

KEYS

Key to Trees in Winter Condition

This key is divided into several sections. The first part is a key to several major genera or groups of trees plus a remaining class. The parts which follow are special keys to each of the divisions given in the first part. It is believed that this arrangement is more useful for ecology students, who are presumed to have a good background knowledge of dendrology and who may readily recognize a given tree as to genus but who may be in doubt as to its particular species.

Part I
Keys to Major Genera

- A. Twigs and branches unarmed
- B. Leaf scars and branches opposite
- C. Twigs fine, vascular bundle scars (in leaf scars) distinct and separated- - - - - The Maples
- CC. Twigs coarse, bundle scars confluent in a U-shaped line
- - - - - The Ashes
- BB. Leaf scars and branches alternate
- D. Bundle scars 3 or in 3 distinct groups
- E. Stipule scars present
- F. Twigs coarse, pith star-shaped in cross-section
- - - - - The Aspens
- FF. Twigs fine, pith circular- - - - - The Cherries
- EE. No stipule scars
- G. Twigs coarse, pith divided into chambers
- - - - - The Walnuts
- GG. Twigs fine, pith continuous
- H. Bark smooth, or peeling in layers, lenticels elongated horizontally- - - - - The Birches
- HH. Bark flaky or rough, not peeling, lenticels not elongated- - - - - The Elms
- DD. Bundle scars 4 to many

- I. Terminal buds present, symmetrical in shape
 - J. Bark of tree smooth, light gray, at all ages- -Beech
 - JJ. Bark of tree rough, at least in trees over 6" DB H
 - K. Buds clustered at tips of shoots- - - - The Oaks
 - KK. Buds not clustered at tips of shoots
- - - - -The Hickories
- II. True terminal bud absent, end bud obliquely unsym-
metrical- - - - - Basswood

- AA. Twigs or branches armed with spines or thorns
- - - - - The Locusts and Hawthorns

For any tree not fitting above key, look under Part 12 on "Other Trees".

Part 2 The Maples

- A. Buds white-wooly; twigs with a whitish bloom; opposite leaf scars
joined to make a ring around the twig- - - - - Box Elder
- AA. Buds not wooly; twigs without a bloom; leaf scars not meeting
 - B. Buds reddish, broad, blunt pointed; twigs bright red
 - C. Twigs with a strong, disagreeable odor when bruised
- - - - - Silver Maple
 - CC. Twigs without odor- - - - - Red Maple
- BB. Buds and twigs brown; buds narrow, sharp pointed- - - - Sugar Maple

Part 3 The Ashes

- A. Twigs with corky ridges, making twigs seem four sided in cross-
section; buds gray- - - - - Blue Ash
- AA. Twigs without ridges, circular in cross-section; buds brown or black
 - B. Buds rusty-tomentose; twigs more or less downy- - - - - Red Ash
- BB. Buds not tomentose; twigs not downy
 - C. Terminal bud black; bud scales apiculate; bark flaky- -Black Ash
- CC. Terminal bud brown; bud scales rounded; bark not flaky

- D. Upper margin of leaf scars deeply concave- - - - - White Ash
- DD. Upper margin of leaf scars straight or convex- - - Green Ash

**Part 4
The Aspens**

- A. Buds scarcely resinous, margins of bud-scales hairy; lateral buds divergent- - - - - Large-toothed Aspen
- AA. Buds resinous, without hairs; lateral buds appressed to twigs
 - B. Buds shiny, dark brown, 3/8" long or less; bark smooth, white, yellow or green for 10 to 20 years; small tree frequently in clumps- - - - - Trembling Aspen
 - BB. Buds light brown, with an excess of resin, more than 3/8" long, bark gray and deeply furrowed; may be very large tree, usually growing singly- - - - - Cottonwood

**Part 5
The Cherries**

- A. Buds 1/2 in. or less in length; bud scales uniform in color, apiculate at apex; old bark blackish, rough, scaly; young bark with transversely elongated lenticels; may be large tree up to 30" DB H- - - Black Cherry
- AA. Buds 1/2 to 3/4 in. in length; bud scales grayish on margin, brown in center, rounded at apex, old bark brown, smooth, or slightly fissured; lenticels on young bark not conspicuously elongated; shrub or small tree - - - - - Choke Cherry

