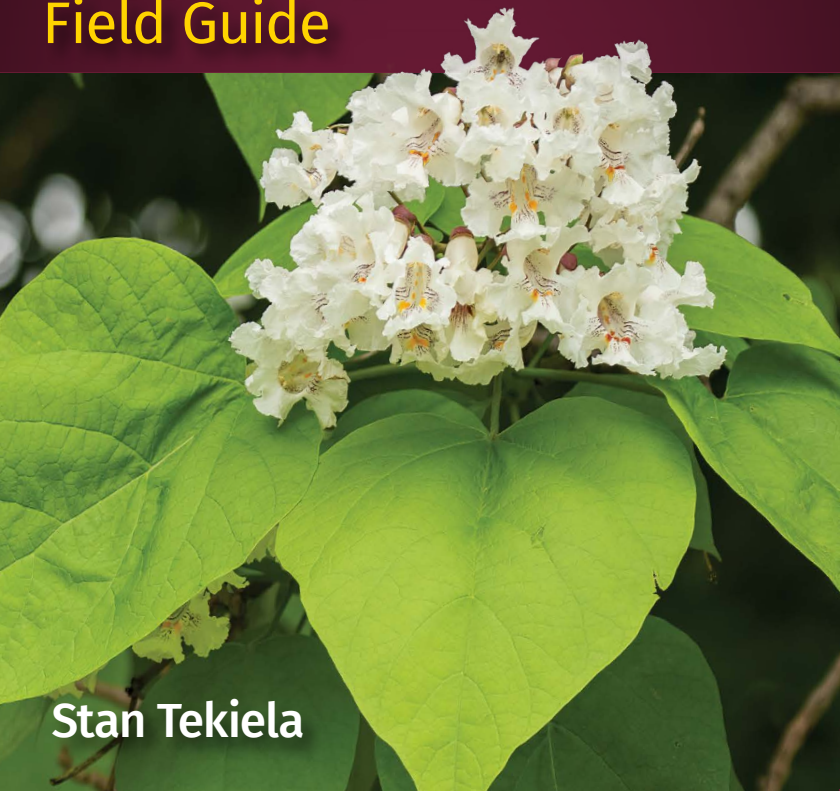


2ND EDITION

Trees *of* Illinois

Field Guide



Stan Tekiela

Trees that have single needles	pg. 35
Trees that have clustered needles	pg. 47
Trees that have scaly needles	pg. 59
Trees that have simple, oppositely attached leaves	pg. 63
Trees that have simple, alternately attached leaves	pg. 75
Trees that have lobed, oppositely attached leaves	pg. 169
Trees that have lobed, alternately attached leaves	pg. 183
Trees that have compound, oppositely attached leaves	pg. 219
Trees that have compound, alternately attached leaves	pg. 233
Trees that have twice compound, alternately attached leaves	pg. 271
Trees that have palmate compound, oppositely attached leaves	pg. 277



TABLE OF CONTENTS

Introduction	6
Silhouette Quick Compares	15
Needle and Leaf Quick Compares	21
Sample Page	32–33
The Trees	
Single needles	35
Clustered needles	47
Scaly needles.	59
Simple, oppositely attached leaves	63
Simple, alternately attached leaves	75
Lobed, oppositely attached leaves.	169
Lobed, alternately attached leaves.	183
Compound, oppositely attached leaves	219
Compound, alternately attached leaves.	233
Twice compound, alternately attached leaves	271
Palmate compound, oppositely attached leaves	277
Glossary	282
Checklist/Index	287
About the Author	290

