

A Tale of Two Twigs

How to Tell One Tree from Another

THE AGE OF WISDOM

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I Know how botanists name a tree

START HERE

Botanists give each species one scientific name, the same in every language, under rules that settle which name holds;^{1,2} common names vary among places and people.³ Botanical terms are precise for the same reason: each has one meaning, so two people who describe the same twig use the same words.

ONE NAME, TWO PARTS

Quercus velutina Lam.

genus specific epithet author
capitalized lowercase Lamark

black oak, one name in every language; both parts in italics

THE OLDEST NAME HOLDS

with few exceptions, the earliest correctly published name

1 May 1753 1927 1985

Species Plantarum *Q. nuttallii* *Q. texana*
Linnaeus: species Nuttall oak an older name
names begin named found to apply

COMMON NAMES WANDER



"pin oak" in the Delta: nearly every red oak with pointed lobes; only one species is pin oak

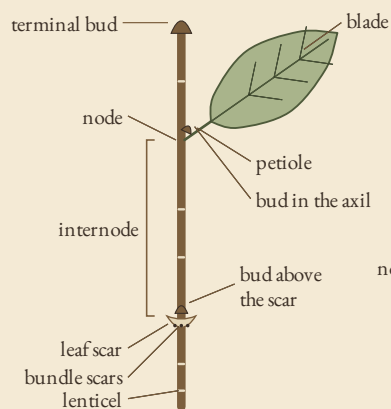


one tree, three names: swamp chestnut oak, basket oak, and cow oak

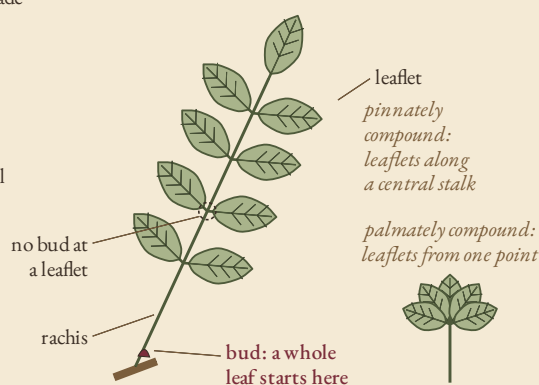
II Learn the terms used in keys

The **node** is the point on a twig where a leaf is, or was, attached; leaf arrangement is determined there. A **bud** forms where the leafstalk (i.e. petiole) meets the twig but never at the base of a leaflet; therefore, a bud marks where a whole leaf begins.⁴ Of the **fruits** named in this guide, an acorn is a nut in a scaly cup, a samara is a dry fruit with a wing, and a drupe is a fleshy fruit around a stone.⁵

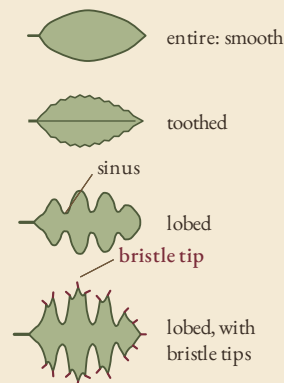
A TWIG



SIMPLE OR COMPOUND



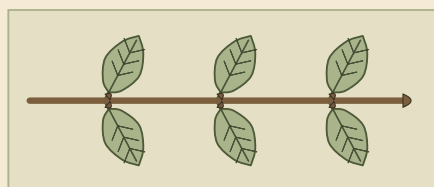
THE EDGE



The terms used most often in keys, shown on a twig, on compound leaves, and on four leaf edges.^{4,5}

Opposite

two leaves at each node

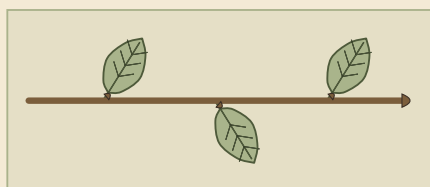


MAD CAP HORSE: five groups

section III

Alternate

one leaf at each node

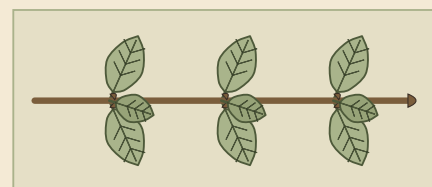


most trees: sort by leaf, fruit, and bark

section V

Whorled

three or more at each node



a few, such as catalpa and buttonbush

section III

The first question: how are the leaves arranged on the twig?

