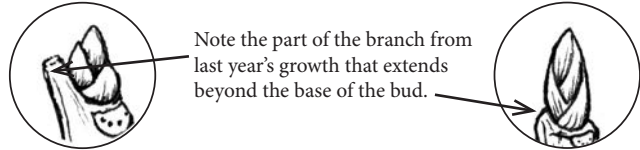


GLOSSARY

Terminal Bud: The bud formed at the tip of the twig

False Terminal Bud: A lateral bud that assumes the function of the terminal bud. When the growing tip withers or falls away, the closest lateral bud to the twig tip substitutes as a terminal bud

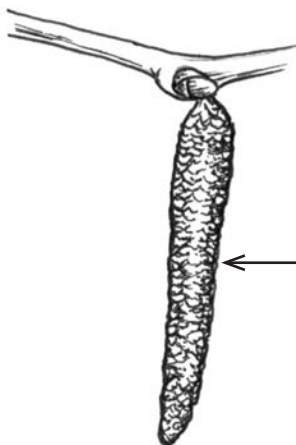


Bud Scales: Small scale-like structures that are modified leaves covering the bud during its winter dormancy

Lateral Bud: The buds formed on the side of a twig, not the bud at the end of the twig

Leaf Scar: A scar left on the twig when the leaf falls

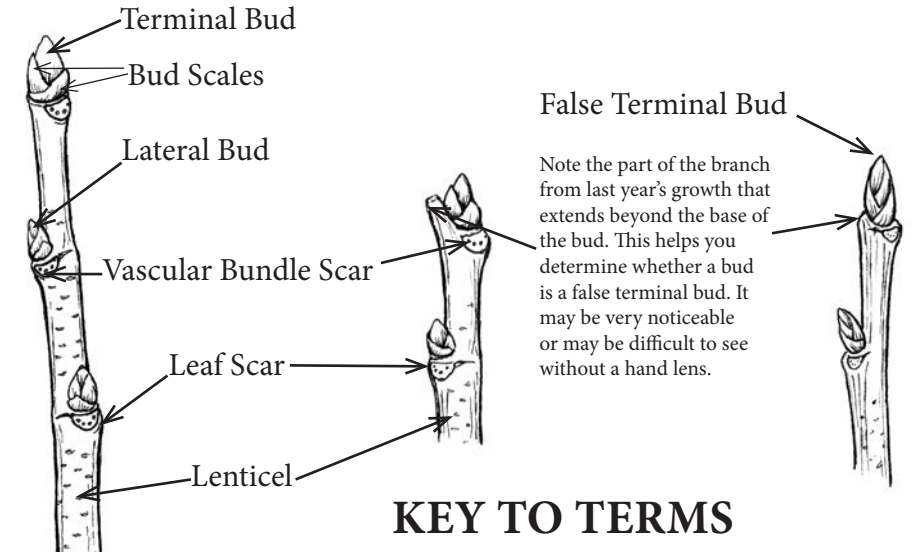
Vascular Bundle Scars: A small mark on a leaf scar indicating a point where a vein from the leaf was once connected with the stem



Lenticel: A small corky area or speck serving as a breathing pore

Catkin: A dense, cylindrical, often drooping cluster of flowers

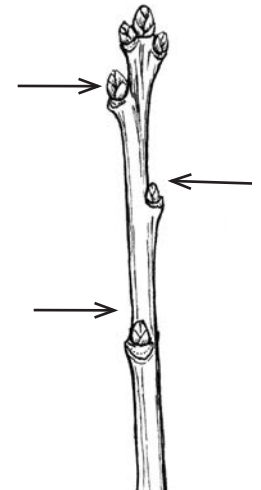
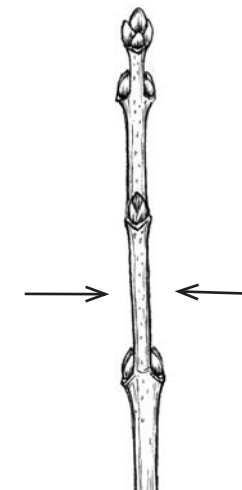
WINTER TREE IDENTIFICATION KEY