**Part 6
The Walnuts**

- A. Pith chocolate-brown; leaf scar with downy pad above; bark with broad, flat, whitish ridges; chamber cavities in twig pith only a little wider than partitions; terminal buds longer than broad - - - - - Butternut
- AA. Pith cream or buff color; leaf scar without downy pad; bark rough, deeply furrowed with canoe-shaped depressions separated by broad, rounded ridges chamber cavities in pith several times wider than partitions; terminal buds ovate- - - - - Black Walnut

Part 7
The Birches

- A. Young bark white, usually tightly appressed to trunk but may be separated in layers; buds resinous- - - - - White Birch
- AA. Young bark not white, naturally peeling in papery curls; buds not resinous
 - B. Twigs with a wintergreen flavor; young bark yellowish bronze in color; buds divergent, nearly round in cross-section- - Yellow Birch
 - BB. Twigs without wintergreen flavor; young bark salmon-pink, becoming reddish; buds appressed to twigs, squarish in cross-section
- - - - - River Birch

Part 8
The Elms

- A. Twigs with corky ridges- - - - - Cork Elm
- AA. Twigs without corky ridges
 - B. Twigs rough-hairy; buds rusty-tomentose; inner bark mucilaginous; fibrous layers of old bark separated by corky arcs which are brown, darker than fibers- - - - - Slippery Elm
 - BB. Twigs soft-hairy to glabrous; buds not tomentose; inner bark not mucilaginous; fibrous layers of old bark separated by corky arcs which are whitish, much lighter than fibers- - - - - American Elm

Part 9
The Oaks

(The species of oak are extremely variable and are not always to be separated with certainty by this Key.)

- A. Immature acorns absent in winter; bark of trunk gray in color; terminal buds usually about 1/8 inch long (may be more in Bur Oak); scar at base of acorns raised
 - B. Twigs densely pubescent; all surfaces of buds pubescent; branches usually irregularly angled, not straight; older twigs often with corky ridges; rim of acorn cup with a fringe of coarse hairs; bark thick, deeply furrowed, dark gray- - - - - Bur Oak
 - BB. Twigs smooth; buds smooth or slightly pubescent on edges of scales; branches straight; older twigs without corky ridges; no fringe of hairs on acorn cups
 - C. Bark of branchlets peeling into long, dark, stiff, papery layers; acorns on long pedicels- - - - - Swamp White Oak

CC. Bark of branchlets not so peeling; acorns sessile or short-stalked

D. Buds pointed, hairs on margins of bud scales

----- Chinquapin Oak

DD. Buds obtuse, entirely smooth- - - - - White Oak

AA. Immature acorns present in winter; bark of trunk black; terminal buds usually about 1/4 inch long (may be shorter in Hill's Oak); scar at base of acorns depressed

E. Buds covered with dense wool; inner bark often orange-yellow; twigs bitter, coloring saliva yellow when chewed; tips of upper scales of acorn cups spreading- - - - - Black Oak

EE. Buds glabrous except on margins of scales; twigs not bitter; scales of acorn cups tightly appressed

F. Buds often less than 3/16 inch; bud scales ciliate on margins; inner bark pale yellow; trunks provided with stubs of dead branches near the ground; acorns small, ellipsoidal in shape, frequently striped; acorn cups deep, conical or top-shaped
----- Hill's Oak

FF. Buds 1/2 inch long; bud scales glabrous; inner bark white; trunks not provided with stub branches; acorns large, ovate; acorn cups shallow saucer-shaped; bark of old trees with continuous, flat-topped ridges- - - - - Red Oak

