

 Bulletin 899

# Leaf Identification Key to Eighty-Eight Ohio Trees



T · H · E  
OHIO  
STATE  
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EXTENSION

# Broadleaf

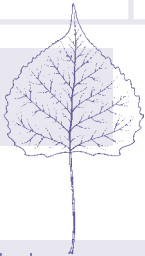
## Alternate

## Whorled J Page 17

### Simple

### Compound

Broad  
(Nearly as  
broad as long)

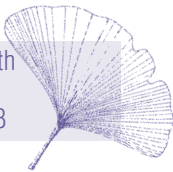


Medium to Narrow  
(Usually more than 1.5  
times longer than wide)



Not Lobed

Smooth  
A  
Page 8



Toothed  
B  
Page 8



Lobed  
C  
Page 9



Smooth  
D  
Page 9



Toothed  
E  
Page 10



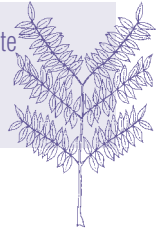
Lobed  
F  
Page 13



Pinnate  
G  
Page 15

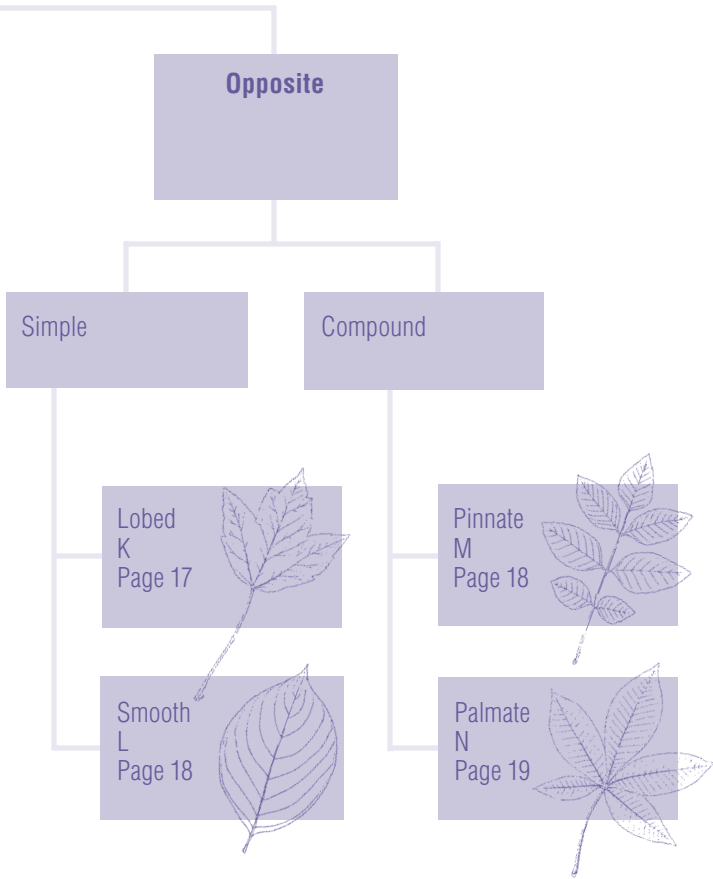


Twice Pinnate  
H  
Page 17



Trifoliate  
I  
Page 17





# Leaf Identification Key to Eighty-Eight Ohio Trees

## Authors

David K. Apsley  
Natural Resources Specialist  
South Centers at Jackson

Kathy L. Smith  
Extension Associate, Forestry  
School of Natural Resources

## Illustrations

provided by Aaron Apsley, pages 4-5

**Cover photo: Winged Sumac**



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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

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# Leaf Identification Key

## to Eighty-Eight Ohio Trees

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# Introduction

There are over 100 tree species that can be found in Ohio's forests. This guide is a tool that you can use to identify some of the more common and interesting forest trees of Ohio. The focus of this guide is leaf characteristics, but other characteristics such as bark and fruit are used occasionally to separate trees with similar leaves.

The purpose of this guide is to help the novice to look at trees in a different way and to learn the process of tree identification. Whether you are a student, hiker, bird watcher, woodland owner, or just interested in trees, this key will help you to begin your journey to tree identification. Once you learn the process, you will be better prepared to utilize more comprehensive keys and field guides. A list of field guides, textbooks, and other resources can be found on the last page of this document.

Every attempt was made to make this key as easy to use as possible. However, it was necessary to introduce some new terminology in order to be able to distinguish among the trees. The first and most important concept to understand is leaf arrangement. All of Ohio's trees can be placed into one of three categories: alternate, opposite, or whorled (Figure 1). Most tree species have alternate leaf arrangement. About one in eight are opposite. Only one species in this key, northern catalpa, is classified as whorled.

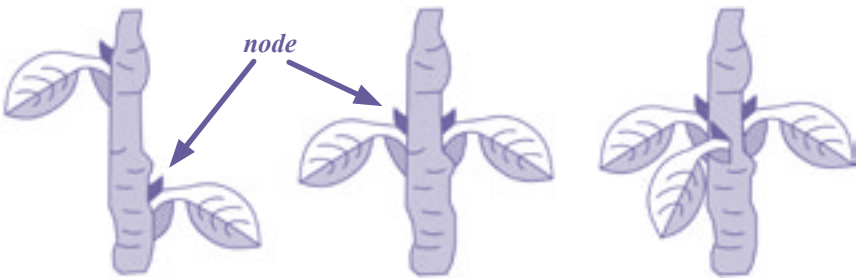


Figure 1. Leaf arrangement from left to right: alternate, opposite, and whorled.