LEAF BASICS

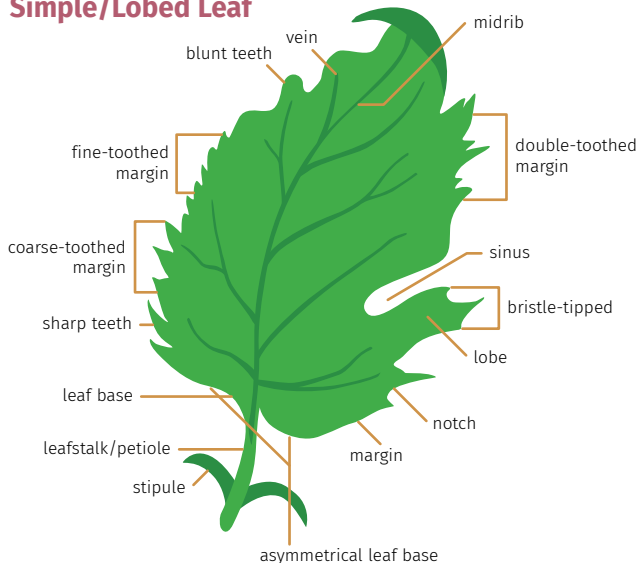
It's easier to identify trees and communicate about them when you know the names of the different parts of a leaf. For instance, it is more effective to use the word “sinus” to indicate an indentation on an edge of a leaf than to try to describe it.

The following illustrations show coniferous needles in cross section and the basic parts of deciduous leaves. The simple/lobed leaf and compound leaf illustrations are composites of leaves and should not be confused with any actual leaf of a real tree.

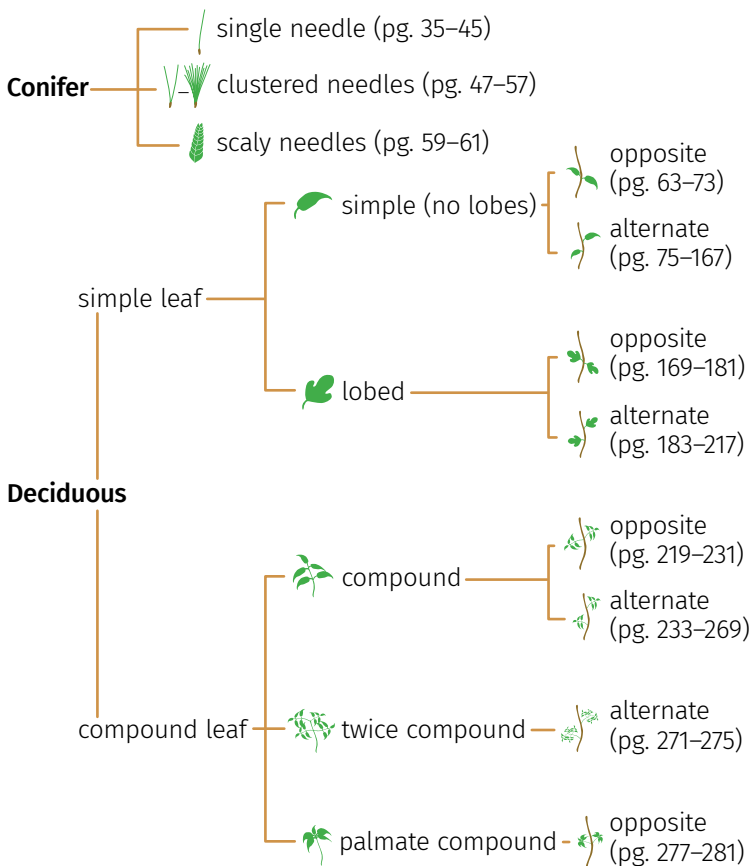
Needle Cross Sections



Simple/Lobed Leaf



FINDING YOUR TREE IN A SECTION



The smaller needles and leaves tend to be toward the front of each section, while larger sizes can be found toward the back. Check the icon in the lower right corner of text pages to compare relative shape.

