

KENTUCKY COFFEETREE

Gymnocladus dioica



The Kentucky coffeetree is easily recognized by its massive bipinnately compound leaves in the summer and by its bold outline in the winter. It can be found throughout Ohio but is primarily located in the alkaline soils of the western half of the state. As a member of the bean family, Kentucky coffeetree is related to redbud, honeylocust, black locust, and wisteria. Kentucky coffeetree prefers deep, moist, alkaline soils, but thrives almost anywhere it is planted, except for permanently wet soils. It is very tolerant to many stresses, including heat, drought, poor soils, compacted soils, high pH soils, occasional brief flooding, and air pollution. Its geographic range has been extended due to the extensive planting of this species in parks along the east coast.

LEAF: Alternate, bipinnately compound, 12-36 inches long, and composed of alternately arranged leaflets up to 3 inches long.

TWIGS AND BUDS: Twigs are stout, brown, with a thick salmon-colored pith. Large, heart-shaped leaf scars have one or two small lateral buds that are barely visible above the leaf scars. The terminal bud is absent.

FRUIT OR SEED: A flat thickened pod, 3-8 inches long and reddish-brown in color, contains six or more dark brown lima bean-sized seeds imbedded in a sticky pulp, and ripen in late summer.

BARK: Bark is gray, deeply furrowed into narrow scaly ridges. Salmon color on the underside of plates that curl from the side.

MATURE HEIGHT: 70-80 feet.

1

EASTERN WHITE PINE

Pinus strobus



This enormous, long-lived evergreen is widely planted throughout the state, although it is native only to northeast Ohio. The native conifer is logged for production of lumber and paper pulp. The eastern white pine is also planted and sold as a cut Christmas tree. White pines provide thermal cover for wildlife during winter, nesting sites for birds, and seeds for squirrels and birds. This tree prefers acidic, moist, well-drained soils and full sun, often intolerant of alkaline and poorly drained soils. As a result, the eastern white pine is susceptible to damage in urban settings and suffers from white pine blister rust as well as attacks from white pine weevils. This tree is susceptible to pine bark adelgid, particularly in overly dense plantations.

LEAF: Soft, thin blue-green needles 3-5 inches long occur in unique bundles of five. Needles remain on trees for 18 months, then turn yellow and drop in autumn.

TWIGS AND BUDS: Horizontal branching, thin, breakable brown-green twigs. Branches in whorls with each whorl representing a different year of growth.

FLOWER: Cylindrical yellow male flowers near branch tips fertilize light green females at ends of branches.

FRUIT OR SEED: 6-inch elongated cones are fully mature by summer.

BARK: Gray-green, smooth when young, then develops dark gray or brown ridges and furrows.

SHAPE: Irregular, pyramidal crown.

MATURE HEIGHT: 80-120 feet.

2



**SIMPLE
ALTERNATE**

GINKGO
Ginkgo biloba



- Family:** Ginkgo (Ginkgoaceae)
- Height:** 40-60' (12-18 m)
- Tree:** pyramid shape, single straight trunk and narrow tapering crown
- Leaf:** simple, fan-shaped, 1-3" (2.5-7.5 cm) wide, alternately attached, 1 or more notches along margin, shallow irregular teeth, no midrib, veins straight and parallel (sometimes forked)
- Bark:** gray, irregularly rough with many furrows
- Fruit:** foul-smelling yellow fruit with thick, fleshy outer coat when ripe, 1" (2.5 cm) in diameter, on a long thin fruit stalk
- Fall Color:** yellow
- Origin/Age:** non-native, introduced from eastern China; 100-150 years
- Habitat:** well-drained soils
- Range:** throughout, planted in yards, parks, along roads, not found growing in the wild

Stan's Notes: The Ginkgo is the sole surviving species from an ancient family of trees that flourished millions of years ago. Because the surviving trees were cultivated only in ancient temple gardens in China, the species remained unknown to the science community until the late 1700s. Only the male trees are sold and planted since female trees produce butyric acid, which makes the fruit smell foul. Ginkgo fruit has been highly prized by some people for medicinal properties. Its leaves are often in two lobes, hence the species name *biloba*. Also called Maidenhair-tree because the unique fan-shaped leaves resemble the fronds of the Maidenhair Fern plant.