**Hint:** To remember trees with opposite leaves think MAD Buck:

**M**aple

**A**sh

**D**ogwood

**B**uckeye

Another important concept to understand is simple and compound leaves. Simple leaves have a single leaf blade (Figure 2), while compound leaves consist of multiple leaflets (Figure 3). Three of the more common types of compound leaves are illustrated in Figure 4. A glossary of terms can be found on page 6.

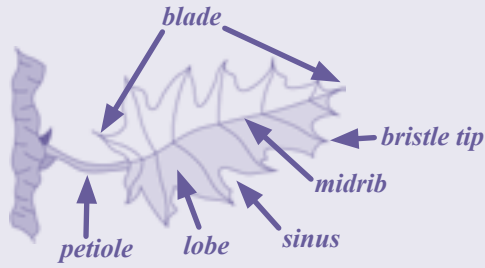


Figure 2. Parts of a simple leaf (red oak).

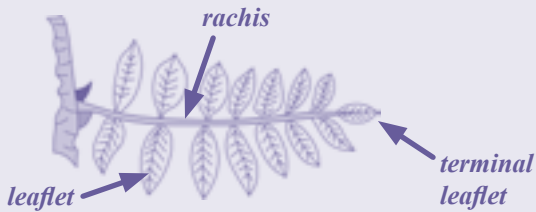


Figure 3. Parts of a compound leaf.



Figure 4. Compound leaves from left to right: pinnate, palmate, and twice pinnate.

# Glossary

**alternate**—only one bud or leaf found at each node (Figure 1)

**asymmetrical**—uneven or unequal

**blade**—the broad or expanded part of the leaf (Figure 2)

**broadleaf**—usually deciduous hardwood tree, as opposed to conifer

**bristle tip**—a small hair on the pointed tips of leaves (i.e., red oak group) (Figure 2)

**bud**—a structure containing dormant, beginning leaf or flower tissue

**bud scales**—protective, often overlapping structures, which cover dormant plant tissue

**chambered**—containing hollow opening

**compound**—having multiple leaflets on a common stalk (Figure 4)

**conifer**—evergreen, cone-bearing trees

**diaphragmed**—partitioned by membranous structures

**fruit**—the seed bearing organ of a plant, i.e., nut, berry, pome, etc.

**globular**—spherical in shape

**husk**—dry outer covering of fruits or seeds (i.e., walnuts and hickories)

**lance shaped**—narrow and tapering toward the tip

**leaf-scar**—mark left on twig where leaf was attached

**leaflet**—one of the blades or divisions of a compound leaf (Figure 3)

**lobed**—divided rather deeply

**margin**—leaf edge

**midrib**—central or middle vein on a leaf (Figure 2)

**needle**—a needle-shaped leaf, i.e., pine needle

**node**—place on twig that bears one or more leaves

**opposite**—two leaves found at each node (Figure 1)

**palmate**—with multiple leaflets, arranged in a pattern that resembles fingers radiating from a hand (Figure 4)

**parallel**—veins that extend in the same direction and do not cross.

**petiole**—stem supporting a leaf with a single blade (Figure 2)

**pinnate**—with multiple leaflets, arranged in a pattern that resembles a feather. Leaflets are attached to a central axis or rachis (Figure 4)



**pith**—center of stem or twig; often soft or spongy

**pubescent**—covered with short soft hairs

**rachis**—central stem of compound leaf to which leaflets are attached  
(Figure 3)

**serrate**—toothed or notched on the leaf edge

**simple**—having one leaf blade

**sinus**—rounded depression between lobes (Figure 2)

**spur**—a short stout branchlet

**stipules**—leaflike structure found at the base of a leaf petiole

**symmetrical**—even or equal on opposite side

**thorn**—a sharp pointed outgrowth on a plant

**twig**—a small outgrowth on a stem

**veins**—tissue that forms the framework of a leaf

**whorled**—three or more leaves or buds present at each node (Figure 1)

## Steps to Using the Key

1. Begin at the top of the diagram on the inside front cover. Determine if the tree is a conifer or broadleaf. If it is a conifer go to “O” on page 19. Otherwise drop down to the next tier of questions.
2. Determine if the tree has alternate, opposite, or whorled leaf arrangement (Figure 1).
3. Once you determine leaf arrangement, determine if the tree has simple or compound leaves (Figures 2 and 3).
4. Continue through the key until you are directed to a letter and page number.
5. Proceed to the appropriate page and begin keying at the appropriate letter.
6. Begin with 1a. If 1a. describes the tree you are identifying, but doesn’t yet have a specific tree listed, drop down to 2a. Otherwise go to 1b.
7. Continue down through the key until you reach the common name of the tree you are identifying.