A photograph of a pine branch with green needles and two brown cones. The branch is covered in dense, green, needle-like leaves. Two brown, cone-shaped structures are visible, hanging from the branch. The background is a blurred green, suggesting a forest setting.

cone

A close-up photograph of tree bark. The bark is dark brown and has a rough, textured appearance with vertical ridges and grooves.

bark



Norway Spruce

Picea abies

SINGLE
NEEDLE



Family: Pine (Pinaceae)

Height: 50–70' (15–21 m)

Tree: pyramid shape, single trunk, branches drooping or weeping

Needle: single needle, ½–1" (1–2.5 cm) long, with a slight curve, stiff and pointed, square in cross section, aromatic when crushed, deep blue-green

Bark: reddish gray, many round scales

Cone: straw brown, papery, 2–7" (5–18 cm) long, hangs from branch

Origin/Age: non-native, introduced to the U.S. from Europe and Asia; 150–200 years

Habitat: rich moist soils, sun

Range: throughout, planted as windbreaks, in cemeteries, parks and yards

Stan's Notes: The fastest growing and tallest spruce in Illinois, popular for planting as windbreaks. Produces the largest cones of all spruces. Generally a very healthy tree with few diseases. Sometimes has deformed cones, caused by Cooley Spruce Gall Adelgids (aphid-like insects) chewing on its new growth. Introduced from Europe, as the common name implies, it is the dominant tree species in the Black Forest area of Germany. One of the earliest trees used for reforestation in North America. The bark on the twigs is orange, turning reddish brown on the small branches. The trunk oozes a pitch known as burgundy pitch, which has been used in varnishes and medicine. Many horticultural varieties of this tree are available.



bark

cone



Tamarack

Larix laricina

CLUSTERED
NEEDLES



Family: Pine (Pinaceae)

Height: 40–70' (12–21 m)

Tree: cone shape, single straight trunk, narrow crown

Needle: clustered needles on any twigs and branches older than 1 year, 12–30 per cluster, $\frac{3}{4}$ –1 $\frac{1}{4}$ " (2–3 cm) long, single needles on current year's growth; each needle is soft, pointed, triangular in cross section, light green

Bark: gray when young, reddish brown and flaky scales with age

Cone: light brown, round, $\frac{1}{2}$ –1" (1–2.5 cm) diameter, on a short curved stalk

Fall Color: bright golden yellow

Origin/Age: native; 100–150 years

Habitat: wet soils, swamps, bogs, occasionally in uplands, sun

Range: scattered in the northern quarter of Illinois, planted throughout in parks

Stan's Notes: Like the Bald Cypress (p. 44), this is a deciduous conifer. A highly unusual species because it sheds its leaves (needles) in autumn (deciduous). Turns bright golden yellow in the fall before shedding its needles. One of the northernmost trees in North America and also the world. Almost always grows in wetlands but can also be planted as an ornamental in yards. Also known as Eastern Larch or American Larch. Larch Sawfly larvae eat the needles and in some years can defoliate entire stands of Tamarack. The roots of this tree have been used for lashing wooden slats together.



mature
cone

immature
cone

bark



Eastern Whitecedar

Thuja occidentalis

SCALY
NEEDLES



Family: Cypress (Cupressaceae)

Height: 30–50' (9–15 m)

Tree: pyramid shape, single or multiple trunks are often crooked or twisted, blunt or pointed dense crown

Needle: scaly needles, 1–2" (2.5–5 cm) long, made of scale-like needles, ¼" (.6 cm) long, that overlap each other; each scale-like needle is soft, with a rounded tip, flat in cross section, light green

Bark: gray and fibrous with shallow furrows, peeling in long strips

Cone: green, turning bluish purple with a white dust-like coating, then light brown at maturity, ½" (1 cm) long, upright in clusters, containing 2 tiny winged nutlets (seeds)

Origin/Age: native; 150–200 years (some reach 800 years)

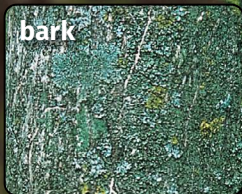
Habitat: moist or wet soils, often in pure stands

Range: scattered in isolated locations in northern Illinois, planted in parks and yards

Stan's Notes: A common tree of bogs and swamps, and a favorite food of deer during winter. Slow growing but with a very long life, with some trees over 700 years old. Also known as Northern Whitecedar, Eastern Thuja or Eastern Arborvitae. The common name "Arborvitae," meaning "tree of life," may have come from French voyagers who used whitecedar to treat scurvy, a disease resulting from a lack of vitamin C. The lightweight wood was once used for canoe frames. One of only two species of *Thuja* in North America, it was introduced into Europe by the mid-1500s. More than 100 different varieties are now known for this tree.



