles, small cones, and edible seeds. Goes to the timberline in the Rockies and Pacific Coast Ranges. SILVER PINE (*Pinus monticola*) resembles the next species but has stouter, rigid leaves without white lines. A splendid timber tree reaching 150 ft. Mont. to Ida., s. in the Sierras to Calif.

## WHITE PINE

(*Pinus Strobus*)

SHAPE pagoda-like, up to 250 ft. tall. BARK bluish-black, smooth or in age forming large plates. BRANCHES whorled on young trees, horizontal. NEEDLES clustered in fives, soft, slender, 3-4 in. long, bluish-green with white lines. CONES often curved, 4-6 in. long. RANGE: Newf. to Gt. Lakes region and Minn., s. from the Virginias on the mts. to Ga. The wood is light, soft, even-grained and beautiful, used for interior finishing. "Soft Pine" has played a great role in our history. In the days of wooden battleships it made the tallest masts. Appreciated by the first colonists, it was wildly exploited in the last century. Railroads were bent to great stands of it, wooden cities and mushroom fortunes arose from its exploitation and great fleets were built to export it. Now desolate stump lands tell the decline of an empire.



*White Pine*





*Sugar Pine*

## SUGAR PINE

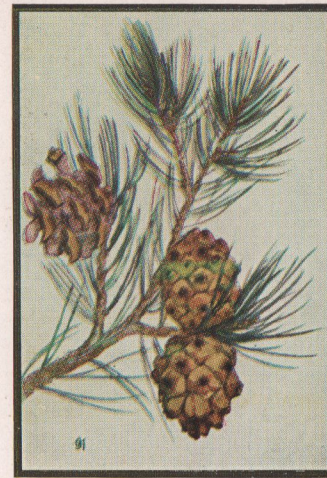
(*Pinus Lambertiana*)

SHAPE with a broad, flat topped crown. TRUNK up to 220 ft. tall, massive, usually clothed with branches to the ground. BARK smooth, dark gray on young branches, thick and scaly on old trunks, the plates purplish brown to cinnamon. BRANCHES in remote regular whorls, the upper in age very elongated, bending under the weight of many big cones. NEEDLES 5 in a cluster, stout, rigid, 3-4 in. long, dark green. CONES very large, 12-18 in. long. RANGE: mts. of extreme s. Ore. along Coast Ranges and Sierra Nevada of Calif. This wood is like that of White Pine, easily worked, pale, lustrous, handsome, similarly employed. Tallest and mightiest of all pines in the world, it is famous for its stateliness. A sugary matter exudes from cuts in this tree, but it may only be safely eaten in small quantities.

## PIÑON PINE

(*Pinus edulis*)

SHAPE bushy finally broad topped, 10-40 ft. tall. TRUNK slim, straggling. BARK irregularly ridged, becoming covered by light ruddy scales. BRANCHES horizontal, crooked. NEEDLES in clusters of 2 (rarely 3) stout, rigid,  $\frac{3}{4}$ -1½ in. long. CONES only  $\frac{1}{2}$ -¾ in. long, with thick scale-ends, yellowish-green, lustrous. RANGE: Foothills of the Rockies from Colo. to w. Tex. and through interior desert states to Mex. The sweet edible seeds are an article of commerce in Mexico and the West. A precious fuel in the desert states, wood of this scrubby tree gives off a fragrant smoke that is characteristic of the southwestern towns and Indian villages. ONE NEEDLE PINE (*Pinus monophylla*). Needles solitary, blue-green. Cone brown. A little tree, Calif. to Ariz. and Colo. NUT PINE (*Pinus Parryana*) Needles 4 in a cluster, blue-green, incurved, 1½-2 in. long. Cone brown. Seeds edible. Centr. and s. Calif.



*Piñon Pine*





Red Pine

## RED PINE

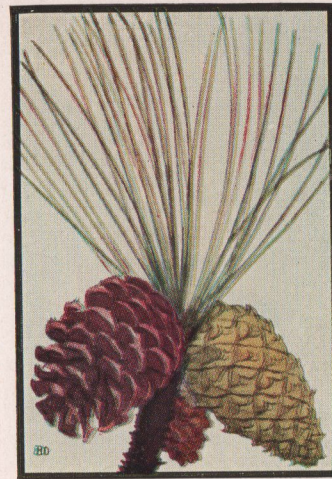
(*Pinus resinosa*)

SHAPE broadly pyramidal in youth, broad topped in age; up to 150 ft. tall. TRUNK 2-5 ft. thick. BARK gray, shallowly fissured into broad flat ridges, loosely scaly. BRANCHES stout, spreading, often drooping, but twigs generally ascending. NEEDLES in clusters of 2, rigid, stout, triangular, dark, glossy, 5-6 in. long. CONES thin scaled, 2-6 in. long. RANGE: e. Can. N.E., N.Y., n. Gt. Lakes region, w. Pa. The strong, ruddy wood is greatly in demand for bridges and buildings. Masts and spars made from it went round the world in the old clipper ships. Often erroneously called "Norway Pine" (a name also given to a European spruce) this is what the old lumberjacks of the North Woods meant by "Hard Pine." This stately, colorful pine is one of the most picturesque of our trees.

## WESTERN YELLOW PINE

(*Pinus ponderosa*)

SHAPE spire-like, round topped, up to 200 ft. tall. TRUNK massive. BARK ruddy, round ridged, scaly in age, with huge plates. BRANCHES short, thick, forked, often drooping. NEEDLES in clusters of 3, densely crowded at branch tips, dark yellow-green. CONES densely clustered, oval-oblong, lustrous, ruddy, sometimes hook-scaled. RANGE B.C. to Ore. and s. in the Sierra Nevada to Calif. ROCKY MT. YELLOW PINE (*Pinus scopulorum*) differs in little except its shorter stature (not over 75 ft.), shorter needles, often in clusters of 2, blackish bark, and smaller, stouter cones. Black Hills and Big Horn Mts., high lands of w. Neb., and Rockies from Wyo. to N. Mex. Both are among the most important timber trees of the West. Lumbermen recognize many varieties of their woods. JEFFREY'S PINE (*Pinus Jeffreyi*) is similar, symmetrical, with long bluish green needles; twigs bloomy. Ore. to s. Calif.



Western Yellow Pine





*Southern Yellow Pine*

## SOUTHERN YELLOW PINE

(*Pinus echinata*)

SHAPE oblong, 50-100 ft. tall. TRUNK ponderous, often clean and branchless high up. BARK deep ruddy brown, broken in age into broad armor-like plates built up of flaky scales. NEEDLES 3-6 in. long in clusters of 2, deep olive green, slender. CONES very small. RANGE: Staten Island to s. Ga., and centr. Miss., not on the s. coast plain or in high Appalachians or bottom lands of Mississippi valley. Again in Ark., sw. Mo., ne. Tex., sw. Ill., Ky. and Tenn. Lumbermen recognize two varieties of this important tree, the upland wood which is hard and heavy, much valued for interior finish, and a weak, fast-growing type from lowlands. BLACK PINE (*Pinus rigida*) has dark needles in threes, 3-4½ in. long, and cones 2-2½ in. long, ranging from Me. to n. Ga. and w. Tenn; this is a picturesque, short, dark, contorted tree without much timber value.

## LOBLOLLY PINE

(*Pinus Taeda*)

SHAPE high branched, broad crowned; up to 150 ft. tall. BARK rough, gray-brown, or ruddy, separating in big, long scales. BRANCHES wide spreading, at maturity confined to top of stem. NEEDLES slender, rigid, lustrous light green, 3 or 4 in a cluster, 6 in. long. CONES large with thick bristly scales. RANGE: Del. to n. Fla., rarely reaching the Appalachians except in the Virginias; along the Gulf to e. Tex., n. in Mississippi Basin to Tenn. The wood is soft, coarse grained and brittle in the case of second-growth trees. Formerly virgin Loblolly timber (now rare) was among the strongest and most durable of American pine woods. The man-of-war "Roanoke" carried an immense mast cut from N. C. Loblolly that had 302 annual rings; this tree regularly furnished the best naval construction material.



*Loblolly Pine*





*Long Leaf Pine*

## LONG LEAF PINE

(*Pinus palustris*)

SHAPE spindling, a little broader at the crown, 50-100 ft. tall. BARK smooth, thin, with red-brown plates. BRANCHES short, horizontal, scaly. NEEDLES in threes, 10-15 in. long, gleaming and beautiful. CONES 6-10 in. long. RANGE: Norfolk Va. along the coast to centr. Fla; far inland in the Gulf States, up to e. Tenn. The wood, strong and durable when not tapped for turpentine, is used for interior finish, bridges, trestles, masts, spars and especially for railway carriages. This valuable tree, with the longest needles and largest cones in the eastern states, is the great tar, pitch, and turpentine tree that has supplied the world with most of its naval stores. With the vanishing of virgin timber, the flow of turpentine has become greatly diminished. SLASH PINE (*Pinus caribaea*) is a similar, very slender spindly tree with small high crown, which forms monotonous open grooves from S. C. to Fla. and Cuba.

## JACK PINE

(*Pinus Banksiana*)

SHAPE if well developed broad topped, but usually stunted and scraggling; 15-100 ft. tall. TRUNK slim, often contorted. BARK ruddy brown, gray and shaggy with age, forming irregular ridges. BRANCHES wide spreading, their twigs often drooping and ruddy. NEEDLES scrubby, rigid, twisted. CONES 1-2 in. long, remaining closed and grayish for years, finally brown, 1-2 in. long. RANGE: N.S. to L. Mistassinie and the Mackenzie R., skirting well south of James' Bay; Gt. Lakes region to centr. Minn. Though of little value save for fuel, this tree grows in acid, rocky country where no other tree would. Everywhere associated with poor soil, poverty, and bleak conditions, it is called "Unlucky Tree" and superstitiously feared by French Canadians. The old lumberjacks of the North Woods designated this contemptuously as "scrub pine."



*Jack Pine*





*Big Cone Pine*

## BIG CONE PINE

(*Pinus Coulteri*)

SHAPE broad spreading at the top; 40-90 ft. tall. BARK dark, with braided fissures. BRANCHES clothing stem near to base, lower extended. NEEDLES pale, 3 in a cluster, 5-14 in. long, very scant. CONES 10-13 in. long, 5-7½ in. thick. RANGE: Coast Ranges of centr. and s. Calif. Scarcely prepossessing in stature or foliage, this tree has the largest cones among all pines. DIGGER PINE (*Pinus Sabiniana*) is similar, ranging in a circle of the lower mts. surrounding the interior valleys of Calif. Shape an open, broom-like crown, trunks usually leaning and soon forking umbrella-wise. Needles grayish, scanty, clustered at twig ends, 7-13½ in. long. Cones 6-10 in. long, 5-7 in. thick; scales with big down-bent hook prickles. Seeds large, black-coated, sweet. eaten by the Indians "(Diggers)" of Calif.

## LODGEPOLE PINE

(*Pinus Murrayana*)

SHAPE narrowly pyramidal, 70-80 ft. tall. BARK close, firm, light orange-brown. BRANCHES ascending near the top, the lower down sweeping. NEEDLES stout, 2-3 in. long. CONES clustered, ¾-2 in. long. Also called Tamarack Pine, this lofty slender tree makes dense monotonous forests from the Yukon along the Rockies to s. Colo. and Utah, and along the Sierras to s. Calif. It is used for mine timbers, railway ties, and its very tall, slender, straight stems furnished the western Indians with tepee poles. BEACH PINE (*Pinus contorta*) differs in being a stunted tree of bogs, shores, and wind-swept dunes from Alaska to Calif; stems twisted; bark thick and dark; head broad and picturesque; needles darker green, 1-1½ in. long. The two species intergrade, but the second, in contrast, is quite useless.