# Leaf Identification Key

## A. Broadleaf, Alternate, Simple, Broad, Not lobed, Smooth

- 1a. Leaf blade heart shaped less than 6 inches.  
Petiole swollen on both ends. Small tree.  
Bright pinkish flowers in early spring. Flattened  
bean-like fruit about 3 inches in length. . . . . **eastern redbud**
- 1b. Leaf blade fan shaped. Veins parallel.  
Short spur shoots on branches . . . . . **ginkgo**

## B. Broadleaf, Alternate, Simple, Broad, Not lobed, Toothed

- 1a. Petiole flattened.
  - 2a. Leaf triangular in shape . . . . . **eastern cottonwood**
  - 2b. Leaf blade not triangular.
    - 3a. Large teeth less than 12 on a side . . . . **bigtooth aspen**
    - 3b. Fine teeth more than 12 per side  
(up to 40). . . . . **quaking aspen**
- 1b. Petiole not flattened.
  - 4a. Leaf blade usually less than 2 inches.  
Variable in shape. Singular sharp thorns,  
usually maroon to dark brown. Small apple-like  
fruits under 1/2 inch in diameter. . . . . **hawthorn**
  - 4b. Leaves greater than 2 inches.
    - 5a. Somewhat heart shaped. Long petiole.  
Base of blade not even.  
Less than 3 visible bud scales . . . **American basswood**
    - 5b. Sometimes highly variable in shape and lobing. 3-6  
visible bud scales. Milky white sap from broken twigs.  
Fruit similar to blackberry.
      - 6a. Leaves smooth and glossy on upper surface.  
Fruit from white to purplish . . . . **white mulberry**
      - 6b. Leaves not glossy somewhat rough on the upper  
surface. Fruit dark purple . . . . . **red mulberry**

**C. Broadleaf, Alternate, Simple, Broad, Lobed**

1a. Leaf blade fan shaped with parallel veins . . . . . **ginkgo**

1b. Leaf blade not fan shaped.

2a. More than one distinct leaf shape.

3a. Leaf edge toothless. Three distinct leaf shapes with single, double, and triple lobes.  
Lemon-like odor when crushed . . . . . **sassafras**

3b. Toothed leaf edge. White milky sap from twigs;  
fruit similar to blackberry.

4a. Leaves smooth and glossy on upper surface. Fruit from white to purplish. . . . . **white mulberry**

4b. Leaves not glossy; somewhat rough on the upper surface.  
Fruit dark purple. . . . . **red mulberry**

2b. Leaf shapes uniform.

5a. Leaf edge not toothed. Usually four lobed resembling a tulip. Top of leaf flattened or notched . . . . . **yellow-poplar**

5b. Leaf edge toothed.

6a. Leaf star shaped with 5 major lobes.  
Teeth small, rounded, and uniform . . . **sweetgum**

6b. Leaf with 3 to 5 broad lobes.  
Large variable teeth.  
Petiole swollen at the base and covers the buds . . . . . **American sycamore**

**D. Broadleaf, Alternate, Simple, Medium to narrow, Smooth**

1a. Leaves mostly greater than 5 inches long.

2a. Leaves 5-10 inches long.

3a. End bud silvery and silky.  
Fruit cluster of red seeds.  
Bark resembles yellow-poplar . . . **cucumber magnolia**

- 3b. End bud velvety brown. Crushed leaves smell like green peppers. Fruit 3 to 6 inches long, large yellowish green with yellow flesh and large brown seeds .....**pawpaw**
- 2b. Leaves mostly 12-32 inches long. Larger flowers 10-12 inches in diameter. Only known location in Ohio is Jackson County ..... **bigleaf magnolia**
- 1b. Leaf smaller than 6 inches long.
  - 4a. Twigs green in color.
    - 5a. Crushed leaves and twigs have lemony odor. Older twigs orange in color ..... **sassafras**
    - 5b. No odor when crushed. Leaf veins curve toward the tip. Distinct horizontal layers to the canopy. Small under-story tree on a moist site. .... **alternate-leaf dogwood**
  - 4b. Twigs brown.
    - 6a. Armed with short stout spines ..... **Osage-orange**
    - 6b. No thorns.
      - 7a. End buds clustered. Leaf tip bristled. .... **shingle oak**
      - 7b. End buds singular.
        - 8a. Dark nearly black buds with 2 visible bud scales. Fruit orange in fall ..... **persimmon**
        - 8b. Multi-colored buds with many scales. Three visible dots on the leaf scar .... **blackgum**

**E. Broadleaf, Alternate, Simple, Medium to narrow, Toothed**

- 1a. Thorns, spines, or spur shoots present on twigs.
  - 2a. Sharp thin thorns. Leaves variable in size and shape. Buds red in color. Red apple-like fruit less than 1/2 inch diameter ..... **hawthorn**