bark



flower



fruit





Eastern Wahoo

Euonymus atropurpureus

SIMPLE
OPPOSITE



Family: Staff-tree (Celastraceae)

Height: 20–25' (6–7.5 m)

Tree: single or multiple trunks, irregular crown

Leaf: simple, oval, 2–5" (5–12.5 cm) long, oppositely attached, pointed tip, fine-toothed margin, dull green with hairy underside

Bark: greenish gray with reddish-brown streaks, smooth

Flower: 4-parted purple flower

Fruit: 4-lobed capsule, turning pink to red at maturity, ½" (1 cm) long, containing 4 seeds

Fall Color: red

Origin/Age: native; 25–50 years

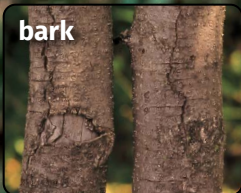
Habitat: moist soils, usually is found along streams, rivers and floodplains, partial shade

Range: throughout

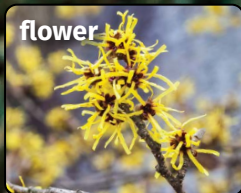
Stan's Notes: Also called Spindle Tree or Burning-bush *Euonymus*. This is the only *Euonymus* tree species that is native to the state. The pinkish capsules each contain four seeds, which have a fleshy covering. Capsules stay on the tree into winter, with the fleshy fruit and seeds providing a good food source for birds. Seeds are spread by birds. Twigs have distinctive corky ridges or wings. Over 150 species in the world, nearly all in Asia, with one tree and four shrub species in North America. Several of the shrubby *Euonymus* species that were introduced are also called Burning-bush.



bark



flower



fruit





Witch-hazel

Hamamelis virginiana

SIMPLE
ALTERNATE



Family: Witch-hazel (Hamamelidaceae)

Height: 20–30' (6–9 m)

Tree: small tree, multiple thin trunks are often crooked, spreading branches, broad open crown

Leaf: simple, oval to round, 3–6" (7.5–15 cm) in length, alternately attached, with pointed or rounded tip, asymmetrical base, irregular wavy margin, coarse teeth, dark green above, slightly lighter below

Bark: light brown, smooth, uniform, sometimes scaly

Flower: bright yellow flower, 4" (10 cm) long, thin, twisted petals, in clusters of 3, located at joint where leaf attaches to twig, blooms in autumn

Fruit: green capsule, turning orange and splitting open at maturity (autumn of the following year), $\frac{3}{4}$ –1" (2–2.5 cm) long, has 2 small shiny black seeds

Fall Color: yellow

Origin/Age: native; 30–50 years

Habitat: moist soils, understory of deciduous forests, shade

Range: throughout

Stan's Notes: The name "Witch" in Witch Hazel doesn't refer to witchcraft, but comes from an old English word "Wice" referring to a plant with bendable branches. "Hazel" comes from the leaves, which resemble those of the hazel shrub (*Corylus* spp.). Leaves, twigs and bark are aromatic and have been used as an astringent in medicinal washes. This species has an unusual flowering time: in the fall. Fruit develops the following summer and matures in autumn. Capsules remain on the tree for several years, even after the seeds drop to the ground.

underside

bark

flower

fruit



Silver Maple

Acer saccharinum

LOBED
OPPOSITE



Family: Maple (Aceraceae)

Height: 75–100' (23–30.5 m)

Tree: single trunk, ascending branches, open crown

Leaf: lobed, 4–6" (10–15 cm) long, oppositely attached, 5–7 lobes, pointed tips, deep notches and double-toothed margin, dull green above with a silvery white color below

Bark: gray and smooth when young, becomes furrowed, long scaly strips, often peeling and curling at ends

Flower: tiny red dangling flower, ¼" (.6 cm) wide, on 1–2" (2.5–5 cm) long stalk

Fruit: pair of green winged seeds (samara), turning to brown, 1–2½" (2.5–6 cm) long