*Lodgepole Pine*





*Eastern Larch. Tamarack*

## EASTERN LARCH. TAMARACK

(*Larix laricina*)

SHAPE narrow or in old trees broadly pyramidal; 30-90 ft. tall. TRUNK slender. BARK smooth, ruddy brown, or on old trees rough with rounded scales. BRANCHES, horizontal or sweeping down, with young ones, borne in thick clusters at the tip of the knob-like projections from the twigs, falling in winter, renewed each spring, soft,  $\frac{3}{4}$ -1 in. long. CONES remaining on the tree all winter, brown turning black. RANGE: Bogs throughout the Can. forest belt to the arctic tree line; not on the Rockies; s. to Gt. Lakes basin, n. Mississippi basin, N.E., N.Y., n. Pa. The wood, heavy, strong, rather coarse, is durable in contact with the soil. It is employed for ship timbers, ties, and fence posts. The gum was used as a wound balm by the Pilgrims. When leafing out in spring the Larch is very lovely.

## WEST. LARCH. TAMARACK

(*Larix occidentalis*)

SHAPE narrowly pyramidal; 80-200 ft. tall. BARK very dark, on old trunks becoming bright crimson and divided into huge plates. BRANCHES short, horizontal. NEEDLES in clusters, except on the young growth, from woody knobs, rigid, short, pointed, pale, renewed each spring, falling in winter. CONES many scaled, 1-1½ in. long, with long slender bracts protruding from between the scales. RANGE: Mts. of B.C. to w. Mont., and s. to the Blue Mts. of Ore. No other American conifer produces such hard, heavy wood; this is terra cotta in hue, valued for house construction and furniture. Aided by the thickness of its bark this tree withstands forest fires better than any other in the West and remains the king of all larches in height and value. The sweet sap, issuing from the tree, is eaten by Indians.



*Western Larch. Tamarack*





Red Spruce

## RED SPRUCE

(*Picea rubra*)

SHAPE loosely pyramidal; 40-75 ft. tall. TRUNK slender. BARK reddish brown, flaky with thin scales. BRANCHES ascending near the top of the tree, the lower down sweeping. NEEDLES fragrant, 4-angled, scarcely more than  $\frac{1}{2}$  in. long. CONES  $1\frac{1}{2}$ -2 in. long, clustered near the summit. RANGE: Marit. Provs. of Can., N.E., N.Y., s. on the mts. to Pa., and highest peaks of Va. and N. C. Employed for construction, pulp, and flooring, this is also considered the best American wood for resounding boards of musical instruments. WHITE SPRUCE (*Picea canadensis*) ranges from Labr. to Alaska, s. to N.E., centr. parts of Mich. and Wis., the Black Hills, w. slopes of the Rockies in Can. and Mont. Not a large or valuable tree except for paper pulp, it is the most ornamental eastern spruce. It differs in its smooth twigs and longer cones; the needles are unpleasantly scented.

## BLACK SPRUCE

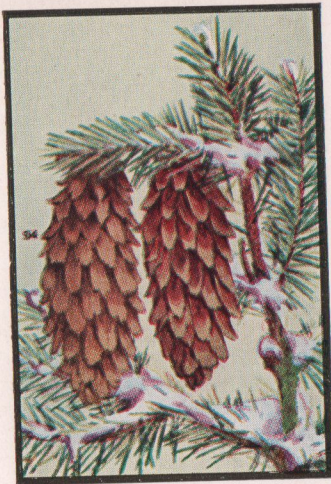
(*Picea mariana*)

SHAPE very narrow, spire-like; 20-90 ft. tall or sometimes a knee-high dwarf even when very old, on the muskeags of the Northwest. BARK grayish brown, flaky, thin-scaly. BRANCHES very short, horizontal or a little down sweeping, lightly up curving at the tips. NEEDLES bluish green with a whitish bloom,  $\frac{1}{2}$ - $\frac{3}{4}$  in. long, 4-angled. CONES  $\frac{1}{2}$ - $1\frac{1}{2}$  in. long; scales stiff and thin. RANGE: Throughout the forest belt of Can., except the Rockies, s. to Pa. and thence on the high mts. to N.C., centr. parts of Mich., Wis., Minn. Individually beautiful, this becomes a monotonous and somber tree through the northern interior of the continent. The wood is not useful except for paper pulp, but in that form it is employed by almost every newspaper in the eastern states. Formerly its sap was the basis of chewing gum, before chicle was employed.



Black Spruce





*Sitka Spruce*

## SITKA SPRUCE

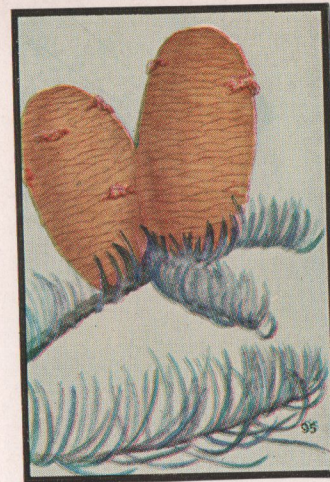
(*Picea sitchensis*)

SHAPE a loose open pyramid, spire-like at the summit; up to 200 ft. tall. TRUNK massive, often buttressed at the base. BARK broken into large, thin, loose, reddish scales. BRANCHES close, slender, horizontal with rigid leading shoots. NEEDLES flat,  $\frac{1}{2}$ -1 in. long, silvery white above, often twisted. CONES  $2\frac{1}{2}$ -4 in. long with stiff scales. RANGE: Alaska to Mendocino Co. Calif., always near the coast. This, the most important lumber tree of Alaska, is used for interior finish, boat-building, barrels, and packing cases. With its silvery foliage and spire-like growth, it is unsurpassed in beauty by any evergreen. WEEPING SPRUCE (*Picea Breweriana*) is similar, the needles also flat but not silvery, and the branchlets sharply bent down from the trunk, the lower sweeping to the ground. Mts. of sw. Ore. and adj. Calif.

## WHITE FIR

(*Abies concolor*)

SHAPE a symmetrical pagoda-like tapering cone, up to 220 ft. tall. TRUNK massive. BARK thin, smooth, whitish-gray, in age deeply furrowed; ridges rounded, with ashy scales. BRANCHES widely spaced, whorled, on old trees the lower sweeping to the ground. NEEDLES flat, pale blue with a bloom. CONES 3-6 in. long, their thin scales overlapping, deciduous. RANGE: On the Sierra Nevada of Calif. and s. Ore. Also mts. of w. Colo., Utah, Ariz. and N. Mex. ALPINE FIR (*Abies lasiocarpa*) is almost identical, but the leaves green. Albt. to N. Mex. and Ore. RED FIR (*Abies magnifica*) reaches 200 ft. height, with majestic lower branches and cones 5-8 in. long. Needles bluish, quadrangular. Cascades of Ore. to Mt. Shasta, and w. slope of the Sierra Nevada, where it forms vast, splendid forests. The wood is moderately valuable for light construction.



*White Fir*





Canada Balsam

## CANADA BALSAM

(*Abies balsamea*)

SHAPE pyramidal, up to 70 ft. tall. TRUNK slender. BARK grayish brown becoming scaly, with raised blisters containing resin. BRANCHES in whorls, horizontal. NEEDLES appearing all in 1 plane on young or sterile twigs, bristling all around the twig on old and cone-bearing branches, pale below with grayish lines. CONES with sticky, shedding scales. RANGE: Labr. to James' Bay and nw. to Mackenzie R., N.E. N.Y. and s. on the mts. to Va. This beautiful, fragrant tree, the finest eastern Christmas tree, is chiefly valuable for its resin and Canada Balsam which is gathered from the stem blisters in summer and used in painting and scientific laboratories. The fragrant needles are put into pillows. On the mts. of N.C. and Tenn. its place is taken by HE BALSAM (*Abies Fraseri*) which is similar, but with cones only 1-2 in. long, the fringed bracts showing between the scales.

## CANADIAN HEMLOCK

(*Tsuga canadensis*)

SHAPE a broad-based pyramid, the tip feathery; 50-80 ft. tall. TRUNK often fluted. BARK reddish to gray brown, with shallow, broad, connecting ridges, somewhat scaly. BRANCHES long, slender, horizontal or drooping at base, ascending near top. NEEDLES all in 1 plane, shining, paler below, flattened,  $\frac{1}{2}$  in. long, short-stalked. CONES small, short-stalked, hanging, few-scaled, 3-4 in. long. RANGE: N.S. to Wis., and Minn., s. to Del. and along the mts. to Ga. The value of this tree lies chiefly in its bark, rich in tannin, though the frail wood is sometimes used in exterior finishing. A lovely ornamental but not so much so as the CAROLINA HEMLOCK (*Tsuga caroliniana*) in the Blue Ridge from Va. to Ga., which has needles bristling all around the twigs, like a fir, and a very compact, pyramidal, elegant small stature.



Canadian Hemlock





Western Hemlock

## WESTERN HEMLOCK

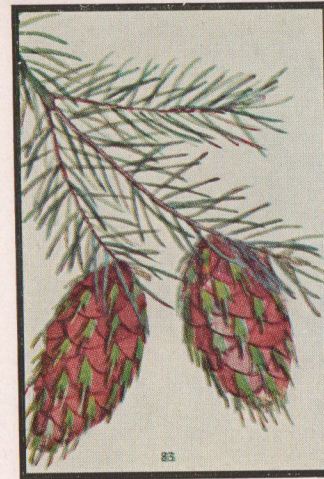
(*Tsuga heterophylla*)

SHAPE broadly pyramidal, becoming narrow in age; up to 200 ft. tall. BARK ridged and ruddy. BRANCHES slender and pendulous, the twigs bright red, upright. NEEDLES spirally arranged around the twigs, curved, acute, round or keeled, slender, light bluish green with whitish lines on both sides,  $\frac{1}{2}$ -1 in. long. CONES 2-3 in. long. RANGE: se. Alaska to Marin Co. Calif., s. in the Rockies to Ida. and Mont. The wood is strong, easily worked. The bark is rich in tannin and the inner bark is eaten by Indians. This magnificent tree is the king of hemlocks. MOUNTAIN HEMLOCK (*Tsuga Mertensiana*) has much the same range and also extends along the w. slopes of the Sierra Nevada. It has cones up to 3 in. long, bright purplish or reddish, and beautiful drooping branches and long thick needles.

## DOUGLAS FIR

(*Pseudotsuga taxifolia*)

SHAPE with a broad or narrow pyramidal crown; up to 200 ft. tall. BARK smooth, shiny, dark gray-brown; in age deeply fissured, forming broad ridges. BRANCHES; lower drooping, middle and upper ascending. NEEDLES  $\frac{3}{4}$ -1 $\frac{1}{4}$  in. long. CONES 2-4 in. long with thin scales from which finally protrude the 3-forked bracts. RANGE: B. C. to centr. Calif. and n. Mex., along the Rockies from Mont. to w. Tex. and N. Mex. This is an important timber tree, especially in Oregon; it is used for all kinds of construction and for ties. For wharf piles it is preferred in all the Pacific ports; it makes spars and masts of unequalled strength. BIG CONE DOUGLAS FIR (*Pseudotsuga macrocarpa*) has much larger cones with scales projecting at right angles from the axis. Mts. of s. Calif.



