

Key to trees from William Harlow (1957) *Trees of the Eastern United States and Canada.*



How to Use the Keys

A key, in this case, is a series of signboards or clues that lead you, sometimes through a forest of unknowns, to a particular tree or group of trees. Following such a trail develops that keenness for observing detail which is the mark of the true detective. When you discover a new tree whose identity you would like to learn, the keys should enable you to do so. However, it is of the greatest importance that you select typical material. In most cases, the keys are based on leaf features, but flowers, fruit, twigs, and general appearance may also be included, and this means that you should observe all that you can of these features as well. To get started, select a leaf or, in some of the conifers, a branchlet that appears to be "average." Avoid unusually large or small ones, and especially do not choose stump sprouts, since these often bear leaves quite different in size, shape, and arrangement from average growth.

We now approach the beginning of the general key (see below). Notice that we must go in one of two directions, no straddling possible. Let us assume that the leaf chosen is deciduous, opposite, simple, and cut into lobes that radiate from the base (palmate). Since it is not evergreen, the second No. 1 directs us to No. 8. Here it is clear that the leaves are not at all needlelike, so the second No. 8 sends us to No. 9. The leaves being opposite, the search is directed from the first No. 9 to No. 10. The leaves are simple; so No. 11 is indicated. Here the first part reads "Leaves lobed palmately like fingers on a hand"; and since this describes our unknown leaf, we know that it is some kind of maple. Turning now to the species key to maples, we can find out what kind of maple it is. In this case, more specific features would be needed to complete the identification. As a final check, compare the leaf with the illustration and description given in the book. No matter how carefully made, keys are never foolproof until used by many people and in different localities. If after careful use there seem to be "rough spots," suggestions will be welcome, accompanied with samples of the material in question.

GENERAL KEY TO TREE GROUPS

(Before using this key *make certain* that you do not have poison sumac, poison ivy, or poison oak (p. 230); these are not included in the key.)

- | | | |
|----|--|---|
| 1. | Leaves, needles, or foliage, evergreen ² | 2 |
| 1. | Leaves or foliage, deciduous (falling at the end of the growing season) | 8 |
| | 2. Leaves, 1/2" or more in width, broad Holly (p. 235), Sweetbay (p. 185), Rhododendron and Mountain-laurel (p. 263) | |
| | 2. Leaves, less than 1/2" wide, needlelike, narrow, or small and scalelike | 3 |
| 3. | Leaves, small and scalelike, close together, and overlapping Cedars (p. 69) | |
| 3. | Leaves, not scalelike, long and narrow | 4 |
| | 4. Leaves, needlelike, in 2s, 3s, or 5s, united at the base to form bundles; when held together, the needles of each bundle form a cylinder Pines (p. 33) | |
| | 4. Leaves or needles, not in bundles, but occur singly | 5 |
| 5. | Needles, paired or in 3s around the twig Eastern redcedar and Oldfield juniper (p. 74) | |
| 5. | Needles or leaves, alternate, in spirals, not opposite each other | 6 |
| | 6. Leaves, needlelike, 4-sided (in one species diamond-shaped) in cross section (roll between thumb and finger to feel edges) Spruces (p. 55) | |
| | 6. Leaves, blunt, with essentially parallel sides, flat in cross section | 7 |
| 7. | Twigs, stout; buds, sticky; older twigs show small circular scars where leaves have fallen off; top of tree, stiff and spirelike Balsam fir (p. 66) | |
| 7. | Twigs, slender; buds, not sticky; top of tree, flexible, bends over Hemlock (p. 63) | |
| | 8. Leaves, narrow, almost needlelike, many times longer than wide, on old twigs occur in tufts on woody spurs Tamarack (p. 52) | |
| | 8. Leaves, broader, not at all needlelike | 9 |