KEY TO TERMS

1. Leaf scars opposite...Got to 2 OR 1. Leaf scars alternate...Go to 3

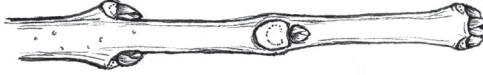
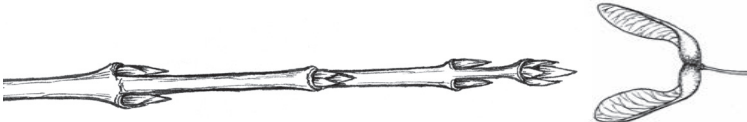
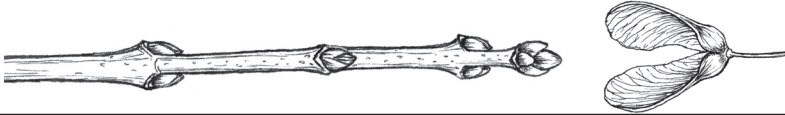
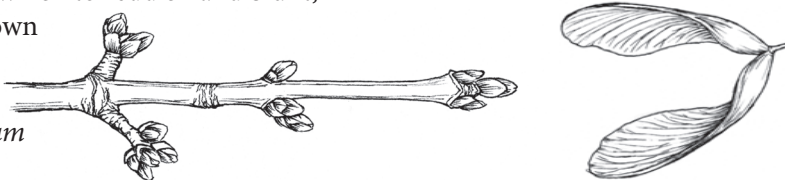
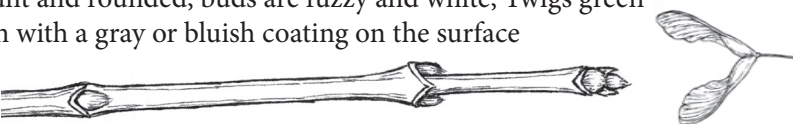
START HERE

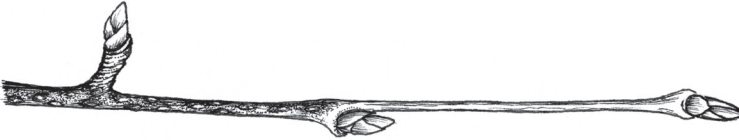
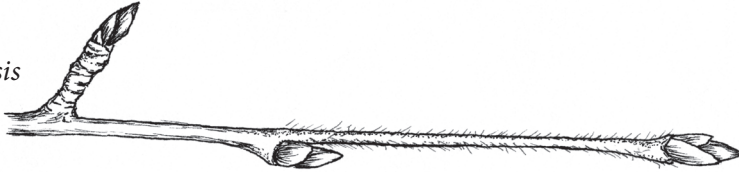


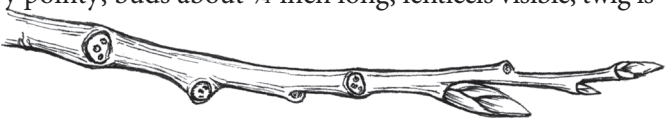
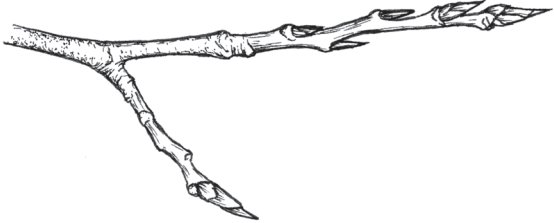
NEXT

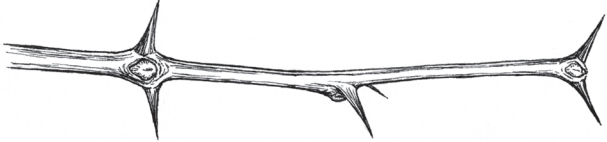
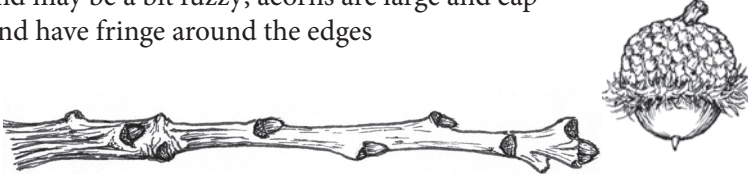
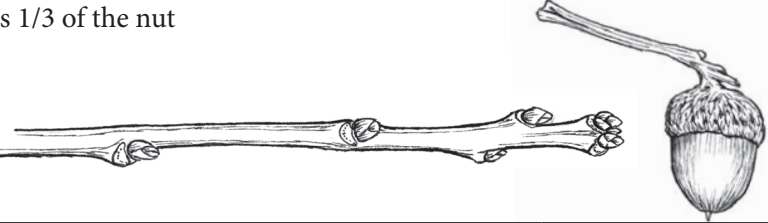