3

FAMILY BEAN

HONEYLOCUST
Gleditsia triacanthos



This native tree is distributed throughout the state, commonly found along fencerows, in open fields, and along streams or river floodplains. Also known as thorny-locust, this long-lived tree is commonly planted as a shade tree (thornless variety) prized for its urban tolerance, filtered shade, and fast growth. Honeylocust is named for the sweet, honey-like substance found in its pods. Flowers are good for pollinators. It can adapt to a wide range of soil types, soil pHs, and moisture levels and is tolerant to many environmental stresses. Several major pests and pathogens such as trunk and root canker, webworms, mites, galls, and borers can cause significant problems to honeylocust, especially when many trees are planted in close proximity to one another, weaken-

ing trees after successive years of repeated infestation. Mixed plantings of diverse tree species discourage the rapid spreading of such problems.

LEAF: About 7-10 inches long, pinnately compound and often bipinnately compound. Leaflets up to 1½ inches long are oval, shiny dark green above and dull yellow-green below. Bipinnate leaves have four to seven pairs of pinnae, each with as many as 28 leaflets.

TWIGS AND BUDS: Twigs are slender, zigzag, and shiny, greenish-brown to reddish-brown in color, often covered with 2-4 inch branched thorns.

FRUIT OR SEED: Fruit is a flat brown seed pod resembling twisted leather straps, 7-15 inches long, sometimes reaching up to 18 inches in length. Both the pods and the large seeds are consumed by wildlife such as rabbits, deer, squirrels, and birds.

BARK: Dark brown or gray, divided in flat narrow plates. Long thorns can be found on the trunk.

SHAPE: Proportional spread to height.

MATURE HEIGHT: 50-70 feet.

4

FAMILY HORSECHESTNUT

OHIO BUCKEYE

Aesculus glabra



The official state tree of Ohio, the Ohio buckeye's name comes from the appearance of its seed, which resembles the eye of a buck deer. The bitter seeds are poisonous to humans if consumed in large quantities, but not to wildlife including squirrels and deer. This deciduous native tree is found primarily as a smaller understory tree in western Ohio but is scattered throughout eastern portions of the state, reaching up to 60 feet in height in the open. The Ohio buckeye prefers moist, well-drained soils of variable pH in partially sunny to partially shaded conditions. Its light, soft wood was historically used for pulpwood, woodenware, and the production of artificial limbs.

LEAF: Opposite, 4-6 inches wide, palmately compound with five long, narrow leaflets attached at a common point. They are very prone to scorching, discoloration, and leaf diseases, often resulting in a brown, fall-like appearance to foliated canopy in summer if they are not nearly defoliated. This tree is one of the first to leaf out in spring and one of the first to lose its leaves in the fall.

TWIGS AND BUDS: Dormant buds can resemble those of yellow buckeye, but up close they feature overlapping scales that resemble the keel of a boat. Large terminal buds a good identifier of this tree. Twigs are stout and odorless when scratched; end branches typically curve upwards.

FLOWER: Showy, yellow-green flowers which emerge in early spring in short clusters with long, extending stamens.

FRUIT OR SEED: Spiny or warty fruit capsules usually contain one to three dark-brown, shiny nut-like seeds that each feature a characteristic pale basal scar or eye.

BARK: Variable, but broken into subtle flaky ridges, fissures, and long, warty plates with age. Light gray to light brown in color, without the rectangular platy appearance of yellow buckeye.

SHAPE: Rounded.

MATURE HEIGHT: 40-60 feet.