Part 10
The Hickories

A. Bark shaggy; terminal bud broadly ovoid, obtuse, dark brown

----- Shagbark Hickory

AA. Bark not shaggy; terminal bud narrow, long-pointed, bright yellow

----- Yellowbud Hickory

Part 11
The Locusts and Hawthorns

A. Spines in pairs at each node, less than 1/2 inch long- - - - - Black Locust

AA. Thorns not in pairs, more than 1/2 inch long

B. Thorns generally branched, situated above the nodes- - - Honey Locust

BB. Thorns not branched, situated at the nodes- - - - - Hawthorn

Part 12

Other Trees, Not Covered in Parts 1-11 Above

A. Leaf-scars and branches sub-opposite- - - - - Buckthorn

AA. Leaf-scars and branches truly alternate

B. Bundle-scar only one; pith often divided into chambers; bark
stucco-like- - - - - Hackberry

BB. Bundle scars three or more; pith solid; bark various, but not
stucco-like

C. Bundle scars three or in three distinct groups

D. Stipule scars absent; buds sharp-pointed; leaf scars
V-shaped- - - - - Juneberry

DD. Stipule scars present; buds various

E. Bark smooth; trunk sinewy-fluted; catkins not
present in winter; bud scales white-downy on edges
- - - - - Hornbeam

EE. Bark scaly; trunk not sinewy-fluted; catkins present
in winter; bud scales often faintly striped- - Ironwood

CC. Bundle scars 4 or more

F. Stipule scars forming a ring around the twigs; bud with
one visible scale; bark of trunks peeling in patches, re-
vealing whitish inner bark- - - - - Sycamore

FF. Stipule scars not forming a ring around twig; buds with
4 or more visible scales; bark not peeling; sap milky
- - - - - Mulberry

(c) Key to Common Shrubs and Vines in Winter Condition

- A. Leaf scars opposite
- B. Leaf scars extending down the stem; conspicuous corky lenticels
on green twigs- - - - - -Wahoo
- BB. Leaf scars not extending down the stem; lenticels not conspicuous
- C. Buds with many scales
- D. Leaf scars small and inconspicuous, branches slender
- - - - - Honeysuckles
- DD. Leaf scars broad and conspicuous, branches stout
- - - - - Elderberry
- CC. Buds with only 1 pair of scales
- E. Buds glabrous
- F. Stems ashy-gray, not decumbent- - - - - Gray Dogwood
- FF. Stems bright red, decumbent- - - - - Red Osier
- EE. Buds scurfy-pubescent, elongate- - - - - -Nannyberry
- AA. Leaf scars alternate
- G. Branches armed with prickles, spines or thorns
- H. Spines in pairs at nodes- - - - - -Prickly Ash
- HH. Spines or prickles not in pairs at nodes
- I. Leaf scars usually covered by persistent petiole bases
- J. Stems red, angled, stout, covered with large sharp
spines- - - - - Blackberries
- JJ. Stems bluish-white or purple, not angled, slender,
covered with bristles or small, down-curved spines
- - - - - -Raspberries
- II. Leaf scars visible, not covered
- K. Stems ridged, straw-colored, with shredding epidermis
and with long, often triple, spines beneath the leaf
scars- - - - - -Gooseberries
- KK. Stems smooth, red, not shredding, and with short,
stout down-curved spines between the nodes- - - - - Rose

GG. Branches not armed

L. Vines

M. Bundle scars 1- - - - - Bittersweet

MM. Bundle scars 3

N. Pith continuous through the nodes; leaf scars large

O. Leaf scars semicircular- - - - - Woodbine

OO. Leaf scars V-shaped- - - - - Poison Ivy

NN. Pith with denser partitions at nodes; leaf scars small
- - - - - Grape

LL. Upright shrubs

P. Stipule scars present

Q. Leaf scars large and conspicuous- - - - - Woodbine

QQ. Leaf scars small and inconspicuous

R. Buds large, half-moon shaped; woody capsules present
in winter- - - - - Witch-hazel

RR. Buds small, normal in shape; no capsules present
in winter

S. Twigs covered with glandular hairs; catkins
usually present- - - - - Hazelnut

SS. Twigs smooth; no catkins present

T. Buds $\frac{1}{2}$ inch or less long; bud scales
uniform in color, apiculate at apex
- - - - - Black Cherry

TT. Buds $\frac{1}{2}$ to $\frac{1}{4}$ inch long; bud scales grayish
on margin, rounded at apex- - - Choke Cherry

PP. Stipule scars absent

U. Leaf scars large and conspicuous- - - - - Poison Ivy

UU. Leaf scars small and inconspicuous

V. Buds with 1 pair of scales, branches in horizontal
whorls- - - - - Alt. Leaved Dogwood

VV. Buds with many scales; branches not in whorls
- - - - - Juneberry