9.	Leaves, opposite or in 3s	10
9.	Leaves, alternate (look on normally fast-growing twigs; on dwarfed growth, the crowded leaves may appear opposite when really alternate)	17
10.	Leaves, simply	11
10.	Leaves, compound	16
11.	Leaves, lobed palmately like fingers on a hand Maples (p. 236)	
11.	Leaves, notlobed	12
12.	Leaf margin, smooth, not toothed.....	13
12.	Leaf margin, toothed (serrate).....	16
13.	Side veins parallel margin Dogwoods (p. 259)	
13.	Side veins do not parallel margin	14
14.	Leaves, heart-shaped, usually in whorls of 3 Catalpa (p. 274)	
14.	Leaves, elliptical, paired Fringetree (p. 266)	
15.	Side veins parallel margin Buckthorn (p. 253)	
15.	Side veins do not parallel margin. Viburnums (p. 276)	
16.	Leaves, palmately compound (see No. 11) Buckeyes (p. 250)	
16.	Leaves, pinnately compound Boelder (p. 246) Ashes (p. 266)	
17.	Leaves, simple	18
17.	Leaves, compound,	50
18.	Leaves, lobed	19
18.	Leaves, unlobed	26
19.	Undersurface of leaf, covered with silvery wool White poplar (p. 97)	
19.	Undersurface, not silvery-woolly	20
20.	Ends of lobes each bear a bristle or hair tip.... Red oaks (p. 141)	
20.	End of lobes, not bristle-tipped	21
21.	Leaves and twigs have a spicy odor and flavor Sassafras (p. 189)	
21.	Leaves and twigs, not spicy	22
22.	Outline of leaf, elliptical or broadest above the middle White oaks (p. 141)	
22.	Outline of leaf, circular or nearly so	23
23.	Base of leaf stem, hollow, enclosing the next year's bud Sycamores (p. 195)	
23.	Base of leaf stem, solid	24
24.	Sap of broken leaves and twigs, milky (cloudy) Mulberries (p. 178)	
24.	Sap, clear, not cloudy	25
25.	Leaves, mostly 4-lobed, the apex "chopped off" or indented with a wide notch Tuliptree (p. 185)	
25.	Leaves, 5-or 7-lobed, star-shaped. Sweetgum (p. 191)	
26.	Leaf stem, flattened so that the leaf trembles in the slightest breeze Poplars, aspens (p. 85)	
26.	Leaf stem, circular or grooved in cross section	27
27.	Leaf margin, entire, not toothed in any way	28
27.	Leaf margin, serrate or with rounded teeth	33
28.	Leaves, tipped with a bristle or hair Shingle and willow oaks (pp. 165, 167)	
28.	Leaves, lacking a bristle at the end	29
29.	Sap, milky (break leaf stem); twigs, armed with sharp thorns Osageorange (p. 181)	
29.	Sap, clear; twigs, unarmed	30
30.	Leaves and twigs, with a spicy odor and flavor Sassafras (p. 189)	
30.	Leaves and twigs, not spicy	31

31. Leaves, heart- or kidney-shaped **Redbud** (p. 217)
31. Leaves, elliptical to oval or widest above the middle **32**
32. Pith, when sectioned lengthwise, shows faint cross bands of darker tissue **Black tupelo** (p. 258)
32. Pith, either chambered or, if solid, without cross bands **Cucumbertree** (p. 182), **Pawpaw** (p. 188), **Persimmon** (p. 264), **Alternate-leaved dogwood** (p. 263)
33. Leaf margin, with coarse wavy or rounded "teeth" **Swamp white oak** (p. 151), **Chestnut oak** (p. 150), **Witchhazel** (p. 194)
33. Leaf margin, with sharp teeth; or if these are rounded, they are very small **34**
34. Sap, milky or cloudy **Mulberries** (p. 178)
34. Sap, clear (From here to No. 50 the trees get "taller and closer together" and the trail is dimmer; only the alert will not get lost!) **35**
35. Leaves, average 4" or more in diameter, nearly circular, somewhat heart-shaped at the base **Basswood** (p. 255)
35. Leaves, not circular or, if so, less than 4" in diameter **36**
36. Leaves, with medium-sized to large definitely *single* teeth on margin **37**
36. Leaves, with double teeth or such small ones that it is difficult to see whether they are single or double **40**
37. Leaves, lopsided and more or less heart-shaped at the base; fruit, a large-pitted drupe, the thin flesh tasting like a date **Hackberry** (p. 176)
37. Leaves, more or less equal at the base, not heartshaped; fruit, a nut **38**
38. Teeth, ending in a hair or bristle **Chestnuts** (p. 136)
38. Teeth, without bristles **39**
39. Teeth, sharp; leaf, with a papery rattle; buds, long and lance-shaped **Beech** (p. 133)
39. Teeth, slightly rounded like a nipple; buds, short and egg-shaped **Chinkapin oak** (p. 153)
40. Twigs, armed with long thorns **Thornapple** (p. 206), **Wild pear** (p. 209), **Flowering crab** (p. 208)
40. Twigs, without thorns or spinets **41**
41. Leaves, with conspicuous medium-sized to large, double teeth **Elms** (p. 168)
41. Leaves, with *small* single or double teeth **42**
42. Twigs, stout; (see illustration, 92) pith, 5-angled in cross section; leaves, broadly egg-shaped almost circular **Balsam poplar** (p. 93), **Balm-of-Gilead** (p. 95), **Swamp Cottonwood** (p. 95) to
42. Twigs, slender; pith, triangular, circular, or so small as not to be easily seen; leaves, narrowly egg-shaped, lance-shaped, or elliptical to oval. **43**
43. Pith, conspicuously triangular when sliced crosswise (make several sections) **Alders** (p. 129)
43. Pith, circular or so small as not to be easily seen **44**
44. Twigs, with an interlately bitter quinine taste or bitter-almond flavor **45**
44. Twigs, not as above **46**
45. Twigs, bitter; bud, covered by a single scale; seeds, very small, silky haired **Willows** (p. 77)
45. Twigs, with a faint to strong bitter-almond flavor; bud, with 2 or more scales; seeds, not silky haired, enclosed in a fleshy fruit **Cherries, Plums, Peach, Shadbush** (pp. 199 to 206)
46. Veins parallel margin; fruit, fleshy **Buckthorn** (p. 253)
46. Veins do not parallel margin; fruit, dry or fleshy **47**
47. Twigs have a peculiar sweetish taste (not wintergreen); leaf, crinkled, more or less hairy; fruit, an apple **Wild apple** (p. 207)
47. Tree, without the preceding combination..... **48**
48. Bark, papery; short, dwarfed twigs (spur shoots) bearing tufted leaves common on older growth; fruit, a very small, 2-winged nutlet ("seed") borne in a cone **Birches** (p. 116)