- 2b. Spurs or spines-tipped branchlets.
  - 3a. Whitish pubescences on underside of leaves.  
Spurs stout with terminal bud present.  
Fruit pome . . . . . **apples and crab apples**
  - 3b. No whitish pubescence. No terminal bud  
on spine or spur . . . . . **plum**
- 1b. No spines, thorns, or spur shoots.
  - 4a. Most leaves greater than 4 inches in length.
    - 5a. Buds clustered at twig tip.
      - 6a. Teeth large with rounded tips.  
Lobes shallow with rounded tip.  
Bark hard, deeply furrowed.  
Fruit is large football-shaped acorn.  
Dry ridges in SE and E Ohio . . . . . **chestnut oak**
      - 6b. Teeth large and pointed with glands on tips  
(not bristles). Small dark acorn.  
Bark gray and flaky. . . . . **chinkapin oak**
    - 5b. Buds not clustered.
      - 7a. Leaf base symmetrical. Leaves oblong  
to lance-shaped up to 9 inches in length  
with curved teeth. . . . . **American chestnut**
      - 7b. Asymmetrical (uneven) leaf base.  
Doubly serrate leaf margin.  
Twigs light and buds dark.  
Sandy papery surface . . . . . **red (slippery) elm**
  - 4b. Most leaves less than 4 inches in length.
    - 8a. Doubly serrate. Each tooth on leaf edge  
bears smaller teeth.
      - 9a. Asymmetrical (uneven) leaf base.  
Twigs and buds brown. Leaf may be rough.  
Bark spongy and layered . . . . . **American elm**
      - 9b. Symmetrical leaf base.
        - 10a. Wintergreen odor to broken twigs.

- 11a. Branches and bark golden . . . **yellow birch**
- 11b. Bark dark, horizontal lines . . . **sweet birch**
- 10b. No wintergreen odor.
  - 12a. Bark peels from sides revealing white or salmon pink inner bark.
    - 13a. Occurs naturally along streams and wet areas . . . **river birch**
    - 13b. Bark white and papery. Native only to Lucas County . . . **paper birch**
      - \* European white birch often used in the landscape.
  - 12b. Bark not peeling as above.
    - 14a. Bark gray with a muscle-like appearance. Small tree . . . . . **musclewood (American hornbeam, blue beech)**
    - 14b. Bark bronze in color on young trees. Shredding into very narrow strips when older . . . . . **ironwood (eastern hophornbeam)**
- 8b. Singly serrate.
  - 15a. Leaves very narrow. 4-10 times longer than wide.
    - 16a. Small tree (up to 20 feet) forming thickets. Found along stream banks . . . **sandbar willow**
    - 16b. Individual stemmed tree capable of large size. Twigs yellowish drooping with age . . . . . **black willow\***
      - \*Weeping willow is a non-native species with branches drooping to the ground. Often planted in the landscape.
  - 15b. Leaves broader than above.
    - 17a. Leaf base asymmetrical. Leaf tip curves to one side. Bark unique gray ridges . . . . . **hackberry**
    - 17b. Leaf base symmetrical.

- 18a. Buds  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long.
  - 19a. Teeth widely spaced on leaf margin. Buds  $\frac{3}{4}$ -1 inch long and brown. Bark smooth gray. . . **American beech**
  - 19b. Buds long,  $\frac{1}{2}$  inch and greenish. Teeth closely spaced. . . **downy serviceberry**
- 18b. Buds smaller than  $\frac{1}{4}$  inch.
  - 20a. Buds small. Scratched twig emits strong bitter odor. . . . . **black cherry**
  - 20b. Buds inconspicuous, twigs green to reddish. Leaves to 7 inches long. . . . . **sourwood**

**F. Broadleaf, Alternate, Simple, Medium to narrow, Lobed**

- 1a. Leaves with single, double (mitten shaped) or triple lobes, lemony odor, twigs green. . . . . **sassafras**
- 1b. Leaves not as above.
  - 2a. Leaves with bristle tipped lobes.
    - 3a. Leaf sinuses cut nearly to center vein.
      - 4a. Found on wet sites or in the landscape. Small acorns less than  $\frac{1}{2}$  inch . . . . . **pin oak**
      - 4b. Usually found on dry ridges. Larger acorns with cap covering over half of the fruit. . . . **scarlet oak**
    - 3b. Leaves not as deeply cut.
      - 5a. Bark with distinct lighter streaks. Acorn large  $\frac{3}{4}$  to  $1\frac{1}{2}$  inch with a shallow cap which resembles a beret. Found on moist but not wet sites . . . . . **northern red oak**
      - 5b. Bark dark and blocky without streaks. Leaves highly variable with dark shiny surface and hairy below. Acorn small with fringed cap covering about  $\frac{1}{3}$  of fruit. . . . . **black oak**

2b. Leaves without bristle tipped lobes.

6a. Leaves with shallow lobing or resembling large teeth.

7a. Lobes or teeth rounded at tip.

8a. Uniform large teeth.

Bark hard deeply furrowed.

Fruit is large football-shaped acorn.

Usually found on dry ridges in

SE and E Ohio . . . . . **chestnut oak**

8b. Small irregular lobes. Leaves often white on underside. Acorn with long stem (1 inch or longer). Found almost exclusively in swamps or wetland areas. Bark on branches

often flaking . . . . .

**swamp white oak**

7b. Lobes or teeth pointed with glands at tip

(not bristles). Small dark brown to black acorn.

Bark gray and flaky. . . . . **chinkapin oak**

6b. Lobing deeper.

7a. Leaves hairy or pubescent beneath.

Middle lobes of leaf nearly square

forming a cross shape. Twigs hairy.

Found on very dry sites . . . . . **post oak**

7b. Leaves not hairy beneath.