III Determine leaf arrangement first

Leaves are arranged in one of three ways: **opposite**, two per node, on opposite sides of the twig; **alternate**, one per node; or **whorled**, three or more per node. Most trees have alternate leaves.⁴ Before calling a tree opposite, make four checks:

- ◆ **Several nodes on several twigs.** An opposite-leaved tree that has lost leaves or limbs may appear alternate.⁶
- ◆ **Nodes below the tip.** Alternate-leaved trees often crowd buds or leaves at the twig tip (e.g., oaks and blackgum).^{4,7}
- ◆ **Leaves, not leaflets.** Paired leaflets lack a bud at their base.
- ◆ **Buds and leaf scars in winter,** which keep the arrangement after the leaves fall.⁴

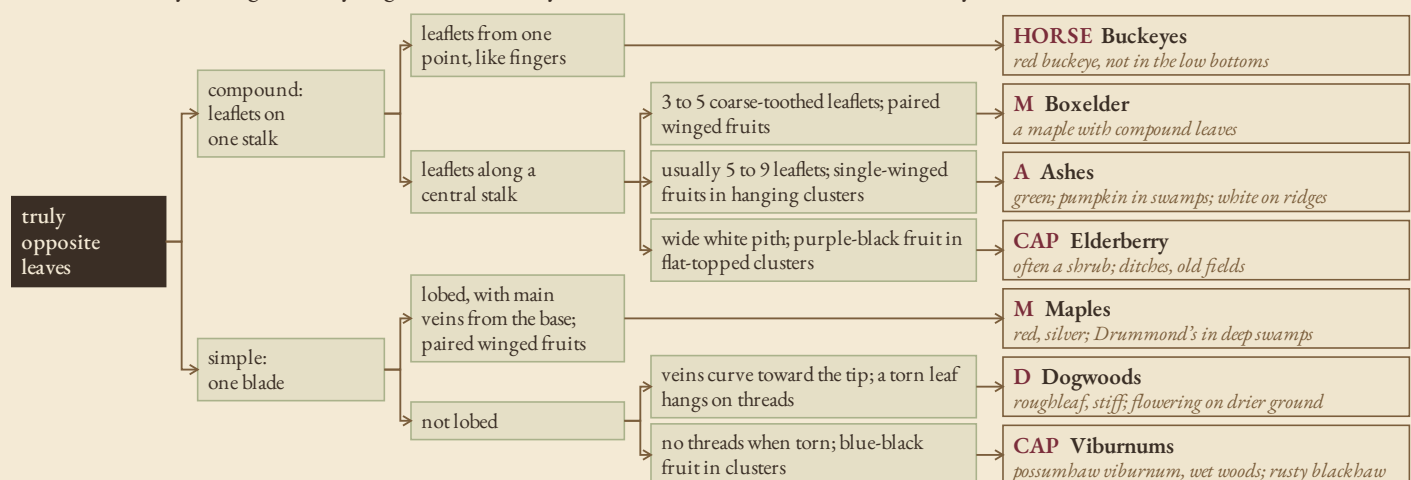
Truly opposite leaves most likely place a tree in one of five groups that students of dendrology (i.e. the study of trees) learn

as **MAD CAP HORSE**: maples, ashes, dogwoods, Caprifoliaceae, and horse chestnut and its native relatives, the buckeyes.⁴ Since I learned this technique, DNA studies have moved the viburnums and elderberries out of Caprifoliaceae into the viburnum family^{8,9} and merged the maple and buckeye families into the soapberry family.¹⁰ The technique still works. Taxonomy is always being revised, as professionals know, and this guide uses the system I learned and used.