48. Bark, smooth and blue-gray or finely shreddy; spur shoots, lacking; seed, uninged **49**
49. Bark, smooth and blue-gray; trunk, “muscular” appearing; nutlet, backed by a 3-lobed leafy bract..
American Hornbeam (p. 132)
49. Bark, shreddy; nutlet, enclosed in a papery envelope **Hophornbeam** (p. 130)
50. Leaves, twice or thrice compound **51**
50. Leaves, once compound **53**
51. Leaves, large, 1-3 ft. long **52**
51. Leaves, smaller, less than 1 ft. in length; twigs, with long, sharp, usually 2- to 3-branched thorns
Honeylocust (p. 214)
52. Leaflets, entire; fruit, a thick short pod **Coffeetree** (p. 219)
52. Leaflets, serrate; fruit, a small drupe; the stout twigs with numerous short sharp spines **Devil's walking stick** (p. 257)
53. Leaves or twigs, when broken, exude a milky sap **Sumacs** (p. 228)
53. Sap, cleat **54**
54. Leaflets, 3 in number; when crushed, with a rank somewhat orange-peel odor **Hoptree** (p. 225)
54. Leaflets, 5 or more **55**
55. Twigs, armed with spines or thorns **56**
55. Twigs, unarmed **58**
56. Twigs, with long, branched thorns; leaflet margins, finely toothed; fruit, a mahogany-colored, twisted pod **Honeylocust** (p. 214)
56. Without the preceding combination; paired spines usually present **57**
57. Crushed leaves, with a strong orange odor; small spines, on the leaf stem **Pricklyash** (p. 223)
57. Leaves, without orange odor; spines, on woody twig only **Locusts** (p.220)
58. Crushed leaves, with a peculiar, disagreeable odor like popcorn with rancid butter or, as a student once said, “like a zoo”; leaflets, toothed only near the base **Tree-of-Heaven** (p. 226)
58. Leaves, fragrant or odorless; margins, entire or toothed all the way along **59**
59. Leaflets, entire; base of leaf stem, hollow, enclosing next year's bud; fruit, a beanlike pod **Yellow-wood** (p. 223)
59. Leaflets, serrate; buds, visible; fruit, a nut, or small red “apple” **60**
60. Second year's pith shows chambers when sliced lengthwise **Walnuts** (p. 97)
60. Pith, soli **61**
61. Leaves, more or less fragrant when crushed; leaflets, large, mostly 3” or more in length; fruit, a nut **Hickories** (p. 103)
61. Leaves, not fragrant; leaflets, small, mostly about 2' long; fruit, a small red apple **Mountain-ashes** (p. 211)