Fall Color: yellow to orange

Origin/Age: native; 100–125 years

Habitat: wet to moist soils, often growing in pure stands in floodplains, shade

Range: throughout

Stan's Notes: Usually seen growing in bottomlands or floodplains along rivers, where it is often the dominant tree. This is one of the first trees to bloom (flower) in spring, confusing many to think it is budding early. Bark of older trees is characteristic, with long strips that often peel and curl at ends. Produces heavy seed crops. Also called Silver-leaf Maple for the silvery appearance of the underside of leaves, and Soft Maple, which is also another name of the Red Maple (pg. 173). This name refers to the brittle branches (which often break off in windstorms), rather than to the wood being soft. The wood is actually very hard with a tight grain.

fruit

bark

flower



White Oak

Quercus alba

LOBED
ALTERNATE



Family: Beech (Fagaceae)

Height: 50–70' (15–21 m)

Tree: single straight trunk, some gnarled and twisted
branches reach toward the ground, broad crown

Leaf: lobed, 4–8" (10–20 cm) long, alternately attached,
5–9 rounded lobes, notches deeply cut or shallow
and uniform in size and depth, often widest above
middle, lacking teeth, bright green above, paler
below, leaves often clustered at ends of branches

Bark: light gray, broken into reddish scales

Flower: green catkin, 1–3" (2.5–7.5 cm) long, composed of
many tiny flowers, ⅛" (.3 cm) wide

Fruit: green acorn, turns brown, edible, ½–1½" (1–4 cm)
long, cap covers the upper third of nut

Fall Color: red-brown

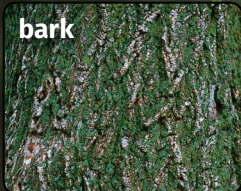
Origin/Age: native; 150–250 years

Habitat: variety of soils, sun

Range: throughout

Stan's Notes: The state tree of Illinois. A very important tree in the lumber industry, with its wood used for furniture, flooring, whiskey barrels, crates and much more. Similar to the Bur Oak (pg. 217), which has a single large terminal lobe unlike White Oak's finger-like lobes. Produces edible acorns each fall, with large crops produced every 4–10 years. Like all other acorns, these should be boiled in several changes of water to leach out the bitter and slightly toxic tannins before eating. Acorns are an important food source for turkeys, squirrels, grouse, deer and other wildlife. Susceptible to oak wilt, causing gradual death. Oaks in the white oak group can be treated for oak wilt, while red oak group trees die quickly from the disease.

fruit





Boxelder

Acer negundo

COMPOUND
OPPOSITE



Family: Maple (Aceraceae)

Height: 30–50' (9–15 m)

Tree: medium-sized tree, frequently with a divided and crooked trunk, broad irregular crown

Leaf: compound, 4–9" (10–22.5 cm) in length, oppositely attached, made of 3–5 leaflets, each leaflet 2–4" (5–10 cm) in length, often 3-lobed, irregular-toothed margin, pale green

Bark: light gray to tan, becoming deeply furrowed with wavy ridges

Flower: tiny reddish flower, ¼" (.6 cm) wide, growing on a 1–3" (2.5–7.5 cm) long stalk

Fruit: pair of green winged seeds (samara), turning to brown, 1–2" (2.5–5 cm) long

Fall Color: yellow

Origin/Age: native; 50–60 years

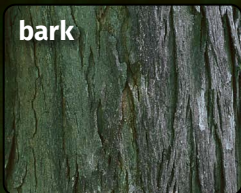
Habitat: wet, along streams, lakes and flooded areas, sun

Range: throughout

Stan's Notes: One of the most common trees in Illinois. Unique species among native maple trees because its leaves are compound. A member of the Maple family with all the virtues, but none of the respect. Frequently thought of as a trash tree, but it produces large amounts of seeds that stay on the tree during winter, making a valuable food source for wildlife. If the tree is tapped in spring, it will yield a sap that can be boiled into maple syrup. Since its sugar content is lower than that of the other maples, it takes more sap to make a comparable syrup. These trees are often covered with Boxelder Bugs, harmless beetles whose larvae eat the leaves but cause little damage. Also called Manitoba Maple or Ash-leaved Maple.