8a. Leaves with 7 to 9 lobes with varying depths. Bark light gray forming loose

plates above. Acorn up to  $\frac{3}{4}$  inch with

short stalk less than  $\frac{1}{2}$  inch. . . . . **white oak**

8b. Leaves with middle sinuses nearly

reaching the center vein. Large acorn

with cap nearly covering acorn. Bark

dark and deeply furrowed. . . . . **bur oak**



## G. Broadleaf, Alternate, Compound, Pinnate

1a. Leaves mostly with more than 11 leaflets.

2a. Leaflets oval with rounded or notched tip.

3a. Leaflets (1-2 inches) with tiny bristle tip or notch.

Paired spines usually present at the base of leaf.

Fruit bean-like up to 4 inches . . . . . **black locust**

3b. Leaflets often less than 1 inch without

bristle or notch. Leaves may be twice

branched. Long multi-branched thorns

often present. Fruit long (8-15 inches)

strap-like pod. . . . . **honeylocust**

2b. Leaflet tip ends in a distinct point. Not rounded.

4a. Twigs with pith that is distinctly chambered.

5a. Leaves with 15-25 leaflets. Bark dark.

Fruit globe shaped with thick green

husk. . . . . **black walnut**

5b. Bark with whitish flattened ridges.

Leaves with 11-17 large leaflets.

Fruit elongated . . . . . **butternut (white walnut)**

4b. Pith not chambered.

6a. Leaves with up to 41 leaflets,

twigs foul scented. Leaflets with

glands on small lobes near base.

Fruit winged on both ends. . . . . **tree-of-heaven**

(**Ailanthus**)

6b. No foul odor. Fruit reddish in cluster at end of

stem.

7a. Wings on rachis. 7 to 17 leaflets.

Foliage glossy. Fruit cluster dark and

drooping. . . . . **winged sumac**

\*see front cover

7b. Wings not present on rachis.

8a. 11 to 31 leaflets.  
Twig stout with distinct waxy coat.  
Fruit cluster bright red  
remaining upright . . . . . **smooth sumac**

8b. 11 to 31 leaflets. Twig stout  
and heavily covered with  
short velvety hairs. Fruit  
upright and hairy . . . . . **staghorn sumac**

1b. Leaves with 11 or fewer leaflets.

9a. Distinct wings along rachis. 7 to 17 leaflets.  
Foliage glossy. Fruit cluster is dark reddish  
and drooping . . . . . **winged sumac**

9a. Wings not present as above.

10a. 7 or fewer leaflets per leaf.

11a. Mostly 5 leaflets per leaf. Rachis often hairy.  
Husk on nut very thick often  $\frac{1}{2}$  inch.  
Bark very shaggy.  
Medium to dry site . . . . . **shagbark hickory**

11b. 5-7 leaflets per leaf. Husk on nut thin  
about  $\frac{1}{8}$  inch. Interlacing bark  
with narrow plates that begin  
to break loose . . . . . **pignut hickory**

10b. 7 or more leaflets per leaf.

12a. Buds distinctly sulfur yellow in color.  
5 to 11 leaflets per leaf. Husk on nut  
thin with raised ridges at splits.  
Bark tight with narrow ridges.  
Typically found on moist sites . . . **bitternut hickory**

12b. Buds large and not yellow as described above.

13a. Bark very shaggy. 7 to 9 leaflets per leaf.  
Twigs stout with orange brown color.  
Often near stream.  
Large nut, thick husk . . . . . **shellbark hickory**

- 13b. Bark with wide and rounded interlacing ridges.  
7 to 9 leaflets per leaf. Rachis is very hairy.  
Nut has medium thickness  
husk (1/4 inch) . . . . . **mockernut hickory**

**H. Broadleaf, Alternate, Compound, Twice pinnate**

- 1a. Leaves less than 12 inches in length.  
Leaflets often less than 1 inch.  
Leaves may be twice branched or pinnately compound.  
Long multi-branched thorns often present.  
Fruit long (8-15 inches) strap-like pod . . . . . **honeylocust**
- 1b. Leaves 1 to 3 feet in length.  
Leaflets 1 to 3 inches in length. Twigs very stout.  
Fruit 4-10 inches leathery pod . . . . . **Kentucky coffeetree**

**I. Broadleaf, Alternate, Compound, Trifoliate**

- 1a. Buds tan. Fruit white. Clinging vine,  
ground cover or occasionally free standing.  
Dark colored coarse aerial root hairs.  
*Caution—Do not touch! Oil causes  
severe skin rash on contact.* . . . . . **poison-ivy**

**J. Broadleaf, Whorled**

- 1a. Large (6-12 inches) somewhat heart-shaped leaves.  
Long (6-20 inches) bean-like fruit.  
Showy upright flowers. Very stout twigs . . . . **northern catalpa**

**K. Broadleaf, Opposite, Simple, Lobing**

- 1a. Leaf edge fine toothed between lobes.
  - 2a. Deep narrow sinuses between lobes.  
Mostly 5 lobed. Silvery pale below.  
Leaves turn yellow in fall. . . . . **silver maple**
- 2b. Sinuses not as deep. Mostly 3 lobed.  
Leaf stem often red. Leaves usually  
turning red in fall. . . . . **red maple**

1b. Leaf edge lacks fine teeth.