5, 6

CONIFER

FAMILY PINE

AUSTRIAN PINE

Pinus nigra



This hardy pine is native to Europe, including Austria for which it is named, and was extensively planted in the Midwest since its introduction in the late 1700s. Austrian pine is known for its bold texture, fullness of foliage, and dark-green needles. Unfortunately, Austrian pine is prone to a number of insect and disease issues, including diplopedia tip blight, a disease which initially infests stems and needles at tips of branches and slowly kills trees over several years. This disease can wreak havoc in mass plantings as it spreads from a single infection to surrounding trees.

LEAF: Dark green needles occurring in two per bundle, usually 6 inches in length, stiff, thick, and will not break when bent; lasting four to eight years on stout twigs and branchlets.

TWIGS AND BUDS: Twigs are stout, brown to gray in color with a large white, oval-shaped terminal bud.

FRUIT OR SEED: Brown cones are oval shaped, 3 inches long and have small prickles on the backsides of the scales.

BARK: Immature bark is covered by a thick lower canopy of evergreen branches. Once sunlight hits the bark of the mature trees it takes on a checkered appearance. Furrows are darker brown to black and broad flattened ridges range from light gray to light brown to chalky white.

SHAPE: Spreading and open, usually flat-topped.

MATURE HEIGHT: 50-70 feet.

7

SIBERIAN ELM

Ulmus pumila



This deciduous tree is native to eastern Asia and has been planted extensively since being introduced to the U.S. in the 1860s in urban areas as windbreaks. It is known for its hardiness, fast growth, and ability to grow in various moisture conditions. Unfortunately, Siberian elm can be invasive and spread rapidly. Siberian elm is extremely drought and cold resistant, growing well in poor sites where other trees cannot. It forms dense thickets that close open areas and displace native vegetation, reducing forage for wildlife and livestock. Though Siberian elm is still sold commercially, it should not be planted because it is invasive.

LEAF: Alternate, simple, elliptical to ovate in shape, measuring up to 2½ inches long with singly serrated margins and nearly equilateral base. Dark green and smooth above with paler green undersides.

TWIGS AND BUDS: Slender, zigzag, silvery gray-ish-green in color. Small buds are reddish-gray in color.

FRUIT OR SEED: Thin, nearly rounded wafer-like winged fruit that is notched at top, initially pale green and later turning light brown when ripe in spring. The wings on the fruit aid in seed dispersal by wind.

BARK: Irregularly furrowed, ridged, light grayish brown, often streaked with lighter stains caused by slime flux (a bacterial disease also called wet wood).

SHAPE: Round.

MATURE HEIGHT: 50-70 feet.

8



BLACK WALNUT

Juglans nigra

COMPOUND
ALTERNATE



Family: Walnut (Juglandaceae)

Height: 50-75' (15-23 m)

Tree: straight trunk, open round crown

Leaf: compound, 12-24" (30-60 cm) length, alternately attached, composed of 15-23 stalkless leaflets (sessile), each leaflet 3-4" (7.5-10 cm) long, with pointed tip, last (terminal) leaflet often smaller or absent, middle leaflets larger than on either end, fine-toothed margin, yellowish green and smooth above, slightly lighter and hairy below

Bark: brown to black, becoming darker with age, deep pits and flat scaly ridges

Flower: catkin, 2-4" (5-10 cm) long, composed of many tiny green flowers, ¼" (.6 cm) wide

Fruit: fleshy green fruit, round, 1-2" (2.5-5 cm) wide, in clusters, aromatic green husk surrounding a hard dark nut that matures in autumn, nutmeat sweet and edible

Fall Color: yellowish green

Origin/Age: native; 150-175 years

Habitat: well-drained rich soils, shade intolerant

Range: throughout

Stan's Notes: One of six species of walnut native to North America. Valued for its wood, which doesn't shrink or warp and is used to build furniture and cabinets. An important food source for wildlife. Fruit husks contain a substance that stains skin and were used by pioneers to dye clothing light brown. Twigs have a light brown chambered pith (see inset), unlike dark brown pith of Butternut (pg. 221). Fallen leaves and roots produce juglone, a natural herbicide.