bark



fruit



twig pith





Shagbark Hickory

Carya ovata

COMPOUND
ALTERNATE



Family: Walnut (Juglandaceae)

Height: 40–60' (12–18 m)

Tree: medium-sized tree with single straight trunk and tall, narrow irregular crown

Leaf: compound, 8–14" (20–36 cm) in length, alternately attached, with 5 (rarely 7) pointed leaflets, each leaflet 3–4" (7.5–10 cm) long, widest at the middle, upper 3 leaflets larger than lower 2, fine-toothed margin, yellowish green, lacks leaflet stalk (sessile), attaching directly to central stalk (rachis)

Bark: gray in color, long smooth vertical strips curling at each end, giving it a shaggy appearance

Fruit: green nut, turning brown at maturity, inner kernel sweet, edible, round to oval, 1–1½" (2.5–4 cm) in diameter, single or in pairs, thick 4-ribbed husk

Fall Color: yellow

Origin/Age: native; 150–200 years

Habitat: rich moist soils, sun

Range: throughout

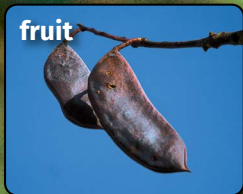
Stan's Notes: Also called Upland Hickory. Often found on hillsides that have rich moist soils, growing branch-free for three-quarters of its height. Its common name comes from the large scaly or "shaggy" bark. Also known as Shell-bark or Seal-bark Hickory. Hickories are divided into two groups: true hickories, which include Shagbark, and pecan hickories, which include Bitternut Hickory (pg. 245) and Pecan (pg. 259). Shagbark nuts are eaten by wildlife and people. Its extremely hard wood is used to make tool handles, skis and wagon wheels. Unlike the twigs of walnut trees, which have a light brown pith, twigs of this species have a white pith (see inset).



bark



fruit





Kentucky Coffeetree

Gymnocladus dioica

TWICE
COMPOUND
ALTERNATE



Family: Pea or Bean (Fabaceae)

Height: 40–60' (12–18 m)

Tree: single trunk, can be divided low, many crooked branches, open round crown

Leaf: twice compound, 12–36" (30–90 cm) long, alternately attached, made of many (up to 70) leaflets, each leaflet 2" (5 cm) long, lacks teeth, blue-green

Bark: brown and smooth when young, thin scales with edges curling out, breaking with age into plates

Flower: 5-petaled white flower, ¼–½" (.6–1 cm) diameter, on a single long stalk, in open clusters, 1–3" (2.5–7.5 cm) wide

Fruit: leathery green pod, turning reddish brown when mature, 4–10" (10–25 cm) in length, often covered with a whitish powder, containing 6–9 large seeds

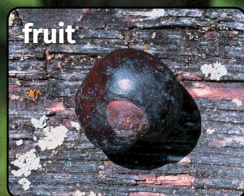
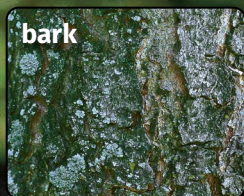
Fall Color: yellow

Origin/Age: native; 50–100 years

Habitat: deep rich soils, sun

Range: throughout, planted in urban sites, farms, parks, along roads

Stan's Notes: The leaves of this species are among the last to appear in spring and first to turn in fall. Common name comes from its coffee bean-like seeds in seedpods. The seedpods contain many dark seeds surrounded by a yellowish pulp that becomes soapy when wet. The bitter seeds are seldom eaten by wildlife and remain viable for several years. New trees sprout from roots of parent trees, often forming small colonies. The genus name *Gymnocladus* comes from the Greek for “naked branch,” which is how the branches appear.