Douglas Fir





*Bald Cypress*

## BALD CYPRESS

(*Taxodium distichum*)

SHAPE broadly or narrowly pyramidal, to 150 ft. tall. TRUNK massive, buttressed and fluted, becoming hollow with age, and accompanied by outlying "knees" or spongy breathing knobs sometimes 10 ft. tall, and long horizontal surface roots. BARK light cinnamon brown, flaky. BRANCHES erect or spreading, the much forked twigs drooping. NEEDLES falling in autumn. CONES 1 in. long, with thickened woody scales. RANGE: Swamps near the coast, Gulf States n. to Del., and up the Mississippi to s. Ind. The wood, light brown to very dark, is very durable. This mysterious, very slow growing, very long lived tree is one of the most valuable of American lumber trees. Often gloomy and even unsightly where it forms dense swamps, it can be very lovely when its needles bud out in spring and its lofty feathery summits are seen waving across the everglades and savannahs.

## CALIFORNIA BIG TREE

(*Sequoia gigantea*)

SHAPE at first broadly spindle, finally clean trunked, ending in a broad, pointed crown. Trunk buttressed, 250-300 ft. tall, greatly swollen at base; above this point 17-34 ft. thick BARK thick, fibrous, deeply grooved, dark cinnamon-brown, the outer plates dull lavender-gray. BRANCHES short, slender, curving forward and upward on young trees and clothing stem to base; on old trees lofty, large, crooked, drooping at tip. LEAVES blue-green, scale-like and overlapping, or, on young or fertile shoots, shorter, bristling. CONES 1-3 in. long, resembling a little pineapple until the scales ultimately spread open. RANGE: at 5000-8000 ft., w. slopes of the Sierra Nevada in Calif. The wood is very durable and valuable, a dull red brown. This is the noblest, rarest, and most impressive of all timber trees. The maximum number of annual rings counted by reliable observers is about 2,300.



*California Big Tree*





*Redwood*

## REDWOOD

(*Sequoia sempervirens*)

Similar to the preceding but even taller (100-350 ft. or perhaps 400 ft.). Differing also in the trunk which is ultimately clean of branches for 100 ft., and the scale-like or needle-like leaves on the main branches which do not overlap but are irregularly scattered. Cones smaller ( $\frac{3}{4}$ -1 in. long). RANGE: N. and centr. Coast Ranges of Calif. Though less restricted in range than the Big Trees, Redwoods do not go far from the influence of the sea fogs along the Pacific coast. The wood is crimson brown, soft, but very durable. This, the tallest tree in the world (some even surpassing the Big Tree in height but not in girth) yields more board feet of timber per individual than any other tree. Though less impressive than the Big Trees, and less long lived (maximum about 1,400 years) Redwoods are far more valuable and of majestic beauty.

## INCENSE CEDAR

(*Libocedrus decurrens*)

SHAPE narrowly pyramidal, up to 150 ft. tall. TRUNK massive, irregularly lobed or fluted. BARK bright cinnamon red broken into irregular ridges covered with scales. BRANCHES erect above, the lower sweeping down in bold curves. SCALES light green, long and narrow, often keeled, in opposite pairs, overlapping around the erect twigs (except at their tips) and giving them a square look, becoming woody before falling. CONES made up of 6 scales, the lowest pair bent back, the uppermost united. RANGE: Cascade Mts. of Ore., inner Coast Ranges and Sierra Nevada of Calif. This is a magnificent, aromatic tree, unique in North America, with valuable wood, durable in contact with the soil, and used for fencing, laths, shingles, interior finish, furniture and water flumes.



*Incense Cedar*





*Alaska Cypress*

## ALASKA CYPRESS

(*Chamaecyparis nootkatensis*)

SHAPE elongated-pyramidal, up to 120 ft. tall. BARK ashen brown with diagonal ridges. BRANCHES horizontal, repeatedly forking to form flat sprays. SCALES closely overlapping the twigs, fragrant, minute, or on leading branches larger and spreading, becoming brown and woody in age. CONES resinous, dryly fleshy. RANGE: s. Alaska to the Cascade mts. of Ore. The wood, very durable, aromatic, close-grained, clear yellow, is used for shipbuilding. One of the finest timber trees in the world, it has been exported in great quantity especially to China. PORT OXFORD CEDAR (*Chamaecyparis Lawsoniana*) s. Ore. to Humboldt Co., Calif. has distinctly flattened twigs, conspicuous glands on the leaves and deeply furrowed ruddy bark. This mighty tree is sometimes twelve feet thick. The wood is used for flooring, interior finish and shipbuilding.

## WHITE CEDAR

(*Chamaecyparis thyoides*)

SHAPE slenderly conical, 20-90 ft. tall. BARK grayish brown, separating off in shreddy strips, somewhat spirally twisted. BRANCHES short, sparse, slender, horizontal, forking into feathery branchlets. SCALES minute, pressed closely to the stem and overlapping, keeled on the back and glandular, spicy-aromatic. CONES gummy, very small, finally opening toward the center into a few thick scales. RANGE: Swamps from se. Me. to Fla. (but not on the peninsula) and around the coast to Miss. The light ruddy brown, fragrant wood is not strong, but endures moisture eternally; it is used for fence-posts, ties, and shingles. Stumps that have been under water for centuries show no signs of rot. This sad-looking tree forms monotonous low forests in the swamps that would otherwise be useless.



*White Cedar*





*Eastern Arbor Vitae*

## EASTERN ARBOR VITAE

(*Thuja occidentalis*)

SHAPE a very compact symmetrical pyramid, up to 70 ft. tall. TRUNK often forked and lobed, or buttressed, clothed to the base by the branches. BARK ash gray to light brown, separating into flat shreddy strips, spirally twisted. BRANCHES short, horizontal, or the lowest down sweeping. SCALES gray green, closely overlapping and thickly investing every twig to form a beautiful flat forked spray of foliage; each scale with a raised glandular spot which gives off a sweet, camphor-like fragrance. CONES small, about  $\frac{1}{2}$  in. long. RANGES swamps from s. Lab. to Man. and Minn., and from Pa. s. on the Appalachians, where very rare. The wood, fragrant, soft and brittle but very durable, is used for fence posts, rails, ties, spools and shingles. This is a superb tree, giving to the bogs of the eastern states much of their charm.

## WESTERN ARBOR VITAE

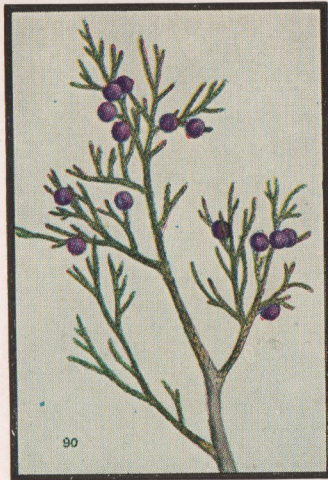
(*Thuja plicata*)

SHAPE narrowly pyramidal, up to 200 ft. tall. TRUNK much buttressed. BARK cinnamon red. BRANCHES clothing the stem to the base, short, horizontal, pendulous at tip. LEAVES bright and glossy, in the form of long scales closely investing the twigs, each scale marked by a whitish triangular spot, the needles on vigorous leading shoots often not overlapping but remote, bristling, sharp. CONES little over  $\frac{1}{2}$  in. long, elliptic-oblong. RANGE: Alaska to n. Calif. and Mont. The wood differs from the eastern species in being dull red brown, instead of pale yellow. This is a precious timber tree of the Pacific Northwest. The wood is used for interior finish, fences, shingles. Logs last forever and from them Indians made their village totem poles, their plank lodges and dug-out canoes.



*Western Arbor Vitae*





*Western Juniper*

## WESTERN JUNIPER

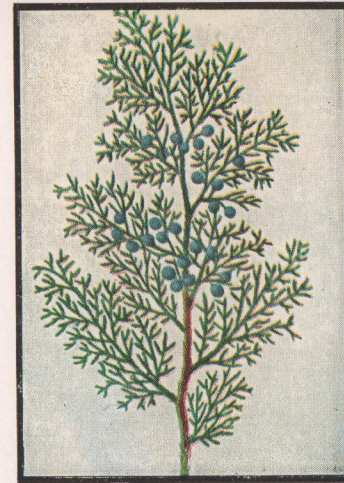
(*Juniperus occidentalis*)

SHAPE round headed, 20-60 ft. tall. TRUNK often forked half way up. BARK cinnamon, fissured and shreddy, with glossy scales. BRANCHES beginning low on the trunk, very large, horizontal. SCALES short, overlapping all around the twig, grayish, glandular. BERRY resinous, large. RANGE: Mt. slopes and high prairies from e. Wash. and w. Ida. to San Bernadino Mts. of s. Calif. The wood of this picturesque tree is red, soft, light, durable, used for fences and fuel. Fond of wind-swept crags, "it dies standing and wastes insensibly out of existence like granite, the wind exerting as little control over it alive or dead as it does over a glacial boulder." (John Muir.) CALIFORNIA JUNIPER (*Juniperus californica*) is closely similar, but has gray bark, bushy stem, paler needles and a red brown berry with sweet pulp. Centr. and s. Calif.

## RED OR VIRGINIA CEDAR

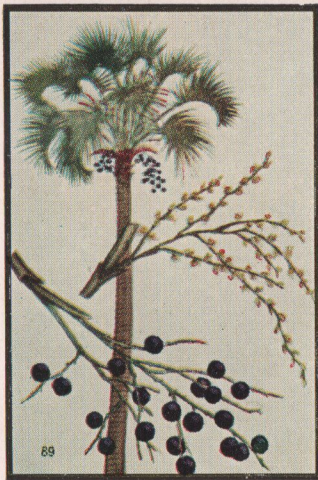
(*Juniperus virginiana*)

SHAPE cypress-like, narrowly pyramidal, 40-100 ft. tall. TRUNK becoming 3-4 ft. thick, buttressed at base. BARK ruddy, shredding in long ribbon-like strips. BRANCHES at maturity sharply erect, spreading in youth and age. SCALES very short, turning russet in winter in the North, closely overlapping except on vigorous young shoots, when they are erect and needle-like and paler. BERRY resinous, sweet. RANGE: N. S. to Fla., Tex., and Minn. The soft, aromatic, red and yellow wood is used for lead pencils, moth-proof chests and closets, ties, posts, interior finish, and yields cedar oil. ROCKY MT. CEDAR (*Juniperus scopulorum*) is distinguished by stouter, often drooping, branches and darker wood. Rockies from Albt. to w. Tex., Olympic mts. of Wash., e. Ore. through Nev. to n. Ariz. Monotonously this conical little tree dots the dome-like hills of the desert states.



*Red Cedar*





*Palmetto*

## PALMETTO

(*Sabal Palmetto*)

TRUNK at base knob-like, rooty; 30-40 ft. tall, 2 ft. thick, hollow, with a light ruddy rind. LEAVES shining, 5-6 ft. long 7-8 ft. broad, on stalks 6-7 ft. long. FLOWERS small, greenish white, in very long, branched clusters from upper leaf axils. RANGE: along coast from Wilmington, N. C. to the Appalachicola R., Fla. Especially abundant on the Fla. w. coast, this tree finds use as a food, the cabbage-like terminal bud being eaten as "hearts of palm." The bristles on the sheaths of young leaves are made into scrubbing brushes and the trunks are employed as wharf piles. On June 28, 1776, Charleston patriots under Moultrie made a fort of palmetto trunks and from it repulsed the British fleet. DESERT PALM (*Washingtonia filamentosa*) is a very lofty fan-leaved palm of the deserts of southwestern Calif. Often cultivated.