3a. Mostly 5 lobes. Buds brown  
and sharp pointed ..... **sugar maple**

(Note: black maple is very similar, but usually has 3 lobes  
that droop on the edges. Buds are nearly black and the  
twig is mottled in appearance. Also leafy structures (Stip-  
ules) at the base of the leaf stem present.)

3b. 5 or 7 lobes. Very broad dark green  
or maroon colored leaf. Buds large, green,  
and somewhat sticky. Milky sap emitted  
from leaf stem or young twig ..... **Norway maple**

## **L. Broadleaf, Opposite, Simple, Smooth**

1a. Twigs turn upward toward ends. Upper side  
of twig deep red to purple underside green.  
Flower buds large pumpkin-shaped. Fruit in clusters,  
red, football shaped. Large white showy flowers  
in spring ..... **flowering dogwood**

1b. Twigs fine and do not turn upward at ends.  
Flower buds not as prominent.  
Fruit white or bluish ..... **dogwood\***

\*one of several multi-stemmed dogwoods that often occur on  
wetter sites.

## **M. Broadleaf, Opposite, Compound, Pinnate**

1a. Twigs green with rounded white woolly buds.  
Fruit: paired, winged, maple-like.  
3 to 7 leaflets per leaf. .... **boxelder**

1b. Twigs not green. Oar-like clustered fruit.

2a. Leaf scar U-shaped ..... **white ash**

2b. Leaf scar rounded or flattened on top ..... **green ash**

## N. Broadleaf, Opposite, Compound, Palmate

- 1a. Bruised twig has strong skunk-like odor.  
Husk on fruit spiny or bumpy. Small tree usually found on flood plain. Ohio's State tree and mascot for The Ohio State University. . . . . **Ohio buckeye\***
- 1b. Bruised twig without odor. Husk on fruit without spines or bumps. Grows to medium-large sized tree in SE Ohio.  
Found on moist slopes . . . . . **yellow buckeye**

\*horse chestnut, native to Europe is a buckeye that is used in the landscape. Typically has 7 leaflets and a very prickly husk.

## O. Conifer

- 1a. Foliage flattened and scale-like.
  - 2a. Some foliage sharp awl-like, others narrow and scale-like. Fruit bluish to whitish berry-like . . . . . **eastern redcedar**
  - 2b. Foliage flattened and broader than above. No needle-like foliage. Fruit leathery cone-like to 1/2 inch in length.  
Found in wet bogs in north and central Ohio and thin rocky outcrops in southern Ohio . . . . . **northern white cedar**
- 1b. Foliage needle-like.
  - 3a. Needles in bundles of 2 or more.
    - 4a. Needles mostly in bundles of 2.
      - 5a. Needles mostly less than 3 inches long.
        - 6a. Needles yellowish green, twisted, held together with long sheath.  
Poor self pruner. Found native stands in Southern Ohio . . . . . **Virginia pine**
        - 6b. Needles bluish green and twisted.  
Orange bark on upper part of tree.  
Non-native tree often used for Christmas trees . . . . . **Scotch pine**

- 5b. Leaves mostly greater than 3 inches long.
  - 7a. Needles stout and break easily  
when bent. Bark has a reddish cast . . . . **red pine**
  - 7b. Needles do not break easily  
when bent. Needles occasionally  
in bundles of 3. Found in native  
stands in southern Ohio.  
Bark turning orange-brown  
with age . . . . . **short-leaf pine**
- 4b. Needles in bundles of 3 or more.
  - 8a. Needles mostly in 3's and twisted.  
Found on poor sites in southern Ohio.  
Often tufts of needles on main bole  
of tree. Bark dark and often  
appears burned. . . . . **pitch pine**
  - 8b. Needles in bundles of 5. Soft flexible  
foliage with distinct white lines. Long  
(6-8 inches) narrow cones . . . **eastern white pine**
- 3b. Needles individually attached.
  - 9a. Needles deciduous (Dropping in fall).
    - 10a. Needles in two distinctly flattened rows.  
Cones globular.  
Cone approximately 1 inch in diameter.  
Non-native to Ohio.  
Native to swamps south of Ohio . . . . **baldcypress**
    - 10b. Needles often bunched on short spurs,  
appearing whorled, or alternately  
arranged on new growth.  
Turning yellow in fall.  
Cone upright. Native to bogs  
in N. Ohio . . . . . **tamarack (eastern larch)**

9b. Needles persistent (present all year).

11a. Needles short ( $\frac{1}{4}$  to  $\frac{3}{4}$  inch),  
arranged in two distinctly flattened rows.  
Dark green above white lines below.  
Cones small  $\frac{1}{2}$ - $\frac{3}{4}$  inch . . . . . **eastern hemlock**

11b. Needles distinctly angled and individually  
attached on rectangular sections of twig.  
Larger branches curve upward with hanging  
smaller branches. Cones to 7 inches  
in length. Non-native to United States  
but widely planted . . . . . **Norway spruce\***

\*blue spruce, native in west United States is commonly used in landscaping. Needles longer, sharp and very stout. Often have bluish color.