A few opposite-leaved trees are exceptions: catalpa, often in whorls of three; fringetree and swamp privet, olive-family relatives of the ashes; buttonbush; and princess tree, an escaped ornamental. Conversely, alternate-leaf dogwood is a dogwood without opposite leaves.⁴

IV Separate the opposite-leaved groups

A dichotomous key is a series of paired choices; at each step, read every choice, select the one that fits, and continue. The key below ends at the group level. For species, I recommend a pocket guide (e.g., Petrides's or Sibley's)^{11,12} and, for twigs you take home to your own "laboratory," a regional key (e.g., the University of Arkansas Herbarium's; elsewhere, your state's, online).^{13–16}



A key to the opposite-leaved groups, with members in and around the Delta.^{3,4,17–20} Leaves vary; confirm with fruit when possible.

V Sort alternate-leaved trees into major groups

Most trees have alternate leaves, far too many to key on one page, or on four; regional guides serve that purpose.^{13–15} However, the major groups a beginner learns first are each recognized by a few features, listed below.^{2–4,21} If the list is new to you, start with this guide's twin, *The Season of Light*, which shows several of these groups in pictures.

Oaks. Acorns; buds clustered at the twig tip. *Section VI.*

Hickories and pecan. Pinnately compound; husk splits into four parts; solid pith. *Pecan on fronts, water hickory on clay flats.*

Walnuts. Pinnately compound; chambered pith; husk does not split. *Black walnut.*

Elms. Leaves doubly toothed, lopsided at the base; flat, papery, winged fruit. *American elm.*

Hackberries. Lopsided leaf base with three main veins; warty bark. *Sugarberry, abundant in the Delta.*

Sweetgum. Star-shaped leaves, alternate (unlike a maple's); spiny, ball-shaped fruit. *Fronts and ridges.*

Sycamore. Maple-like leaves; bud hidden in the base of the leafstalk; bark flakes to white. *Fronts.*

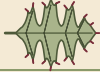
Willows and cottonwood. Willows: narrow leaves, each bud under one caplike scale; cottonwood: flattened leafstalk. *Black willow in sloughs, cottonwood on fronts.*

Baldcypress. A conifer that drops its needles; knees. *Swamps, with water tupelo.*

VI Work through one example: the Delta oaks

ONE FULL EXAMPLE

This example comes from the bottomlands around Black Oak, Arkansas, my hometown. Oaks are identified by group, then species.