9

CRAB APPLE*Malus spp.***Family:** Rose (Rosaceae)**Height:** 10-20' (3-6 m)**Tree:** single crooked trunk, broad open crown**Leaf:** simple, oval, 2-3" (5-7.5 cm) in length, alternately attached, sometimes with shallow lobes, double-toothed margin, dark green above, lighter-colored and usually smooth or hairless below**Bark:** gray, many scales, with 1-2" (2.5-5 cm) long stout thorns often on twigs**Flower:** 5-petaled white-to-pink or red flower that is often very showy, 1-2" (2.5-5 cm) wide**Fruit:** apple, ranging in color from green and yellow to red, edible, 1-3" (2.5-7.5 cm) diameter, single or in small clusters, hanging from a long fruit stalk well into winter**Fall Color:** yellow to red**Origin/Age:** native and non-native; 25-50 years**Habitat:** wide variety of soils, sun**Range:** throughout, often around cities or old home sites

Stan's Notes: Many species of cultivated Crab Apple can be found throughout the state. Others have escaped cultivation and now grow in the wild. Introduced to the U.S. in colonial times. Has since bred with native species, producing hybrids that are hard to identify. Now found throughout the country. Apples are closely related to those sold in grocery stores and have been used in jams and jellies. Cider is often made from the more tart apples. Fruit is an important food source for wildlife. Twigs often have long stout thorns, which are actually modified branches known as spur branches.

FRUIT

BARK

FLOWER

NORWAY MAPLE
Acer platanoides**Family:** Maple (Aceraceae)**Height:** 40-60' (12-18 m)**Tree:** single straight trunk, dense round crown**Leaf:** lobed, 5-7" (12.5-18 cm) in length, oppositely attached, 5-7 lobes, shallow notches and a wavy margin, exudes milky sap when cut, shiny dark green above, light green below**Bark:** dark gray in color with many narrow furrows and interlacing ridges**Flower:** large green flower, 1/2-3/4" (1-2 cm) wide, on a 1-2" (2.5-5 cm) long green stalk**Fruit:** pair of widely spread winged seeds (samara), 1-2" (2.5-5 cm) long**Fall Color:** yellow, orange**Origin/Age:** non-native, introduced to the U.S. from Europe; 100-125 years**Habitat:** well-drained rich soils**Range:** throughout, planted along streets and in parks**Stan's Notes:** This introduced species, most commonly seen along streets and in parks, has spread to wild environments and is doing well. Considered to be one of the most disease- and insect-resistant species of maple and a potential pest species that could outperform the widely prevalent native maples. While leaves are similar to those of Sugar Maple (pg. 143), several Norway Maple varieties have red or purple leaves. Leaves, buds and twigs exude a milky sap when cut. Winged seeds are more widely spread than those of Sugar Maple or Silver Maple (pg. 147). Common name implies it was introduced from Norway.

FRUIT

BARK

FLOWER

Japanese tree lilac

Japanese tree lilac is larger than the shrub lilacs and it blooms a little later. It produces large clusters of small creamy-white, fragrant flowers.

This plant has some cultivated varieties.