## BLACK WILLOW

(*Salix nigra*)

SHAPE short trunked, broad crowned, up to 90 ft. tall. TRUNK often forking near the base. BARK rough, scaly, dark brown on old trunks. LEAVES 2-4 in. long, lance-shaped, downy when young, short stalked, appearing with the flowers and turning lemon yellow in autumn. RANGE: N.B. to e. Dak., throughout the Middle West, and s. to Fla. and Ariz. Also in centr. Calif. SHINING WILLOW (*Salix lucida*) is a tall shrub or sometimes a small tree, the leaves when young covered with rusty or sordid hairs, but finally smooth, thick, dark-green, and shining on both sides. Michaux's drawing of it, figured here, shows an unusually short-tipped sort of leaf, and he may perhaps have confused it with the Bay-leaved willow, *Salix pentandra*, or the Peach-leaved willow, *Salix amygdaloides*. The Shining Willow ranges from Nfd. to Min. and s. to Pa., Ill., and Neb.



*Black Willow—Shining Willow*



## QUAKING ASPEN

(*Populus tremuloides*)

SHAPE round-topped, 20-60 ft. tall. BARK greenish white to yellowish brown on young parts, though with dark blotches below the branches, smooth except on very old trunks which become dark and furrowed. BRANCHES slender, often drooping at the ends. TWIGS smooth, shiny, tan. BUDS slender, shining, scarcely sticky, red. LEAVES blue-green with whitish veins, on long flattened stalks. RANGE: Newf. to the Yukon, s. to N. J. and the mts. of Pa. and Ky., through the Middle West and along the Rockies to Mex., through the Southwest to centr. and s. Calif. This graceful tree with almost birch-like bark, at times, and restless, talkative foliage, is one of the most widespread in the country. Quite common even in the east, it becomes abundant—the commonest deciduous tree, in

many parts of the far west and far north. It probably goes as far north as any tree in the barrens of Canada, and in the western mountains it fills the glens and follows water courses and lakes. "With its slender, pendulous branches and shimmering leaves and pale bark, the aspen enlivens the spruce forests of the north and marks steep mt. slopes with broad bands of color, light green in summer and in autumn glowing like gold against backgrounds of dark cliffs and stunted pines" (Sargent). The aspen, in the West, should not be confused with the various cottonwoods (which see.) The cottonwoods too have dancing, whispering leaves, but the aspens are known by the fact that the terminal bud of each twig is small and scarcely at all gummy, while cottonwoods have big, sticky buds.

## LARGE TOOTHED ASPEN

(*Populus grandidentata*)

SHAPE a rather narrow round topped head, up to 90 ft. tall. BARK smooth, grayish, rough only on old trunks. TWIGS stout, reddish brown, gray downy in Spring. Buds big, dusty-looking, only slightly sticky. LEAVES on flattened stalks, turning gold in Fall. RANGE: N. S. to Ont. and Minn., Ill., and Ind., s. in the mts. to N. C. The wood is used for excelsior, pulp, and cheap lumber. SWAMP BLACK POPLAR (*Populus heterophylla*) is a similar tree but with rough dark bark and darker twigs, larger, heart-shaped leaves with finely scalloped margins, the undersides downy, veiny, and with yellow midrib. Swamps from La. north to Ill. and around the coast to Conn. WILLOW LEAVED POPLAR (*Populus angustifolia*) has smooth bark and long, narrow leaves, quite unlike any others. This is a favorite street tree in western cities; native from Assin. to Nev., Ariz. and N. Mex.



Quaking Aspen Large Toothed Aspen





*Carolina Cottonwood*

## CAROLINA COTTONWOOD

(*Populus balsamifera*)

TRUNKS often forking from the base, often leaning. BARK gray green; in age gray, furrowed, with braiding ridges. TWIGS ocher, sometimes corky ridged. BUDS sticky, brown. LEAVES with a translucent border, paler beneath, yellow in fall. RANGE: Que. and N. B. to Fla., Tex. and Kans. A small tree of shores and low plains, with rainy-sounding, twinkling foliage, sending forth at fruiting time clouds of downy seeds. FREMONT COTTONWOOD (*Populus Fremontii*) has leaves tapering at tip, not paler beneath. Centr. Calif. to N. Mex. and s. Colo. GREAT PLAINS POPLAR (*Populus Sargentii*) has lighter yellow twigs, hoary buds, leaves broader than long, lighter green, fewer toothed. High plains and mts. from Albt. to w. Tex. and N. Mex. Groves of this tree, sighted by pioneers, indicated the presence of water. From their flimsy wood were run up the first towns of the old West.

## MOCKER NUT HICKORY

(*Carya alba*)

SHAPE oval, 50-70 ft. tall TRUNK somewhat swollen at base. BRANCHES more or less down sweeping except the upper ones. BARK not shaggy but broken by rough, corky, braided ridges that appear as if sand-papered. TWIGS stout, ruddy, downy. BUDS pale gray, thick, densely hairy, many-scaled. LEAVES of 7-9 resinous leaflets, paler beneath. FRUIT a large husk splitting into 4 segments; nut brownish; kernel sweet. RANGE: Gulf States to s. Gt. Lakes region and s. N.E. The wood is used like that of shagbark and not commercially differentiated. PIGNUT (*Carya glabra*) is similar, but the twigs and shining, heavy leaves are without hairs; leaflets 5-7; fruit pear-shaped; shell very bony. The kernel is far inferior to that of Shagbark and Mocker Nut. It is found throughout the e. deciduous forest belt.



*Mocker Nut Hickory*





*Shagbark Hickory*

## SHAGBARK HICKORY

(*Carya ovata*)

SHAPE narrowly oblong, up to 140 ft. tall. BARK smoke gray, shaggy and peeling off in long thick strips. BRANCHES pendulous. TWIGS erect, stout. BUDS large, many scaled. LEAVES of 5-7 leaflets. FRUIT with a thick husk splitting into 4 segments; nut whitish, 4-ridged, the kernel delicious. RANGE: Gt. Lakes region to Tex. and Fla., e. to N. E. The wood is heavy, hard, tough, employed for all implements requiring strength, such as axles, axe handles, ploughs, and skis. This noble tree leafs out late and early drops its bronze foliage. KING NUT HICKORY (*Carya laciniosa*) is similar in every way but the leaflets are 7-9 in number, downier beneath; nut very large, yellowish, in a thinner husk. As a nut tree this is decidedly superior to Shagbark. Centr. N. Y. and down the Ohio Valley, Mo., Ia., and e. Okla. Bark scaly rather than shaggy, but peeling off.

## BUTTERNUT

(*Juglans cinerea*)

SHAPE oval, up to 90 ft. tall. BARK deeply fissured, gray; twigs stout, downy and sticky when young, as are the stout buds. LEAVES with downy, sticky stalk and central axis, consisting in 11-19 leaflets. FRUITS 3-5 on a branch, ½ in. long, coated with matted, clammy, rusty hairs; the husk not splitting; nut 2-celled at base, ridged, with sweet kernel. RANGE: N.B. to Va., s. in the mts. to Ga., w. to centr. Minn. and s. to Ark. The light brown, soft wood is used for furniture and interior finish. The green husks are still employed in the s. Appalachians to dye cloth orange and yellow; sugar of excellent quality can be made from the sap. CALIFORNIA WALNUT (*Juglans Hindsii*) differs from Black Walnut in having 11-17 narrower leaflets and smaller nuts. Coast from San Francisco south. MEXICAN WALNUT (*Juglans rupestris*) is a small tree, with 9-23 very slender leaflets. W. Tex. to Ariz.



*Butternut*





*Black Walnut*

## BLACK WALNUT

(*Juglans nigra*)

SHAPE round headed, short trunked, up to 150 ft. tall. BARK brown, furrowed. TWIGS thick, downy at first. BUDS flattened, with 4 scales. LEAVES with 15-25 pairs of leaflets, minutely downy beneath, becoming smooth and shiny above. FRUIT solitary or paired, about 2 in. thick, the husk not splitting, thick, bitter-smelling; kernel sweet inside the 4-celled, black nut. RANGE: s. N.E. to Gt. Lakes region and centr. Neb., s. to e. Tex., and s. on the piedmont to Ga. and Ala. The very strong heavy, durable wood is a beautiful rich dark brown. It has played an interesting role in American history. Its husks dyed the homespuns of the first settlers; its wood furnished the colonial cabinet makers, and in the Civil War it was in great demand for gunstocks. The craze for this tree reached fantastic lengths and resulted in its widespread destruction.

## CANOE BIRCH

(*Betula papyrifera*)

SHAPE broadly pyramidal; up to 80 ft. tall. BARK soft, chalky white (gray, or orange, in some regions) peeling around the stems in papery strips. BRANCHES horizontal, often pendulous at the ends. LEAVES shining above, black-dotted below. RANGE: Lab. to Alaska and Wash., s. to Pa., s. Mich., s. Wis., and w. to Neb. and Mont. The wood is valued for woodenware. This lovely tree with cheerful foliage and softly gleaming bark, lightens the somberness of northern forests, and furnished Indians with canoes. BLACK BIRCH (*Betula fontinalis*) is similar, but with close bronze bark and doubly toothed leaves. Alaska to Ore., in the Rockies to Colo. RIVER BIRCH (*Betula nigra*) has ragged, flaky, silvery gray to reddish brown bark and rhombic-oval leaves, the undersides whitish and downy. River-banks, Mass. to s. Minn. (but s. of the Gt. Lakes) and to n. Fla. and e. Tex. Not in the higher Appalachians.



*Canoe Birch*





*Cherry Birch*

## CHERRY BIRCH

(*Betula lenta*)

SHAPE pyramidal in youth, broad topped in age; up to 80 ft. tall. BARK on young parts lustrous red brown, on old brown and cracked. BRANCHES ultimately wide spreading, drooping at the ends. TWIGs slender, lustrous red brown. LEAVES fragrant, like the bark,  $2\frac{1}{2}$ -6 in. long with yellow midrib, the undersides veiny and downy in the axils. RANGE: Me. to the mts. of Ala., w. to Ohio. The wood is heavy, strong, dark and satiny. It is used for ships and furniture. It yields birch oil which is employed medicinally and as a flavoring. Birch beer is made from the sugary sap. Very beautiful in spring, when the golden catkins clothe the tree, this is the most valuable timber tree among our birches. YELLOW BIRCH (*Betula lutea*) is similar, but the bark is gray and flaky and the twigs are downy. Newf. to Man., s. to the mts. of Ga. The wood is valued for agricultural implements.

## AMERICAN BEECH

(*Fagus grandifolia*)

SHAPE broad topped; up to 100 ft. tall. TRUNK massive. BARK smooth, bluish gray. BRANCHES greatly forked, terminating in many delicate pale gray twigs. Leaves thin and filmy or becoming thicker and darker in the South, turning a soft gold in autumn. FRUIT a small brown edible nut enclosed in a box-like rusty, knobby husk which splits, after frost, by 4 valves. RANGE: N.B. to e. Wis., s. to e. Tex. and n. Fla. The wood is strong, tough and handsome but warping and not durable. The bark is an ingredient in skin ointments and the nuts are gathered for the market, but fruiting is scarce except far North. Beech woods, formerly of great extent on limestones of the Middle West, were the gathering place of the passenger pigeon which subsisted largely on beech nuts. The beech forms open and airy but cool and emerald forest glades.