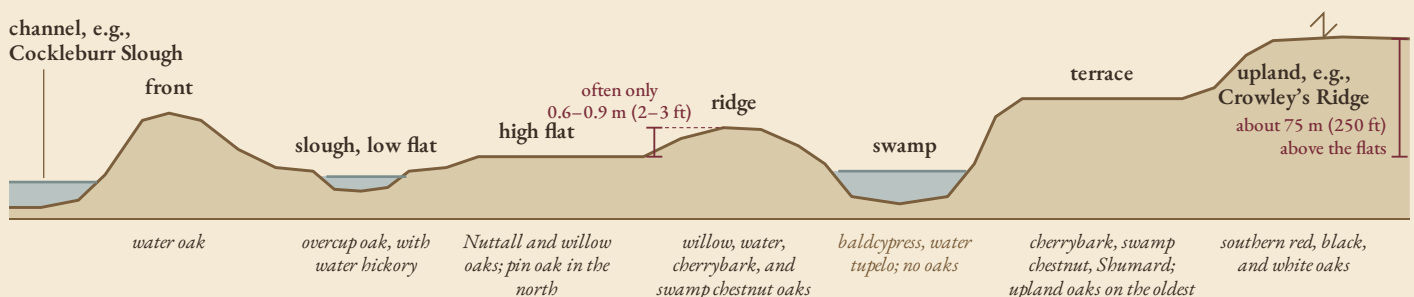
STEP 1	 RED OAK GROUP	 WHITE OAK GROUP
Leaf	a bristle at the tip of each lobe, or of an unlobed leaf	lobes and tip rounded; no bristles
Acorn maturation	two growing seasons; a twig in summer may carry small first-year and nearly mature second-year acorns	one growing season
Shell interior	densely hairy (i.e. feltlike)	smooth or thinly hairy
After dropping	bitter; dormant in winter, germinating in spring	sweeter; most germinate in fall, soon after dropping
Buds	usually pointed	usually rounded
Group characters. ^{2,7,22} Overcup, a white oak, is one Delta exception; its acorns stay dormant under winter floodwater and germinate in spring. ³		
STEP 2	LEAF	ACORN
RED OAKS		 1 cm (0.39 in)
Willow oak <i>Quercus phellos</i>	Unlobed and narrow, 5 to 13 cm (2 to 5 in) by up to 2.5 cm (1 in); smooth edges and a bristle tip.	 About 1.3 cm (½ in), round, striped; a thin saucer cup covers a quarter.
Water oak <i>Q. nigra</i>	Spoon-shaped, widest near the tip, 3 to 12 cm (1¼ to 4¾ in), often with two or three shallow lobes there; shape varies, and some leaves can pass for willow oak's or other oaks'. Brown leaves persist into winter.	 1 to 1.4 cm (about ½ in), nearly black; a flat saucer cup covers a quarter or less.
Pin oak <i>Q. palustris</i>	5 to 16 cm (2 to 6¼ in); five to seven lobes; sinuses two-thirds or more of the way to the midrib. Lower limbs droop and hold many short dead twigs (i.e. the pins).	 1 to 1.6 cm (¾ to ⅝ in), round, striped; a thin saucer cup covers a quarter.
Nuttall oak <i>Q. texana</i>	7.5 to 20 cm (3 to 8 in); five to eleven lobes; sinuses deep, wide, and rounded.	 1.5 to 2.6 cm (¾ to 1 in), oblong, striped; a third to a half sits in a deep cup pinched at its base; this acorn separates it from pin oak.
Shumard oak <i>Q. shumardii</i>	10 to 20 cm (4 to 8 in); five to nine lobes; sinuses past halfway; many bristles; hairless beneath except for tufts in the vein angles.	 1.4 to 3 cm (½ to 1¼ in), oblong; a shallow, thick saucer cup covers a quarter to a third.
Cherrybark oak <i>Q. pagoda</i>	9 to 30 cm (3½ to 12 in); five to eleven shallow lobes at right angles to the midrib; woolly beneath. Bark in scaly plates, like black cherry's.	 0.9 to 1.5 cm (¾ to ⅝ in), round; the cup covers a third to a half.
WHITE OAKS		
Overcup oak <i>Q. lyrata</i>	10 to 25 cm (4 to 10 in); lyre-shaped, with five to nine irregular lobes, some cut nearly to the midrib; often white and hairy beneath.	 1.2 to 2.5 cm (½ to 1 in), almost enclosed by a warty cup; the spongy shell floats.
Swamp chestnut oak <i>Q. michauxii</i>	10 to 28 cm (4 to 11 in); unlobed, widest near the tip, with large, rounded teeth; feltlike beneath.	 2.5 to 3.8 cm (1 to 1½ in); a bowl-shaped cup of thick scales covers a third to a half.

Crowley's Ridge red oaks include black oak (large, fuzzy, angled buds; yellow inner bark) and southern red oak (turkey-foot leaf, long end lobe).^{4,23}

Characters that separate the bottomland oaks in this example.^{2-4,24} Acorns are drawn to one scale, with shapes simplified.

VII Use your location

Each Delta oak tends to occupy a particular floodplain position, as the figure shows.^{3,21,23} Take care in towns, around homesteads, and in similar places, because what we planted does not always follow what the land says should be there.



Where each oak grows across a Delta floodplain, from the wettest sites to the driest; cherrybark and swamp chestnut oaks may be absent from the Mississippi River's own floodplain.^{3,21,23,25} Do not read it left to right: natural drivers and people set the order, extent, and place of each site, but the pattern holds. Floodplain relief is exaggerated, and the upland is much higher than drawn.

Field card for an unidentified tree

Use one card per tree, and collect a twig with several leaves rather than a single leaf.