## Scientific and Common Names

1. apples *Malus spp.*
2. ash, green *Fraxinus pennsylvanica* Marshall
3. ash, white *Fraxinus americana* Linnaeus
4. aspen, bigtooth *Populus grandidentata* Michaux
5. aspen, quaking *Populus tremuloides* Michaux
6. baldcypress *Taxodium distichum*  
(Linnaeus) Richard
7. basswood, American *Tilia americana* Linnaeus
8. beech, American *Fagus grandifolia* Ehrhart
9. beech, blue *Carpinus caroliniana* Walter
10. birch, paper *Betula papyrifera* Marshall
11. birch, river *Betula nigra* Linnaeus
12. birch, sweet *Betula lenta* Linnaeus
13. birch, yellow *Betula alleghaniensis* Britton
14. blackgum *Nyssa sylvatica* Marshall
15. boxelder *Acer negundo* Linnaeus
16. buckeye, Ohio *Aesculus glabra* Willdenow
17. buckeye, yellow *Aesculus octandra*
18. butternut (walnut, white) *Juglans cinerea* Linnaeus
19. catalpa, northern *Catalpa speciosa*  
Warder ex Engelmann
20. cherry, black *Prunus serotina* Ehrhart
21. chestnut, American *Castanea dentata*  
(Marshall) Borkhausen
22. coffeetree, Kentucky *Gymnocladus dioicus*  
(Linnaeus) K. Koch
23. cottonwood, eastern *Populus deltoides*  
Bartram ex Marshall
24. dogwood *Cornus spp.* Linnaeus
25. dogwood, alternate-leaf *Cornus alternifolia* Linnaeus
26. dogwood, flowering *Cornus florida* Linnaeus



27. elm, American	<i>Ulmus americana</i> Linnaeus
28. elm, red (slippery)	<i>Ulmus rubra</i> Muhlenberg
29. ginkgo	<i>Ginkgo biloba</i>
30. hackberry	<i>Celtis occidentalis</i> Linnaeus
31. hawthorn	<i>Crataegus</i> spp. Linnaeus
32. hemlock, eastern	<i>Tsuga canadensis</i> (Linnaeus) Carrière
33. hickory, bitternut	<i>Carya cordiformis</i> (Wangenheim) K. Koch
34. hickory, mockernut	<i>Carya tomentosa</i> (Poiret) Nuttall
35. hickory, pignut	<i>Carya glabra</i> (Miller) Sweet
36. hickory, shagbark	<i>Carya ovata</i> (Miller) K. Koch
37. hickory, shellbark	<i>Carya laciniosa</i>
38. honeylocust	<i>Gleditsia triacanthos</i>
39. hophornbeam, eastern	<i>Ostrya virginiana</i> (Miller) K. Koch
40. hornbeam, American	<i>Carpinus caroliniana</i> Walter
41. larch, eastern	<i>Larix laricina</i> (Du Roi) K. Koch
42. locust, black	<i>Robinia pseudoacacia</i> Linnaeus
43. magnolia, bigleaf	<i>Magnolia macrophylla</i> Michaux
44. magnolia, cucumber	<i>Magnolia acuminata</i> Linnaeus
45. maple, Norway	<i>Acer platanoids</i> Linnaeus
46. maple, red	<i>Acer rubrum</i> Linnaeus
47. maple, silver	<i>Acer saccharinum</i> Linnaeus
48. maple, sugar	<i>Acer saccharum</i> Marshall
49. mulberry, red	<i>Morus rubra</i> Linnaeus
50. mulberry, white	<i>Morus alba</i> Linnaeus
51. oak, black	<i>Quercus velutina</i> Lamarck
52. oak, bur	<i>Quercus macrocarpa</i> Michaux
53. oak, chestnut	<i>Quercus prinus</i> Linnaeus
54. oak, chinkapin	<i>Quercus muehlenbergii</i> Engelmann
55. oak, northern red	<i>Quercus rubra</i> Linnaeus

56. oak, pin	<i>Quercus palustris</i> Muenchhausen
57. oak, post	<i>Quercus stellata</i> Wangenheim
58. oak, scarlet	<i>Quercus coccinea</i> Muenchhausen
59. oak, shingle	<i>Quercus imbricaria</i> Michaux
60. oak, swamp white	<i>Quercus bicolor</i> Willdenow
61. oak, white	<i>Quercus alba</i> Linnaeus
62. Osage-orange	<i>Maclura pomifera</i> (Rafinesque) Schneider
63. pawpaw	<i>Asimina triloba</i> (Linnaeus) Dunal
64. persimmon	<i>Diospyros virginiana</i> Linnaeus
65. pine, eastern white	<i>Pinus strobus</i> Linnaeus
66. pine, pitch	<i>Pinus strobus</i> Linnaeus
67. pine, red	<i>Pinus resinosa</i> Aiton
68. pine, Scotch	<i>Pinus sylvestris</i> Linnaeus
69. pine, short-leaf	<i>Pinus echinata</i> Miller
70. pine, Virginia	<i>Pinus virginiana</i> Miller
71. plum	<i>Prunus alleghaniensis</i> Marshall
72. poison-ivy	<i>Toxicodendron radicans</i> (Linnaeus) Kuntz
73. poplar, yellow	<i>Liriodendron tulipifera</i> Linnaeus
74. redbud, eastern	<i>Cercis canadensis</i> Linnaeus
75. redcedar, eastern	<i>Juniperus virginiana</i> Linnaeus
76. sassafras	<i>Sassafras albidum</i> (Nuttall) Nees
77. serviceberry, downy	<i>Amelanchier arborea</i> (Michaux f.) Fernald
78. sourwood	<i>Oxydendrum arboreum</i> (Linnaeus) de Candolle
79. spruce, Norway	<i>Picea abies</i> (Linnaeus) Karsten
80. sumac, smooth	<i>Rhus glabra</i> Linnaeus
81. sumac, staghorn	<i>Rhus typhina</i> Linnaeus
82. sumac, winged	<i>Rhus copallina</i> Linnaeus
83. sweetgum	<i>Liquidambar styraciflua</i> Linnaeus