*American Beech*





*Hop Hornbeam*

## HOP HORNBEAM

(*Ostrya virginiana*)

SHAPE with a round branchy top; to 70 ft. tall. BARK gray, scaly, rough. TWIGs slender, tough. LEAVES 3-5 in. long, light yellow green below, with downy tufts in the axils of the veinlets. RANGE: Cape Breton to the Black Hills, s. to Fla. and e. Tex. The wood is heavy, hard, tough, used for tool handles, woodenware, etc. This shady graceful tree is birch-like in form and bark, but beech-like in leaf; its autumn foliage being clear yellow. IRON-WOOD (*Carpinus caroliniana*) is a similar but smaller tree, the trunk frequently forking near the ground, bark close and blue-gray; stem and branches fluted and sinewy. Nutlet not enclosed in a hop-like bag as in the Hop Hornbeam, but borne on a papery bract. This graceful, leaning tree, with scarlet autumn leaves, is also called Blue Beech. Que. to Minn. Fla. and Tex.

## WHITE ELM

(*Ulmus americana*)

SHAPE, with a broadly umbrella-form top, up to 120 ft. tall. TRUNK often forking. BARK light gray, scaly and fissured. BRANCHES very numerous but only at the tip where they spread upwards like the spokes of an umbrella, drooping at the ends. LEAVES rough above, paler beneath, a bright clear yellow in autumn. RANGE: Throughout the e. half of the United States; n. to Newf; reaching the Rockies from Sask. to Colo. This magnificent tree characterizes stream banks and valleys in the wild, and in cultivation the old villages, manor grounds, and colleges of the northeastern states. CORK ELM (*Ulmus racemosa*) has twigs and undersides of leaves downy even at maturity. Branchlets finally corky winged. Middle West and Tenn. to Que. and nw. N. E. Both kinds are used for hubs, beams of heavy agricultural implements and boats.



*White Elm*





*Slippery Elm*

## SLIPPERY ELM

(*Ulmus fulva*)

SHAPE with a broad, open, flat topped head; 60-70 ft. tall. BARK dark brown tinged with red, divided by shallow fissures and covered by large scales. TWIGs stout, bright green, rough and downy. LEAVES very scratchy above, densely downy beneath, turning dull yellow in autumn. RANGE: Throughout the e. half of the country and se. Can. A massive, handsome tree, whose wood is used for agricultural implements, fence posts and ties. The thick fragrant inner bark of the branches is mucilaginous and was formerly used as a chewing-stick; it is employed in medicine against inflammations. CEDAR ELM (*Ulmus crassifolia*) differs from all other elms in being autumn-flowering. From the above it differs in its corky winged pendulous branchlets and broader, shorter, lustrous leaves. A handsome tree. Miss. to s. Ark., w. Tex. and adj. Mex.

## COMMON HACKBERRY

(*Celtis occidentalis*)

SHAPE round topped; to 120 ft. tall. TRUNK slender. BRANCHES spreading or pendulous BARK light brown to silver gray, smooth until old age when broken into scales or warty knobs. LEAVES lustrous and rough above, turning yellow in autumn; FRUIT orange red to dark purple, with thin edible flesh and large stone. RANGE: N. C. to Kans. and n. to Que. and Man. This handsome tree has not much timber value; its leaves in the South are sometimes heavy and dark green. MISSISSIPPI HACKBERRY (*Celtis laevigata*) differs in its much narrower and longer leaves, the margins not toothed; fruits smaller. S. Ind. and Ill. through Ky., Tenn. and Ala. to s. Fla., Ark., Tex., Mex., and Bermuda. WESTERN HACKBERRY (*Celtis reticulata*) is a small tree with very veiny, thick leaves and orange fruits. Colo. and Tex. to Wash. and s. Calif.



*Common Hackberry*





*Southern Chinquapin*

## SOUTHERN CHINQUAPIN

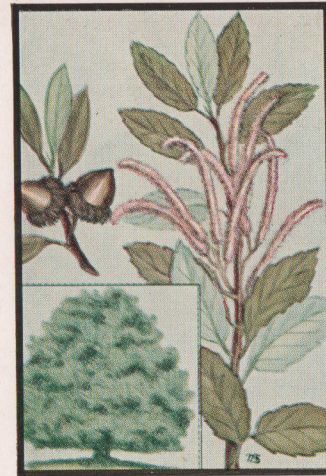
(*Castanea pumila*)

BARK light brown, furrowed with narrow cracks. LEAVES 3-5 in. long, white-downy beneath, dull yellow in fall. FLOWERS in dangling white catkins. FRUIT a spiny husk containing 1 small, sweet, brown nut. RANGE: e. Tex. to Mo. and up the Ohio to Pa. Also uplands from Ala. to Tenn. and Md. A mere shrub over much of its range, Chinquapin is a tree 50 ft. tall in the far South. The nuts are offered in the southern markets. CHESTNUT (*Castanea dentata*) has been almost annihilated by chestnut blight. GIANT CHINQUAPIN (*Castanopsis chrysophylla*) is similar but the leaves are shiny, evergreen, golden-downy beneath; catkins erect. A tree 50-115 ft. tall, with ruddy or gray, deeply furrowed bark. Cascades of Ore. to the outer Coast ranges of Calif.

## TANBARK OAK

(*Lithocarpus densiflora*)

SHAPE symmetrical, pyramidal, short-trunked, 40-150 ft. tall. BARK on young trunks white-mottled, on old brown, smoothish or checked into rough plates. LEAVES 2-5 in. long, evergreen, the undersides densely white downy beneath, becoming smooth, with a white bloom; nerves parallel, conspicuous beneath. FRUIT acorn-like but the cup scales almost prickly. RANGE: Mts. of sw. Ore. and n. Coast Ranges of Calif.; also in the Sierra Nevada to Mariposa Co. The wood is hard and strong, used for furniture and interior construction. The bark is highly valuable for tanning; it is stripped in May, June, and July. This magnificent tree resembles a chestnut in leaf, flower, and the cup of its acorn, but is oak-like in its shape and nut. Popularly often called "Sovereign Oak."



*Tanbark Oak*





White Oak

## WHITE OAK

(*Quercus alba*)

SHAPE short-trunked, with very broad rounded top; 50-70 ft. tall. BARK light gray, broken by shallow fissures into long, thin, flaky scales. BRANCHES wide-spreading. LEAVES reddish brown in autumn. RANGE: s. and w. N.E. to centr. Fla. and e. Tex., through the s. Gt. Lakes region to se. Minn. The wood is strong, tough, heavy and durable, and is used for boat-building, interior finish, agricultural implements, barrels and clapboards. The bark is valued in tanning. VALLEY OAK (*Quercus lobata*) called also Maul Oak, Weeping Oak, and Roble, is a magnificent tree of Calif. with wide spreading, drooping branches. Leaves with more numerous (7-11) lobes, dark green above, gray-downy beneath; bark on old trunks furrowed into squarish, corky, gray segments.

## POST OAK

(*Quercus stellata*)

SHAPE short-trunked, with broad, dense, round head; 60-100 ft. tall. BARK grayish brown, deeply fissured. BRANCHES horizontal. TWIGGS brown. LEAVES thickish, rough to touch above, gray downy below. RANGE: On the coast plain and piedmont of the Gulf States, n. to s. N.E., and up the Gt. Valley to Mo. and Ia., up the Ohio to Pa. The wood is heavy, hard, durable, but difficult to season; used for ties. The acorn is edible, like that of the White Oak, when boiled, and was used as a coffee substitute in the Confederate States. OREGON OAK (*Quercus Garryana*) is similar but with shorter leaves (2-5 in. long) and light gray bark. It is the finest timber oak from Wash. to Calif.



Post Oak





Overcup Oak

## OVERCUP OAK

(*Quercus lyrata*)

SHAPE a symmetrical, round topped head; up to 100 ft. tall. BRANCHES inclined to droop, rather short. LEAVES shiny above, white downy beneath, turning a deep cardinal red in autumn. RANGE: Swamps and river bottoms, coast plain and piedmont from the Gulf States to s. N. J., and up the Gt. Valley to Neb., Ill., and Ohio. The wood is like that of the White Oak and similarly used. BUR OAK (*Quercus macrocarpa*) is similar but the leaves broader, 5-8 in. long, maroon in autumn. Branches very wide-spreading; bark light grayish-brown, deeply furrowed. Acorn large, the rim of the cup almost bur-like. N. S. and w. N. E. through N. Y. and w. of the Alleghenies to n. La., e. Tex. and the Rockies. A noble tree once forming park-like groves in the Middle West in which the pioneers easily drove horse and wagon, built their first cabins and pastured their cattle.

## BASKET OAK

(*Quercus Prinus*)

SHAPE a round topped, dense head; up to 100 ft. tall. TRUNK massive. BARK scaly, light gray. BRANCHES stout, wide spreading. LEAVES rather rigid, 4-8 in. long, grayish downy beneath. RANGE: Gulf States and n. in the Mississippi basin to Mo. and the Wabash R. Along the coast plain and piedmont to Del. This is a most imposing tree in the South. It is used in basketry, for ties and other rough construction. YELLOW CHESTNUT OAK (*Quercus Muhlenbergii*) is similar, but with a narrow head, narrower leaves, thicker and shorter acorn. Tex. to s. Minn. and through the forest belt of the Middle West and limestone Alleghenies (Ala. to N. Y.) Also down the Potomac and Hudson to tidewater. The glossy foliage and handsome stature make this an impressive tree, especially in the Middle West.



Basket Oak





*Swamp White Oak*

## SWAMP WHITE OAK

(*Quercus bicolor*)

SHAPE broad topped, 60-90 ft. tall. BARK light grayish brown, scaly. LEAVES white down beneath, turning yellow brown or orange red in autumn. RANGE: s. N. E. to Gt. Lakes region and Minn.; s. to Tex. and Fla. The wood is valuable like that of the White Oak but the tree is not so handsome. It is easily distinguished by its bark and the numerous twigs. ROCK CHESTNUT OAK (*Quercus montana*) is a massive tree with dark brown, ridged bark and foliage similar to the above but larger, glossy above and not downy beneath except in youth. Acorn large, lustrous, and handsome. Foliage in autumn yellow to dull orange. Throughout the Appalachian range from the Catskills and mts. of N. J. to Ala. and in the upper Ohio valley and w. N. Y. This noble tree forms stately groves in the southern mountains.

## SOUTHERN LIVE OAK

(*Quercus virginiana*)

SHAPE short trunked, the very broadly spreading branches making a crown wider than high; 40-50 ft. tall. BARK dark brown, rough, deeply furrowed, the ridges a grayer brown. LEAVES evergreen, thick, 2-4 in. long, paler beneath with very fine down. RANGE: Coast plain from Tex. (and far up the Rio valley) to the Gt. Dismal Swamp and Mobjack Bay, Va. The wood is light golden brown, beautiful, very hard to work, used for ornamental interior finish on ships. With the immense spread of its branches this noblest, most picturesque tree of the far South forms gracious park-like groves. The Spanish Moss dripping from its boughs adds to its dreamy charm. CANYON LIVE OAK (*Quercus chrysolepis*) is similar but has pendulous branches, the leaves bluish rather than olive green. This is the finest evergreen oak from Ore. to Calif.



*Southern Live Oak*





*Willow Oak*

## WILLOW OAK

(*Quercus Phellos*)

SHAPE with a conical crown; to 80 ft. tall. TRUNK stocky. BARK deep ruddy brown, shallowly seamed. LEAVES glossy above, lighter beneath, RANGE: Gulf States and n. in the Gt. Valley to Ky., around the coast to Long Island. But for its acorns, small as they are, they would scarcely be recognized as an oak from its leaves. A favorite shade tree in S. cities. LAUREL OAK (*Quercus imbricaria*) is very similar, with larger, broader leaves, the under surface downy. Pa. to Ga., w. to s. Wisc., e. Neb., and Ark. COAST LIVE OAK (*Quercus agrifolia*) is a striking tree with evergreen, holly-like leaves and very long, slender little acorns in shallow cups. Grows 90 ft. tall or may be a mere shrub. Centr. and s. Calif. DESERT LIVE OAK (*Quercus hyopleuca*) differs from Coast Live Oak in having leaves white downy beneath, the margins not spiny-toothed. W. Tex. to s. Ariz.