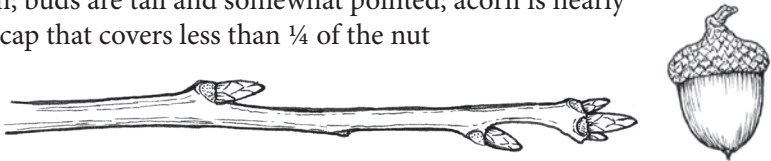
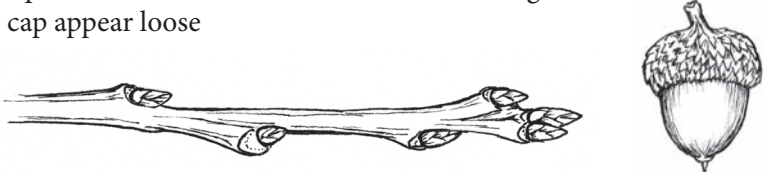
LEAF-Wisconsin's K-12 Forestry Education Program
Wisconsin Center for Environmental Education
College of Natural Resources
University of Wisconsin-Stevens Point

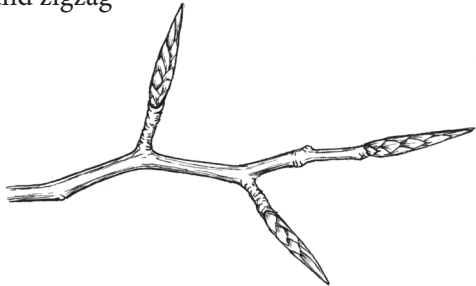
2	Vascular bundle scars are very numerous and joined in a line; buds are broadly rounded; twigs are fairly stout	Fraxinus Ash see 2a-c below
	2a. Terminal bud cone-shaped; first pair of lateral buds below the terminal bud are slightly below it on the branch; leaf scar is nearly oval <i>Fraxinus nigra</i> black ash 	
	2b. Terminal bud is slightly cone-shaped; first pair of lateral buds below the terminal bud touch the bottom of the terminal bud; leaf scar is U-shaped and the lateral bud sits in the “notch” of the leaf scar <i>Fraxinus americana</i> white ash 	
	2c. Terminal bud is rounded; first pair of lateral buds below the terminal bud touch the bottom of the terminal bud; the leaf scar is oval <i>Fraxinus pennsylvanica</i> green ash 	
2	Vascular bundle scars 3-7, separate and distinct; Leaf scars narrow and crescent-shaped; twigs fairly slender	Acer Maple see 2d-g below
	2d. Terminal bud quite pointy and brown; twigs gray or brown, slender and shiny with lighter lenticels <i>Acer saccharum</i> sugar maple 	
	2e. Terminal bud reddish and blunt; leaf scars V-shaped; Twigs dark red with small lenticels <i>Acer rubrum</i> red maple 	
	2f. Terminal bud brownish to reddish and blunt; Twigs reddish brown <i>Acer saccharinum</i> silver maple 	
	2g. Terminal bud blunt and rounded; buds are fuzzy and white; Twigs green to purplish, often with a gray or bluish coating on the surface <i>Acer negundo</i> boxelder 	

15	3 bud scales	Betula Birch See 15 a-c below
	15a. Not hairy twig, lenticels prominent; Buds brownish, acute; twigs straight; catkins often present; bark is reddish-brown with light lenticels on younger stems, later turning chalky to creamy white peeling in horizontal papery strips <i>Betula papyrifera</i> white birch 	
	15b. Young twigs are hairy, older twigs smooth, shiny; catkins often present; bark often with wintergreen smell; bark is shiny bronze on younger stems peeling into thin papery strips <i>Betula alleghaniensis</i> yellow birch 	
	15c. Twig is slender and orangish-brown; bark is salmon to rust-colored on young stems, developing papery scales peeling with several colors visible <i>Betula nigra</i> river birch 	
15	Many bud scales	Go to 16
16	Bud scales in two vertical rows; floral buds distinctly larger and rounder than foliage buds; no catkins <i>Ulmus sp.</i> elm species 	
	16 Bud scales not in two rows; buds fairly uniform in size; bud tips point away from the twig; catkin usually present; seeds hang in clusters from branches and often stay on through winter <i>Ostrya virginiana</i> ironwood (hop hornbeam) 	