Place	Date	Tree number
1 Arrangement	☐ opposite ☐ alternate ☐ whorled · nodes checked _____	
2 Leaf	☐ simple ☐ pinnately compound ☐ palmately compound · leaflets _____	
3 Edge	☐ entire ☐ toothed ☐ lobed · bristle tips ☐ yes ☐ no	
4 Veins	☐ one midrib ☐ from the base ☐ curving toward the tip	
5 Size and shape	length _____ cm · widest ☐ near the tip ☐ middle ☐ near the base · base ☐ even ☐ lopsided	
6 Twig	buds ☐ clustered at the tip ☐ single · pith ☐ solid ☐ chambered	
7 Fruit	☐ acorn ☐ samara ☐ drupe or berry ☐ nut in a husk ☐ pod ☐ capsule ☐ none · cup covers _____	
8 Bark	☐ smooth ☐ furrowed ☐ plated ☐ scaly ☐ warty ☐ flaking	
9 Ground	☐ front ☐ flat ☐ slough ☐ ridge ☐ terrace ☐ upland · water in winter ☐ yes ☐ no	
10 Photographs	☐ whole tree ☐ bark ☐ twig with leaves ☐ leaf, both sides ☐ fruit	

Use the card with the key in the same order: twig first, then leaf, then fruit.

Sources

Each source is shortened to its authors and year, where it was published, and its subject; the journal, volume, and pages, or the publisher or web address, find it.

- 1 Turland and others 2025.** *International Code of Nomenclature for algae, fungi, and plants (Madrid Code)*. University of Chicago Press.
- 2 Flora of North America Editorial Committee 1997.** *Flora of North America*, volume 3. Oxford University Press. floranorthamerica.org
- 3 Burns and Honkala 1990.** *Silvics of North America*, volume 2, *Hardwoods*. USDA Forest Service, Agriculture Handbook 654.
- 4 Virginia Tech.** Dendrology: tree identification primer and species fact sheets. dendro.cnre.vt.edu
- 5 Stephen F. Austin State University.** SFA Dendro: morphology glossary. sfadendro.com
- 6 Smallidge 2021.** Cornell Small Farms Program. Features of trees useful for identification. smallfarms.cornell.edu
- 7 Missouri Department of Conservation.** Field guide: oaks, black gum, and the species pages. mdc.mo.gov
- 8 Donoghue 2026.** *Bulletin of Phylogenetic Nomenclature* 2:11–27. Defining Dipsacales, Adoxaceae, and Caprifoliaceae.
- 9 POWO 2026.** *Plants of the World Online*. Royal Botanic Gardens, Kew. powo.science.kew.org
- 10 Angiosperm Phylogeny Group 2016.** *Botanical Journal of the Linnean Society* 181:1–20. The APG IV classification of flowering plants.
- 11 Petrides 1998.** *A Field Guide to Eastern Trees*. Peterson Field Guides. Houghton Mifflin.
- 12 Sibley 2009.** *The Sibley Guide to Trees*. Alfred A. Knopf.
- 13 Moore 2014.** *Trees of Arkansas*. Eighth edition. Arkansas Forestry Commission.
- 14 Self and Kushla.** *Know Your Trees*. Mississippi State University Extension, Publication 146. extension.msstate.edu
- 15 Louisiana State University.** *Louisiana Plant ID*. rnr.lsu.edu/plantid
- 16 University of Arkansas Herbarium.** *Trees, Shrubs, and Woody Vines of Arkansas*. biology.uark.edu/herbarium
- 17 U.S. Geological Survey.** Plant identification: flowering dogwood. warcapps.usgs.gov/PlantID
- 18 Weakley and the Southeastern Flora Team.** *Flora of the Southeastern United States*. North Carolina Botanical Garden. fsus.ncbg.unc.edu
- 19 Lady Bird Johnson Wildflower Center.** Native Plant Database. wildflower.org
- 20 Vogelpohl 2019.** Arkansas Native Plant Society. Know your natives: red buckeye. anps.org
- 21 Self 2020.** *Bottomland Hardwood Management: Species/Site Relationships*. Mississippi State University Extension, Publication 2004.
- 22 Self and others 2024.** *Growing Your Own Oak Seedlings*. Mississippi State University Extension, Publication 2421.
- 23 Self and others 2024.** *Hardwood Ecology*. Mississippi State University Extension, Publication 3617.
- 24 Sullivan 1993.** Fire Effects Information System, USDA Forest Service. *Quercus lyrata*. fs.usda.gov/database/feis
- 25 Stroud.** Crowley's Ridge. *CALS Encyclopedia of Arkansas*. encyclopediaofarkansas.net

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