## RED OAK

(*Quercus borealis*)

SHAPE round headed; 50-150 ft. tall. TRUNK usually extensively branching about 15 ft. from the ground. BARK on young parts gray brown; on trunk dark brown and finally broken by shallow furrows into long, straight, flat faced ridges. TWIGs rather slender, red. LEAVES paler beneath, in autumn turning a rich maroon red. RANGE: N.S. and the St. Lawr. and Gt. Lakes basins (exc. L. Superior) throughout the forest belt of the Middle West, s. to w. Tex. and centr. Tenn., s. on the mts. to Ga. Not a valuable timber tree. SPANISH OAK (*Quercus falcata*) is important for its good tan bark. Leaves long and narrow, with 5-7 deep, narrow, scythe-shaped lobes, gray downy beneath. Acorn only ½ in. long, half buried in its cup. Gulf States and up the Mississippi to s. Ind., around the coast to N. J.



*Red Oak*





*Swamp Spanish Oak*

## SWAMP SPANISH OAK

(*Quercus palustris*)

BARK dark brown with gray patches, scored with shallow, short, vertical furrows. BRANCHES horizontal and finally somewhat drooping. TWIGs numerous, slender. LEAVES 3-5 in. long, paler beneath and tufted in the axils of the veins with fine hairs. Autumn foliage a rich cardinal red. RANGE: Chiefly lowlands of the Ohio Valley sw. to Okla. and Kans., ne. through Pa. to Del., s. N. Y. and the lower Connecticut valley. A fine tree reaching 100 ft. tall. PIN OAK (*Quercus coccinea*) differs in having its leaves truncate at base, and its acorn cup hemispherical instead of saucer-shaped. Foliage brilliant cardinal red in autumn. S. Me. to Fla., w. to Tex. and Ia. YELLOW OAK (*Quercus ellipsoidalis*) is very similar to Swamp Spanish Oak; the bark is smooth and gray, the stature small; cup gray; leaves yellowish brown in Fall. S. Mich. to Man. and Ia.

## BLACK OAK

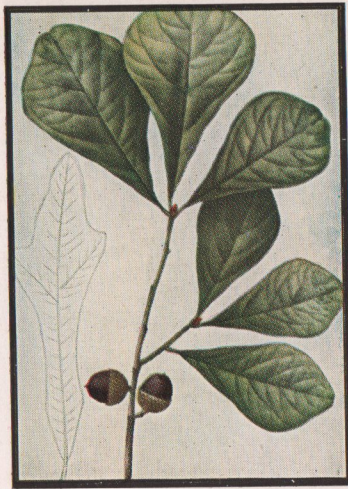
(*Quercus velutina*)

TRUNK massive. BARK deep gray or sepia (the inner bark bright orange yellow) very rough and thick, broken into short, thick, corky, cross scored ridges. TWIGs reddish mottled with gray, stout. LEAVES dull whitish olive beneath, turning dull brownish or orange or red in autumn. RANGE: s. and w. N. E. to w. Ont. and Minn., s. to n. Fla., e. Tex., and e. Kans. One of the finest and largest of all our oaks, 50-160 ft. tall. The bark is rich in tannin and the yellow dye, quercitron is derived from the inner bark. CALIFORNIA BLACK OAK (*Quercus Kelloggii*) differs in having downy winter-buds and leaves without tufts in the axils of the veins. Acorn only  $\frac{1}{2}$ - $\frac{3}{4}$  in. long. A very fine, wide-spreading, ornamental tree. Ore. to Calif. It may reach 100 ft. high, and has a broadly round topped head.



*Black Oak*





Water Oak

## WATER OAK

(*Quercus nigra*)

SHAPE, with a conical head; 30-80 ft. tall. BARK smooth above but on old trunks brownish gray, rough ridged. LEAVES shining on both sides, but paler beneath, with hair tufts in the axils of the veins, often evergreen. RANGE: Swamps and bottomlands, Gulf States n. in the Mississippi basin to Ky., around the coast to Del. BLACK JACK OAK (*Quercus marilandica*) is a small, slim-stemmed tree with rough black bark and thick, short, contorted branches; the leaves are broad, thick, lustrous olive green above, rusty hairy beneath, wedge-shaped at base, very broad near the tip by reason of the big obtuse lobes, middle lobe just a wedge-shaped point. Acorn small, globular, half covered by the thick scaled cup. Foliage yellow russet in fall. A characteristic rather stunted tree of uplands. S. States and Mississippi Valley and s. Gt. Lakes region and up the coast to Long Island.

## BROAD LEAVED CUCUMBER TREE

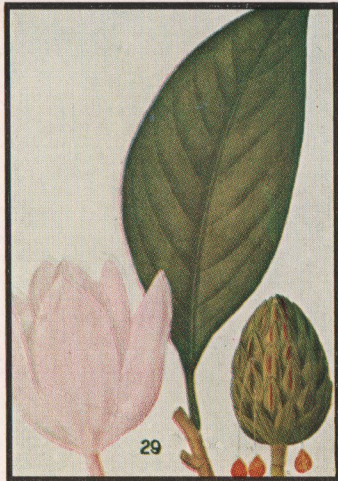
(*Magnolia acuminata*)

SHAPE oblong, 50-90 ft. tall. BARK grayish brown, broken into small thin scales, the ridges narrow and braiding. BUDS silky. LEAVES on the undersides paler and slightly downy; 6-10 in. long. FLOWERS about 2 in. long, tulip-shaped, slightly fragrant, blooming in late May. RANGE: Chiefly the Appalachians, w. to s. Ill. and Ark., n. to w. N. Y., and n. shore of L. Erie, s. to s. Ala. This handsome tree is chiefly valued as an ornamental but the wood is used occasionally where tensile strength is not required. BROAD LEAVED UMBRELLA TREE (*Magnolia tripetala*) has thin leaves 18-20 in. long, clustered at the ends of the stout greenish brown twigs, making an umbrella-like effect. Flowers creamy, ill-smelling, appearing in May. A small tree with smooth gray bark with blister-spots. N. C. to Ark. and especially along the Appalachians from Ala. to Pa.



Broad Leaved Cucumber Tree





*Evergreen Magnolia*

## EVERGREEN MAGNOLIA

(*Magnolia grandiflora*)

SHAPE broadly pyramidal, symmetrical; to 90 ft. tall. TRUNK short, thick. BARK brown-gray, finally rough with short thin scales. BUDS large, silky. LEAVES evergreen, leathery, glittering above, rusty downy beneath. FLOWERS 6-8 in. across, water-lily-like, fragrant with waxy petals that fall one by one. RANGE: Low grounds near the coast from se. N. C. to Tex. and up the Mississippi to Ark. Not centr. and s. Fla. This beautiful ornamental tree is cultivated far beyond its range in the wild. The flowers bloom from April to June in the South, in midsummer in the North. SWEET BAY MAGNOLIA (*Magnolia virginiana*) is a small straggling tree, very similar, but the leaves much smaller and thinner, with dense white down beneath; flowers also smaller. Gulf and S. Atlantic states, n. in swamps near the sea to Magnolia, Mass.

## TULIP TREE

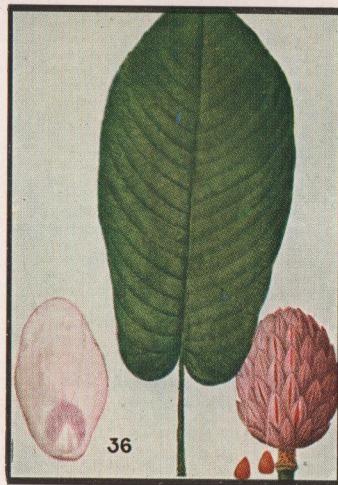
(*Liriodendron tulipifera*)

SHAPE with a small pyramidal head; up to 190 ft. tall. TRUNK straight and often massive (to 10 ft. thick) sometimes clean of branches for 100 ft. BARK brownish gray with short, deep vertical furrows and rounded ridges. BRANCHES slender, curved, the lower drooping; twigs erect, shining brown, many bearing the flowers like candelabra. LEAVES turning rich gold or russet in autumn. FLOWERS 3-4 in. across, blooming in May and June. RANGE: Southern States (exc. Tex. Okla. and s. Fla.) to s. parts of Wis., Mich., Vt. Also n. centr. Mass. and n. shore of L. Erie. By lumbermen called "Yellow Poplar" on account of its restless leaves and yellow wood, this lively tree is probably the most valuable American timber tree (aside from the Conifers) and certainly the tallest in the eastern States. The wood is light, soft, but not readily shrinking or splitting, used for boat building, shingles and boxes.



*Tulip Tree*





*Great Leaved Magnolia*

## GREAT LEAVED MAGNOLIA

(*Magnolia macrophylla*)

SHAPE broadly spreading, to 50 ft. tall. TRUNK slender. BARK light gray, divided into minute scales and shallowly furrowed. BUDS silky. LEAVES 1-3 ft. long, clustered at the tips of the branches, white-downy beneath. FLOWERS bell shaped, 8-12 in. across, blooming in May and June. RANGE: Gulf States to Ark. and e. Ky. Rare in w. N. C. This tropical looking tree, with astonishing great leaves and flowers, has no value but an ornamental one. EAR LEAVED UMBRELLA TREE (*Magnolia Fraseri*) is a slender little tree with smooth brown bark, smooth, lustrous, deep green leaves crowded at the ends of the branches, broadest near the end, with two little ear-like lobes near the narrowed base. Flowers 3-9 in. broad, creamy, sour-smelling, in May and June. Chiefly in the s. Appalachians (Ky. and Va. to Ala.) and s. to the Gulf (Miss. Fla.)

## CALIFORNIA LAUREL

(*Umbellularia californica*)

SHAPE short trunked, with a dense crown, making a broad based, dome shaped thick tree 50-60 ft. tall. BARK drab or brown. LEAVES evergreen, aromatic, thick,  $3\frac{1}{2}$ - $4\frac{1}{2}$  in. long. FRUIT olive-like, reddish or brown-purple when ripe, 1- $1\frac{1}{2}$  in. long; seed large. RANGE: Coast ranges from Ore. to s. Calif., also on the w. slopes of the Sierra Nevada. A magnificent unique tree, often forming groves of great beauty in cañons and mountain valleys. The wood is heavy, hard, strong, intricately patterned and is used for turned articles, especially furniture and interior finish. In the early lumbering days it was employed for the log railways and ox yokes. The seed, as sweet as chestnuts, was eaten roasted by the Indians. A decoction of the leaves is used for an insecticide.



*California Laurel*





*Sassafras*

## SASSAFRAS

(*Sassafras officinale*)

Shrub or tree up to 120 ft. tall. TRUNK reaching 7 ft. in diameter. BARK becoming very rugged, brown, broken into braided twisted ridges on young trees cracked into short blocks. BRANCHES very crooked, ascending. TWIGS bright green, very limber, the bark mucilaginous as are the LEAVES which are paler beneath, aromatic when crushed, turning orange and scarlet in autumn. FLOWERS appearing with the leaves in early spring, greenish gold, the sexes on separate trees. FRUIT a "stone-fruit", very handsome slate blue on a thick red stalk, in Aug. RANGE: S. States to s. N. E., centr. Mich. and s. Ont., e. Ia. and Kans. The fragrant wood is used in boat building and cooperage. Oil of sassafras, used in medicine, is distilled from the bark and sassafras tea, brewed from the leaves, is a rustic spring tonic.