	11a. Gummy buds that are very pointy; buds about ¾ inch long; lenticels visible; twig is somewhat yellowish <i>Populus deltoides</i> cottonwood	
	11b. Not gummy buds and they may be somewhat fuzzy; no lenticels noticeable, bud scales are hairy; leaf scars are heart-shaped; twigs are gray-brown <i>Populus grandidentata</i> big-toothed aspen	
	11c. Buds may or may not be gummy and are reddish-brown; twigs are reddish-brown and may have gray waxy film <i>Populus tremuloides</i> trembling aspen	
	11d. Gummy buds that are 1 inch long; reddish-brown twigs; lenticels visible and somewhat orange in color; buds have fragrant odor <i>Populus balsamifera</i> balsam poplar	
12	Bud tips pressed against twig; twig light red-brown, zigzag, and have numerous light lenticels <i>Celtis occidentalis</i> hackberry	
12	Bud tips not pressed against the twig	Go to 13
13	1or 2 visible bud scales	Go to 14
13	3 or more visible bud scales	Go to 15
14	2 visible bud scales; buds smooth, rounded, reddish; twigs smooth, reddish or greenish gray, and zigzag <i>Tilia americana</i> American basswood	
14	One hood-like bud scale; twigs often slender and flexible <i>Salix sp.</i> willow species	

3	Twigs zigzag, red-brown, and armed with paired spines near the leaf scar <i>Robinia pseudoacacia</i> black locust	
3	Twigs without spines	Go to 4
4	Leaf scars are densely clustered on very short peg-like spur branches; twigs slender and light brown <i>Larix laricina</i> tamarack	
4	Leaf scars scattered along more or less elongate twigs	Go to 5
5	Terminal bud present	Go to 6
5	Terminal bud absent (false terminal bud)	Go to 12
6	Buds crowded near tip of twig	Quercus Oak See 6a-f
	6a. Short rounded buds; hairless; acorns are oblong and cap covers ¼ of the nut <i>Quercus alba</i> white oak	
	6b. Twig is quite stout, yellow-brown and may have corky ridges; buds are small and rounded and may be a bit fuzzy; acorns are large and cap covers ½ of the nut and have fringe around the edges <i>Quercus macrocarpa</i> bur oak	
	6c. Twig is light brown; buds are short and rounded; acorn is 1 inch long and cap covers 1/3 of the nut <i>Quercus bicolor</i> swamp white oak	

	6d. Twig is red-brown; buds are tall and somewhat pointed; acorn is nearly round with a flat cap that covers less than ¼ of the nut <i>Quercus rubra</i> red oak 	
	6e. Twigs slender red-brown and shiny; buds are pointed; acorns have caps that enclose 1/3 to ½ of the nut <i>Quercus ellipsoidalis</i> northern pin oak 	
	6f. Twig is stout and red-brown to grey-green; buds are large, buff-colored, pointed and fuzzy; acorns have cap that covers ½ to 1/3 of the nut and the edges of the scales on the cap appear loose <i>Quercus velutina</i> black oak 	
	6a.  6b.  6c.  6d.  6e.  6f.  white oak <i>Quercus alba</i> bur oak <i>Quercus macrocarpa</i> swamp white oak <i>Quercus bicolor</i> red oak <i>Quercus rubra</i> n. pin oak <i>Quercus ellipsoidalis</i> black oak <i>Quercus velutina</i>	
	6 Buds not crowded near tip of twig	Go to 7

7	Leaf scars heart shaped	Go to 8
7	Leaf scars other than heart-shaped or are inconspicuous	Go to 9
8	Twigs stout with numerous light lenticels; buds large, conspicuous; large terminal bud slightly hairy; fruit has a tan husk that is distinctly 4-ribbed; bark “shaggy” <i>Carya ovata</i> shagbark hickory 	
8	Twigs stout and light brown; Buds gray and fuzzy; leaf scar described as “monkey face”; Pith chambered; fruit has green husk that contains a round, black nut <i>Juglans nigra</i> black walnut 	
9	Leaf scar inconspicuous, buds narrow, acute, ¾ to 1 inch long, lance-shaped; Many bud scales and they overlap; twigs slender and zigzag <i>Fagus grandifolia</i> beech 	
9	Leaf scars visible although not all large	Go to 10
10	More than 3 vascular bundle scars; Buds dark red and sticky <i>Sorbus americana</i> American mountain-ash 	
10	3 vascular bundle scars or scars not distinct	Go to 11
11	Vascular bundle scars often not distinct; leaf scars small and semi-circular; buds are small with glossy scales; twigs reddish brown to gray usually with short spur shoots on older growth; twigs sometimes bitter-almond taste <i>Prunus serotina</i> black cherry 	
11	Vascular bundle scars 3 distinct dots; Leaf scars nearly semi-circular; Bud scales finely hairy, buds sometimes sticky; twigs without flavor	Populus see 11a-d Next Page