Botanical name: *Syringa reticulata* subsp. *reticulata*

All Common Names: Japanese tree lilac

Family (English): Olive

Family (Botanic): Oleaceae

Planting Site: Residential and parks, City parkway, Wide median, Restricted sites

Tree or Plant Type: Tree

Foliage: Deciduous (seasonally loses leaves)

Native Locale: Non-native

Landscape Uses: Parkway/street, Patio/sidewalk, Shade tree, Specimen

Size Range: Medium tree (25-40 feet), Small tree (15-25 feet)

Mature Height: 20-30 feet

Mature Width: 15-25 feet

Light Exposure: Full sun (6 hrs direct light daily)

Hardiness Zones: Zone 3, Zone 4, Zone 5 (Chicago), Zone 6, Zone 7



WHITE OAK

Quercus alba



This large native tree is one of the most important hardwoods found in Ohio and features some of the best fall colors among oaks. Its strong, waterproof wood is used for lumber, railroad ties, flooring, and furniture. White oak wood is also favored for barrel production. White oak acorns are a popular food source for wildlife, and are eaten, stored, and gathered by rodents, birds, and deer. Found in a range of habitats across the state, the white oak prefers full sunlight and deep, well drained, acidic to neutral soil.

LEAF: Alternate, slightly obovate, 5-9 inches long. Leaf shape is highly variable but often narrows at the base to create a wedge shape at the stem and consists of seven to nine finger-like rounded lobes. Lobes differ greatly in their width and length.

TWIGS AND BUDS: Buds are small and rounded, with a cluster of relatively large terminal buds.

FRUIT OR SEED: Acorns are about 1 inch long, chestnut-brown and enclosed at the end in a bowl-shaped, warty-scaled cup with a stalk.

BARK: Highly variable bark may be ridged, deeply furrowed, have small vertically aligned blocks or scales, and is light gray color.

SHAPE: Spreading.

MATURE HEIGHT: 70-100 feet.

Littleleaf Linden

Tilia cordata

Height: 60' to 80' (45' at age 30)
Width: 35' to 55' (30' at age 30)
Hardiness Zone: 3 to 7

Crown: conical in youth, changing to ovate, dense branching, medium texture
Foliage: 1½" to 3", heart shaped, dark shiny green; in fall yellow-green or yellow
Flowers: yellowish, pendulous clusters, very fragrant and attractive to bees
Fruit: globose nutlets with bracts

Description: This species, native to Europe, is popular as a street tree in many countries. The name littleleaf has misled some into thinking the tree is small, but it is not. The bark is gray brown, and becomes furrowed with age.

Advantages: A fine shade tree for streets, parking lots, and spacious lawns. More tolerant of heat and compacted soil than *T. americana*. Adapts well to above-ground planters and other stressful conditions.

Limitations: Despite susceptibility to various insects and diseases, control measures are seldom needed. Defoliation by Japanese beetles, caterpillars, or linden looper is common. Aphids exude a sticky fluid. Other insect damage is caused by mites, scales, and the walnut lacebug. Susceptible to cankers and mildew. Bark splits after sunscald may be caused by understock that lacks vigor.

Site and Culture: Grows best on deep, fertile soils, but broadly adaptable to pH, compaction, and full sun to partial shade. Somewhat sensitive to drought and salt. Transplants readily. May require occasional pruning of basal sprouts.

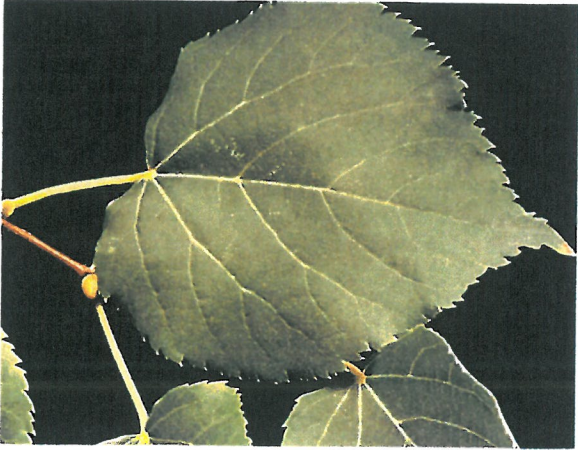
Cultivars: Many cultivars have been selected for superior branching, vigor, foliage, and crown form. These are preferable to trees grown from seed, which are highly variable.



Littleleaf Linden



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