84. sycamore, American	<i>Platanus occidentalis</i> Linnaeus
85. tree-of-heaven	<i>Ailanthus altissima</i> (Miller) Swingle
86. walnut, black	<i>Juglans nigra</i> Linnaeus
87. white cedar, northern	<i>Thuja occidentalis</i> Linnaeus
88. willows	<i>Salix</i> spp.

## Resources

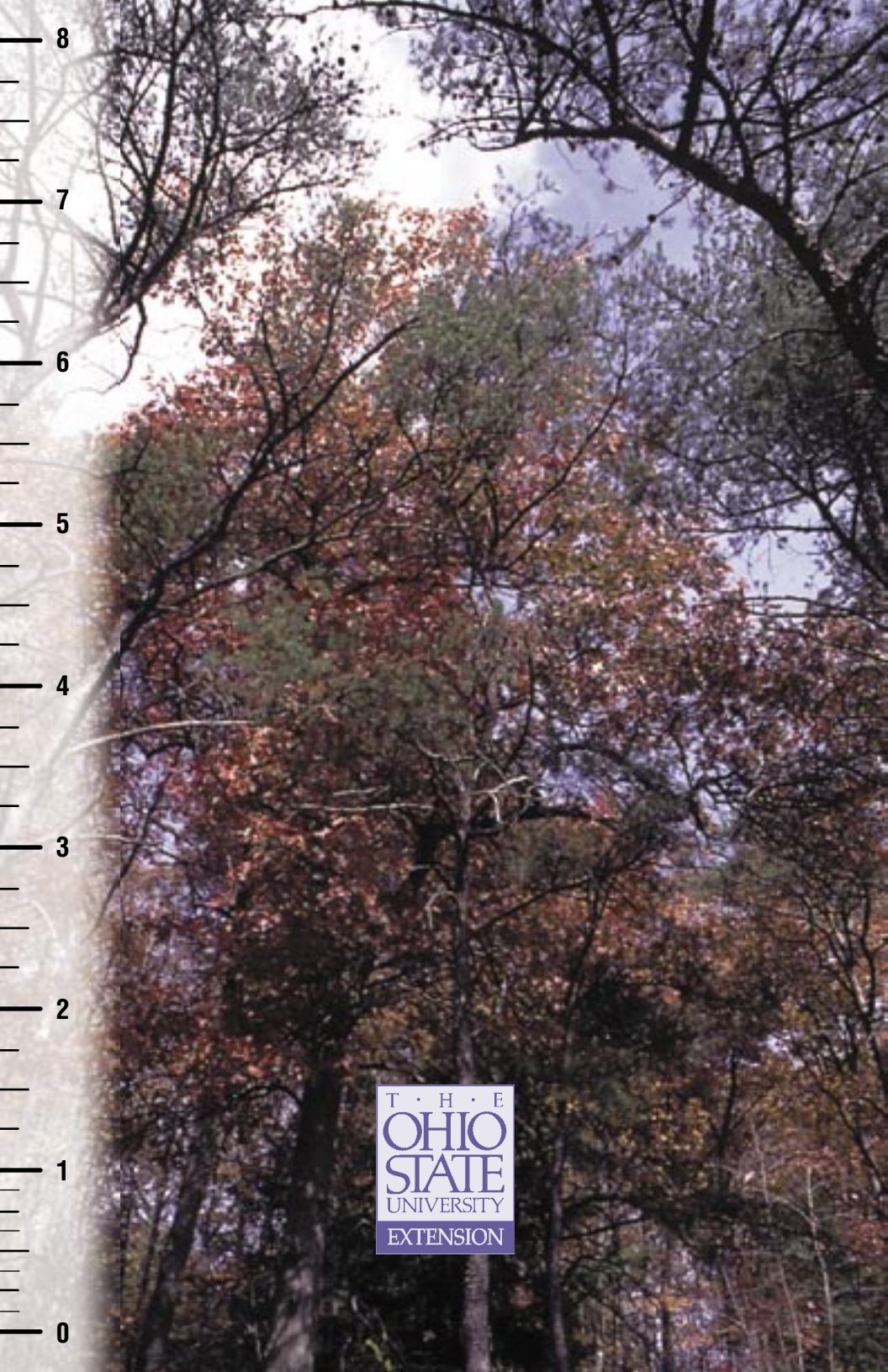
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