## SWEET GUM

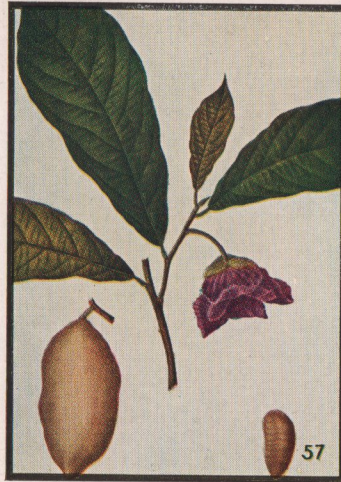
(*Liquidambar styraciflua*)

SHAPE broad headed, 40-140 ft. tall. TRUNK massive. BRANCHES ascending above, horizontal below, often corky ridged on the twigs. BARK gray brown, deeply furrowed vertically, the ridges broad, flat and scaly. TWIGS bright green. LEAVES fragrant when crushed, turning deep yellow or rich red in autumn. FRUIT a hard, spherical head, often persistent all winter, most of its chambers empty of fertile seeds. RANGE: s. States n. to Mo., and, near the coast, through the Middle Atlantic States to se. Conn. This curious tree, often contorted and ungraceful, attains its greatest development in the Mississippi basin. Its hard, heavy wood is used for the outside finish of houses, for flooring, barrels and cabinet making, and from the resinous sap a fragrant oil is distilled, used for catarrhal troubles and as a basis for chewing gum.



*Sweet Gum*





Pawpaw

## PAWPAW

(*Asimina triloba*)

Shrub or low tree, up to 40 ft. tall. TRUNK at most 1 ft. thick. BARK dark brown marked with large ash colored blotches. LEAVES 6-12 in. long. FLOWERS borne singly, about 1½ in. across, with 6 fleshy maroon or purple petals and 3 reflexed green sepals, blooming March-April. FRUIT fleshy, 3-5 in. long, by 1-1½ in. thick, weighing 6-12 ounces, the skin brown, finally black. RANGE: s. states to se. Neb., s. Mich., Ont., rarer up the Atlantic seaboard to e. Pa. The leaves of this curious little tree are unpleasantly scented while the flowers smell like those of red Trillium or Strawberry Bush. The fruit is generally ripe about the time of the first frosts; it is in condition to eat when the skin turns black and warps away from the flesh, and that of certain individual trees may be excellent, as custardy fruits go.

## JUNEBERRY SHADBUSH SERVICE TREE

(*Amelanchier canadensis*)

SHAPE narrowly round-topped, up to 40 ft. high. BARK gray, with sepia brown striping, becoming furrowed into flat scaly ridges on old trees. LEAVES turning rusty red in autumn. FLOWERS blooming while the leaves are just expanding (March-May,) similar to those of apple or hawthorn, but the petals strap-shaped and more graceful. Fruits edible, similar to those of hawthorn. Ripe in summer. RANGE: Me. to Ga., Ia., La., and Mo. In N.E. this is a mere shrub, but it becomes quite a fine tree southward. In the s. Appalachians it is very beautiful when in flower. It is believed in New England to flower when the shad begin to swim up stream. The name of Service Tree or "Sarviss Tree" in the Appalachians is a corruption of the old English name for the Service Tree of Europe which is, in turn probably only a rustical attempt at the Latin name, *Sorbus*.



Juneberry Shadbush





*Common Sycamore Plane*

## COMMON SYCAMORE PLANE

(*Platanus occidentalis*)

SHAPE broadly round topped, 50-150 ft. tall. TRUNK massive, up to 13 ft. thick, becoming our most ponderous tree, except the Sequoias. BARK smooth, peeling in roundish, thin, brittle plates, leaving blotches of white, green, and tan. LEAVES 4-9 in. wide, turning russet in autumn. FRUIT a soft spherical head of nutlets embedded in hairs, green becoming light brown. 2-4 balls together, RANGE: Throughout the e. U.S.A. except s. Fla. and the far north. The wood of this picturesque river-bank tree is heavy, coarse-grained and strong but short-lived and warping. It is used for cigar boxes and interior finish. CALIFORNIA SYCAMORE (*Platanus racemosa*) differs in having 5-7 fruiting heads together, and very deeply cut leaves with narrow lobes; the upper parts are usually bone white. Coast ranges and interior valley of centr. and s. Calif.

## AMERICAN CRABAPPLE

(*Malus coronaria*)

SHAPE with broadly hemispherical, irregular top, 18-30 ft. tall. TRUNK usually forking in a shrubby way. BARK fissured, dark red-brown, scaly. BRANCHES contorted, twiggy, and often thorny. LEAVES lobed or un-lobed, finally more or less smooth on both sides, turning yellow or purplish in autumn, or nearly evergreen in the South. FLOWERS white or pink, fragrant, in late spring. FRUIT greenish or yellowish, waxy, fragrant, hard and sour. RANGE: N. Y. to Fla. Miss., Mo. and Ill. When in full flower this is one of the loveliest of all trees. The fruits are unexcelled for making jellies and preserves. IOWA CRAB (*Malus ioensis*) has leaves downy on the undersides. Minn. to Tex., Mo., and Ind. OREGON CRAB (*Malus fusca*) has leaves pale, downy, and finally rusty beneath; fruits becoming purple-black, Alaska to Cal., Coast Ranges.



*American Crabapple*





*Black Cherry*

## BLACK CHERRY

(*Prunus serotina*)

SHAPE narrowly oblong, to 100 ft. tall. TRUNK stout and straight. BARK at first smooth, glossy, mahogany red, becoming finally covered with innumerable small scales. TWIGS bright red. LEAVES thickish, shining above, clear yellow in autumn, with a dark red gland near the stalk. FLOWERS from March-June. FRUIT dark red becoming black with purple flesh. RANGE: N.S. to N.D., Tex. and Fla. and, in a slightly different variety, N. Mex. and Ariz., in mt. cañons. This stately, beautiful species is one of the most valued timber trees of the country. The strong wood, on exposure to air, turns dark as mahogany and is often employed as a substitute for it, being popular in cabinet work and veneering. The bitter bark yields a good cough syrup.

## PIN CHERRY

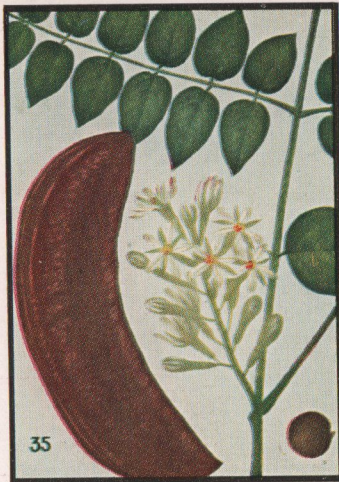
(*Prunus pennsylvanica*)

SHAPE narrowly ovoid at the top, or rarely broadly rounded; up to 40 ft. tall. BARK ruddy, shiny brown, smooth or nearly so, with numerous horizontal lines or dots, becoming rather rough and "curly" on old trees. Twigs slim, glossy, sparingly dotted. LEAVES rather sparse, drooping like those of the peach, the margin undulating paler beneath. FLOWERS appearing with the leaves (April-May) or even before them. Fruit about the size of a pea, on a long stalk, ruby red and translucent, very sour. RANGE: Lab. to B.C. s. to Colo., Ia. and Pa., and on the mts. to Tenn. and N. C. A mere shrub in the north, this is quite a fine little tree in the s. Appalachians. WILD PLUM (*Prunus americana*) has thornlike twigs, flowers appearing before the leaves in early spring, white and frail and very fragrant; fruit in summer red, about 7/8 in. thick, sweet but tough-skinned. Conn. to Fla. and Colo.



*Pin Cherry*





*Kentucky Coffee Tree*

## KENTUCKY COFFEE TREE

(*Gymnocladus dioica*)

SHAPE broadly oval at the top, up to 100 ft. tall. BARK grayish, rough with firm prominent scales. TRUNK columnar, often branchless for 70 feet. BRANCHES in winter appearing stump-like. TWIGS bright yellow. LEAFLETS pale yellow green below, margins slightly curled under. The leaves appear very late (May) and, turning clear yellow in autumn, drop early. FLOWERS in summer, the sexes on separate trees. Pods hanging unopened on branches all winter; a sweet pulp between the bean-like seeds. RANGE: w. N. Y. through the s. Gt. Lakes region to the Missouri; w. of the Alleghenies to Miss. and Okla. This strange, lovely tree is perhaps rarer in the wild than in cultivation. The beans were formerly used for "coffee," and the wood is employed for posts, ties, and furniture, because it is so durable.

## BLACK LOCUST

(*Robinia Pseudoacacia*)

SHAPE rather narrowly oblong, up to 30 ft. tall. BARK grayish to blackish, with very high, sinewy, braiding ridges. TWIGS armed with spines sometimes 1 in. long. LEAVES very thin, dull dark blue green, paler beneath, turning yellow in autumn. FLOWERS in May and June, fragrant. PODS persistent long after leaf-fall. RANGE: Appalachians, Pa. to Ga., and in Okla. and Ark. Widely planted and naturalized elsewhere. The wood of this favorite street and lawn tree is hard and durable, used for ship-building, fence posts and turnery. The bark of the roots is valued in pharmacy. CLAMMY LOCUST (*Robinia viscosa*) is at most a small tree, with very slender trunk; twigs and leaf stalks sticky hairy. Widely planted for its superb rose red, odorless flowers. In the wild confined to w. N. C. and e. Tenn.



*Black Locust*





Honey Locust

## HONEY LOCUST

(*Gleditsia triacanthos*)

SHAPE with a broad, flat topped head, up to 140 ft. tall. BARK dark gray, scaly. TWIGS zigzag, with swollen joints. SPINES red to brown, in leaf axils or on stem and branches. LEAVES turning yellow in autumn. FLOWERS in June, intensely fragrant. PODS many-seeded, pulpy within, contracting by cork-screw twists in withering. RANGE: from w. slopes of Alleghenies (Pa. to Ala.) across the Gt. Valley to Neb. and Kans., n. to Wis. and Mich. and w. N. Y., s. to ne. Tex. The durable wood is used for railroad ties and farm implements. Because of its bee-haunted flowers and airy foliage, this is a favorite farm tree, cultivated far beyond its range in the wild. WATER LOCUST (*Gleditsia aquatica*) of the Gulf States, up the Gt. Valley to Mo., Ky. and Ind., along the coast to N. C., differs in its broader, oblique leaflets and its 2-seeded, oval, pulpless pod.

## SUGAR MAPLE

(*Acer saccharum*)

SHAPE at first with narrowly oval head, gradually becoming broad topped; up to 120 ft. tall. TRUNK stout and often lofty. BARK light gray brown, finally furrowed and separating into small scales. LEAVES 4-5 in. across, dark and thickish, turning brilliant shades in autumn, of deep red, scarlet, orange and clear yellow. RANGE: s. Newf. to Minn., e. Tex and w. Fla. This noble tree, which makes glorious in fall the quiet streets of old villages in N. E. and e. Can., has heavy strong pale wood valued for interior finish, tool handles, keels and shoe-lasts. Accidental forms with contorted grain yield "bird's-eye maple," to the cabinet maker. When the sap rises, from Feb. to April, the trunk is tapped and the sap made into maple sugar and maple syrup. ROCKY MOUNTAIN MAPLE (*Acer grandidentatum*) has the leaf lobes with lobe-like, sinuous big teeth. Wyo. to Utah, N. Mex., and N. x.