Horse-chestnut

Aesculus hippocastanum

PALMATE
COMPOUND
OPPOSITE



Family: Soapberries (Sapindaceae)

Height: 40–60' (12–18 m)

Tree: medium-sized tree with single trunk that is often divided low, spreading round crown

Leaf: palmate compound, 5–10" (12.5–25 cm) in length, oppositely attached, composed of 5–9 (usually 7) leaflets, each leaflet 4–10" (10–25 cm) long, widest above the middle, radiating from a central point, with a sharp-toothed margin, hairy below when young, lacking hairs when mature

Bark: dark brown, many furrows and scales, inner bark orange-brown

Flower: white flower with yellow or orange center, ½–1" (1–2.5 cm) wide, upright in spike clusters, 8–12" (20–30 cm) long

Fruit: thick-walled leathery green capsule, rounded, 2" (5 cm) diameter, covered with pointed spines, in hanging clusters, splits in 3 sections, contains 1–3 smooth, non-edible, shiny chestnut-brown seeds

Fall Color: yellow

Origin/Age: non-native, introduced to the U.S. from Europe; 75–100 years

Habitat: wide variety of soils, sun

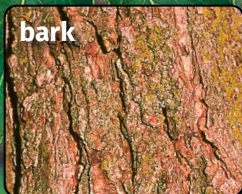
Range: scattered throughout, planted in parks and yards

Stan's Notes: Closely related to Ohio Buckeye (pg. 281). A remedy made from the seeds was used to treat cough in horses, hence its species and common names, *Hippos* ("Horse") and *kastanon* ("chestnut"). The chemical esculin has been extracted from its leaves and bark for use in skin protectants. Also called Chestnut.

fruit



bark



flower





Ohio Buckeye

Aesculus glabra

PALMATE
COMPOUND
OPPOSITE



Family: Soapberries (Sapindaceae)

Height: 20–40' (6–12 m)

Tree: single trunk, broad round crown with flat top

Leaf: palmate compound, 5–15" (12.5–37.5 cm) long, oppositely attached, composed of 5 leaflets, each leaflet 3–5" (7.5–12.5 cm) long, radiating from a central point, with fine irregular teeth, yellowish green above, pale and hairy below, sessile

Bark: brown with scaly patches, rough shallow furrows

Flower: green flower, ½" (1 cm) wide, growing upright in triangular clusters, 5–7" (12.5–18 cm) long, foul odor when crushed

Fruit: light brown spiny capsule, round, 1–2" (2.5–5 cm) wide, contains 1–2 shiny brown poisonous seeds

Fall Color: yellow to orange

Origin/Age: native; 100–125 years

Habitat: moist soils, river bottoms, sun to partial shade

Range: throughout, planted in parks, yards and along streets

Stan's Notes: Also known as Fetid Buckeye or Stinking Buckeye, referring to the foul odor of the flowers and most other parts of the tree when crushed. Grows naturally in moist areas. Planted as a landscape tree in dry upland areas for its attractive autumn foliage. Its large poisonous seeds are avoided by wildlife. A unique palmate leaf, the leaflets lack their own leafstalks, all rising instead from a central stalk. An extract from the bark was once used as a stimulant for the cerebrospinal system. Once thought a buckeye seed carried in the pocket would ward off rheumatism. Warty spines on its fruit capsules help distinguish it from Yellow Buckeye (pg. 279).



Tree Identification Made Easy

Now tree identification is simple and productive.

- **124 species:** Every native tree plus common non-natives
- **Easy to use:** Thumb tabs show leaf type and attachment
- **Compare feature:** Decide between look-alikes
- **Stan's Notes:** Naturalist tidbits and facts
- **Professional photos:** Crisp, stunning full-page images

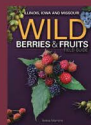
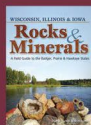
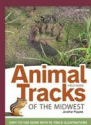
This 2nd Edition includes updated photographs; expanded information; a Quick Compare section for leaves, needles, and silhouettes; and even more of Stan's expert insights!



About the Author

Naturalist Stan Tekiela is an award-winning wildlife photographer and the author of many popular state-specific field guides. He has written educational books about wildlife, including children's books, quick guides, and more, presenting birds, mammals, reptiles, amphibians, trees, wildflowers, and cacti.

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PUBLICATIONS
Adventure
an imprint of AdventureKEEN

NATURE / TREES / ILLINOIS

ISBN 978-1-64755-378-4



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