Sugar Maple





Oregon Maple

## OREGON MAPLE

(*Acer macrophyllum*)

SHAPE compactly round headed; to 80 ft. tall. BARK gray, divided into narrow, ribbon-like, braiding ridges, sometimes cross marked into small squarish plates. LEAVES 3-15 in. long, turning brilliant orange in autumn. FLOWERS with conspicuous petals, fragrant. Alaska to the mts. of s. Calif. This stately colorful timber tree is often associated with Sequoia, when, "with their slender stems and large graceful leaves nicely balanced on the long stalks against the faint light filtered through the high forest canopy, they are in pointed contrast to the titanic features of the Redwood." (Jepson). BLACK MAPLE (*Acer nigrum*) is very like Sugar Maple but the leaves are concave, drooping, and the undersides are downy, not paler. L. Champlain through s. Ont. to s. Kans. and e. Okla. Along the uplands to Ga. and Ala. and centr. Miss. Scarcely distinguished by most people, it too produces Maple Sugar.

## SILVER MAPLE

## CUTLEAF MAPLE

(*Acer saccharinum*)

SHAPE pagoda-like, the upper short branches ascending, the lower long, sweeping nearly to the ground; up to 120 ft. tall. BARK reddish brown or gray, becoming furrowed and thinly scaly. LEAVES 6-7 in. long, thin, translucent, beautifully silvery below, the tooting very ornamental; drooping on bright red stalks; pale yellow in Fall. RANGE: N.B. through Gt. Lakes region to centr. Minn., e. Neb., to Ark., s. to Ga., Ala., and centr. Miss. The wood is used like that of Sugar Maple. This swift-growing tree is especially fine in the Middle West where it gives dignity and depth to humble farm yards, and forms spacious glades along the slow rivers. RED MAPLE (*Acer rubrum*) also called Swamp Maple, is similar, but the leaves not "cut-leaf," the undersides with a blue bloom but not silvery; autumn foliage scarlet and yellow. Que. to Fla., s. Minn. and e. Tex.



Silver Maple





*Common Box-elder*

## COMMON BOX-ELDER

(*Acer Negundo*)

SHAPE broadly round topped; 15-50 ft. tall. TRUNK slender and often crooked, short and wavy ridged. BARK light brown gray with narrow shallow furrows and short, flat topped ridges. TWIGs light olive. LEAVES of 3-6 veiny leaflets, dark or olive green. RANGE: throughout the e. U.S.A. (probably not native in N.E.) and s. Can. to the Rockies, and southwestward through the desert states. Variable over its wide range, sometimes with foliage white- or yellow- margined or spotted, this river bank tree passes unnoticed in the e. forest belt, but owing to its ability to stand drought, wind, cold, and heat, it is highly appreciated on the prairies and semi-deserts for shade. Where better wood is lacking, it is used for furniture, construction, pulp and woodenware. WESTERN BOX ELDER (*Acer californicum*) has thicker leaflets (only 3) densely hairy beneath. Western States.

## SWEET BUCKEYE

(*Aesculus octandra*)

SHAPE a narrowly pyramidal head; up to 90 ft. tall. BARK dark brown, grayer with age, rough scaly. BRANCHES small, pendulous. LEAVES of 5-7 leaflets, turning brown in autumn. PETALS unequal, longer than the stamens. SEED chestnut-like but inedible, called Horsechestnut. RANGE: Pa. to Ala., especially in the s. Appalachians and w. to Wis., Ia., Okla. and Tex. When, in spring, the turrets of golden flowers rise on the branch tips, this symmetrical tree seems lighted with candleabra. OHIO BUCKEYE (*Aesculus glabra*) is a large tree, differing in its smaller, pale yellow flowers; petals unequal, shorter than the curved stamens; fruit covered with prickles when young; bark ill-scented. W. Pa. to Mich., Mo., Kans., Okla, Tenn. and n. Ga. CALIFORNIA BUCKEYE (*Aesculus californica*) is a fine, broad-topped tree with pink or white flowers. Calif.



*Sweet Buckeye*





American Linden

## AMERICAN LINDEN

(*Tilia glabra*)

SHAPE round-topped, symmetrical, to 130 ft. tall. BARK brownish gray and fissured, the ridges braiding. TWIGS slender, smooth, ruddy. LEAVES smooth but for hairy tufts on the veins beneath, turning yellow in autumn. RANGE: N.B. through the Gt. Lakes region and southw. to Tex., s. to Ga. on the mts. This stately tree, also called Basswood, Lime-tree and White-wood, is a favorite with the bees on account of its honey scented flowers in May and June. They perfume the air for many yards around. DOWNY BASSWOOD (*Tilia Michauxii*) has smaller leaves with dense gray down on the under surface. A small, straggling tree, from Long Island to n. Fla. and Tex. WHITE BASSWOOD (*Tilia heterophylla*) has very large, unsymmetrical leaves, the undersides silvery downy. Appalachians from s. N. Y. to Ala. and w. to s. Ill.

## BLACK GUM

(*Nyssa sylvatica*)

BARK light brown tinged with red or dark brown or nearly black, smooth even in old age or sometimes becoming deeply furrowed. BRANCHES short, with spur-like short twigs. LEAVES thick, shining, turning a brilliant maroon brown in autumn. BERRY solitary or twin. RANGE: Me. to Fla. and Tex., w. to n. Ind. and Mo. This curious tree, which inhabits the lower slopes of the s. Appalachians as well as swamps and savannahs near the coast, is often hollow in old age, a favorite hide-out of raccoon and opossum. TUPELO (*Nyssa aquatica*) is a swamp tree with the same range as Bald Cypress, and, like it, has usually a much swollen butt and very spongy great roots. It differs from the preceding in the thicker twigs, larger leaves, and blue, not purple-black, fruit.



Black Gum





*Eastern Dogwood*

## EASTERN DOGWOOD

(*Cornus florida*)

SHAPE very broadly round- or flat-topped, up to 40 ft. tall. TRUNK slender, short, inclined to lean or twist. BARK black and roughish. LEAVES clustered toward the ends of the erect up-curved twigs. FLOWERS consisting in many little green florets enclosed in the 4 big, petal-like, greenish or white (or, exceptionally, pinkish) bracts. March-May. RANGE: Me. and Que. w. to Minn., s. to Fla. and Tex. The bark has been used as a substitute for quinine. This enchanting little tree, best developed in the s. Appalachians, unfolds its great starry blossoms while the leaves are yet small. WESTERN DOGWOOD (*Cornus Nuttallii*) is a taller tree with broader leaves, the undersides downy, the bracts ("petals") even more showy, and 4-6 in number. It ranges from B. C. to s. Calif.

## PACIFIC MADROÑA

(*Arbutus Menziesii*)

BARK on young trees and branches reddish, peeling off; on old trunks reddish-brown. LEAVES 3-4 in. long, evergreen, thick, smooth and glistening above, the undersides pale with a bloom. FLOWERS in branched clusters, 5-6 in. long, in spring. FRUIT bright orange red, pulpy and seedy, often seen on the tree at the same time as the flowers. RANGE: B. C. to mts. of Calif. This superb ornamental tree sometimes rises to 100 ft. in the damp coastal forests, the brilliant fruit and graceful flowers waving at the summit. ARIZONA MADROÑA (*Arbutus arizonica*) is a much smaller tree, with light gray or nearly white bark, shorter leaves, and shorter, thick clusters of flowers. Fruit dark orange red. The contrast between the white bark, red branches and pale green foliage is very lovely.



*Pacific Madroña*





Holly

## HOLLY

(*Ilex opaca*)

SHAPE with narrowly pyramidal top, 40-50 ft. tall. TRUNK short. BARK smooth, gray mottled with whitish. LEAVES evergreen, thick, paler beneath, occasionally without the usual spiny teeth. BERRIES red or rarely yellow. RANGE: Gulf States n. to Mo. and s. Ind. and up the coast plain to s. Mass; reaches the Blue Ridge in the Carolinas and Ga. This lovely little tree is in great danger of extermination owing to the demands of a relentless Christmas trade. It is now rare in a wide radius of all cities and large towns. YAUPON (*Ilex vomitoria*) is a pretty little evergreen tree, very like holly, the leaf margins toothed but never spiny. Related to the Paraguay tea, Yerba Maté, its leaves when boiled yield a tea more valuable medicinally than pleasant to drink, though Indians used to travel far to obtain it. Gulf States n. to Ark. and along the coast to s. Va.

## VIRGINIA PERSIMMON

(*Diospyros virginiana*)

SHAPE with a round topped head; up to 115 ft. tall. BARK dark brown or black or gray, covered with warty, corky, rectangular plates. LEAVES rather thick, shiny above, pale and often downy beneath, turning deep claret in fall. FLOWERS thick petaled with an odor like Gardenia, the sexes on separate trees. FRUIT at first green, hard, and astringent, becoming amber or ruddy about the time of the first frosts, soft and edible. RANGE: s. Conn. to Fla. and e. Tex., Ozarks and Ia. Scarcely n. of the Ohio. The heartwood is nearly black, much valued for tools on account of its hardness. Only when thoroughly soft, if at all, are the fruits edible. The opossum is notoriously fond of them. BLACK PERSIMMON (*Diospyros texana*) differs in having leaves broadest near the end. The fruit, called Chapote, which has a black skin and thin insipid flesh, yields a black dye. w. Tex. and Mex.



Virginia Persimmon





White Ash

## WHITE ASH

(*Fraxinus americana*)

SHAPE broadly round topped. TRUNK massive. BARK light gray, deeply and regularly furrowed, with narrow braiding ridges. BRANCHES ascending, the lower often long and finally drooping. TWIGs stout, smooth, brittle, greenish gray. BUDS rusty. LEAVES of 5-9 stalked leaflets, silvery below, turning yellow or purple in autumn. RANGE: N. S. to w. Ont., and Minn., e. Neb., Kan., Okla. and Tex., s. to n. Fla. A superb shade tree, it is also one of the most valuable of our timber trees. Its wood is heavy, strong, and white, in demand for tools. BLUE ASH (*Fraxinus quadrangulata*) is a slender tree with 4-angled twigs, slender leaflets with coarse teeth, and flowers containing both sexes. A slender tree, to 120 ft. tall, it is a good timber species and the bark yields a blue dye. Mich. to Ark. and Ala. OREGON ASH (*Fraxinus oregona*). Leaflets not stalked. A lofty tree with valuable wood. Mts. Wash. to s. Calif.

## CATALPA

(*Catalpa bignonioides*)

SHAPE round topped, up to 50 ft. tall. BARK silvery gray, only slightly furrowed, finally with ribbon-like scales. BRANCHES few. TWIGs stout. LEAVES 6-7 in. broad, downy beneath, very late in appearing and early turning dull brown and dropping. FLOWERS in beautiful upright clusters, the petals marked with gold and purple spots, exhaling a heavy fragrance. PODS persistent almost through the winter on the leafless twigs. RANGE: near the coast through the Gulf States. Widely planted and naturalized elsewhere. This tropical looking tree is lovely at flowering time. Honey from its flowers is reputed to be poisonous. CIGAR TREE (*Catalpa speciosa*) is much taller (up to 100 ft.) with thicker trunk and thick, strongly furrowed bark; flowers larger, but pure white. Mississippi valley from s. Ill. to Ark. and Tenn.



Catalpa



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