

WINTER KEY TO NATIVE MARYLAND OAKS (*Quercus* genus) 1/24/12 Cris Fleming  
 From Brown and Brown, Woody Plants of Maryland (plus other books and personal observation)  
 The descriptions below are visible under 10 power magnification.

- 1a.** Fruit maturing the first year, no immature acorns on twigs; lobes of any persisting leaves not bristle-tipped; inner surface of acorn shell smooth; base of cup (where attaches to stalk) usually roundish; buds roundish or ovoid; White oak group, **2**
- 2a,** Bark light gray, flaky to ridged, **3**
- 3a.** Buds subglobose or ellipsoid, nearly or quite glabrous, **4**
  - 4a.** Buds 3-5 mm. long, reddish brown, with some pale hairs; twigs reddish-purple to gray, glabrous; (bark light gray with shallow furrows below and peeling ridges on upper part of tree, lower branches not drooping; acorns ovoid, up to 2cm. long with shallow cup, bumpy scales, and short stalk, roots form early)...1. Q. alba (White oak)
  - 4b.** Buds 2-4 mm., roundish, smooth, orangish-brown; twigs tan, tinted with orange, usually glabrous; lower branches usually drooping; (bark similar to *Q. alba* but rougher with deeper furrows, peels in thin curls; acorn over 2 cm. with deep cup over at least ½ of nut, covered in grayish pubescence with thick, pointed scales and lower scales fringed, long thin stalk up to 10cm.).... 5..Q. bicolor (Swamp white oak)
- 3b.** Buds ovoid or conical ovoid, **5**
  - 5a.** Twigs moderate, yellow to tan, new growth with yellowish pubescence; buds 2-4 mm., reddish-brown, pubescent to silky; (bark light gray, rough, scaly; acorns about 2 cm. with very short stalk, cup with narrow scales covering about ½ of nut, cup often retained on twigs).....2. Q. stellata (Post oak)
  - 5b.** Twigs stout, gray, or gray tinted with orange, pubescent to glabrate; (2<sup>nd</sup> year twigs with corky ridges); buds 3-6 mm. gray pubescent, more conical than others in White oak group; buds and leaf scars raised; terminal bud; (bark thick in long rectangular twisted ridges, pale to medium gray; very large acorns up to 5 cm. with deep bowl-shaped cup covering almost the entire nut, lower scales deeply fringed).....  
 .....4 Q. macrocarpa ( Bur oak)
  - 5c.** Twigs orange to orange brown or somewhat grayish, **6**
    - 6a.** Buds to 6 mm, reddish or orangeish, acute at tips, scales puberulous with (darker) margins, twigs reddish-brown to grayish with some short-lived hairs; (bark pale gray, shallowly furrowed with flaky ridges, similar to *Q. alba*; acorn usually stalked, 2.5-3.5 cm. long, obovoid and stout, light reddish brown, cup thin and bowl-shaped, scales of cup densely puberulent, pointed and free to base).....  
 .....6.Q. michauxii (Swamp chestnut oak)
    - 6b.** Buds 3 mm., acute, brown, puberulent or glabrous, scales often pale-margined; twigs orange-brown, slender (bark pale gray, flaky, very similar to *Q. alba*; nuts ovoid, 1.2-2 cm. long, short-stalked, cup less than ½ length of nut, with grayish-brown tomentose scales free only at tips).....  
 .....7.Q. muehlenbergii (Chinkapin oak)
    - 6c.** Buds 3 mm, obtuse (blunt), light brown, with pale tomentum near margins of scales; twigs slender, young twigs pubescent, greenish-red, older twigs usually glabrous orange to grayish brown, (bark light gray with scaly ridges; acorn almost globose 1.2-2.5 cm. long, nearly covered by bowl-shaped cup of bumpy, ragged-edged, pubescent scales).....3..Q. lyrata (Overcup oak)

- 2b.** Bark dark, more or less ridged, usually not flaking, **7**
- 7a.** Tree; buds 5-10 mm, distinctly conical (with pointed tips), reddish-brown, outer scales may have some pale hairs on margin; twigs orange-brown, sometimes tinted with purple, (twigs distinctly angled or ridged; bark very dark gray, with deep V-shaped vertical furrows and broad ridges, inner bark bright reddish-brown); acorn 2.5-3.5 cm. long (large, ovoid nut lustrous brown, with deep bowl-like pubescent cup with thick diamond-shaped scales covering ¼ to ½ of nut).....9. *Q. prinus*; *Q. montana* (Chestnut oak)
- 7b.** Shrub 1-3 m.; buds 1.5-3 mm (buds ovoid; twigs glabrous; bark gray with scaly ridges; acorns 1-1.5 cm. long, short-stalked blunt cup with hairy scales covers 1/3-1/2 of nut) .....8. *Q. prinoides* (Dwarf chestnut oak)
- 1b.** Fruit maturing at end of second season, immature acorns on twigs; lobes of any persistent leaves bristle-tipped; shells of mature acorns hairy on the inner surface, scales of cup thin (buds more or less pointed, base of acorn cups (where attached to stalk) in some species is thick, knobby, and/or top-shaped; Red oak group) **8**
- 8a.** Trees **9**
- 9a.** Buds definitely angular in cross section **10**
- 10a.** Buds 6-12 mm. long, very hairy or tomentose **11**
- 11a.** Buds ovoid (and pointed); scales tan with soft pubescence; (twigs glabrous, strongly angled; bark dark brown-gray with irregular rectangular blocks; inner bark yellow; acorn with thick, short stalk, broadly ovoid to round, pubescent;; deep bowl-shaped clasping cup covers at least ½ of nut, long pale scales forming a broad fringe).....12. *Q. velutina* (Black oak)
- 11b.** Buds long-ovoid to conical with woolly rusty-brown pubescence (somewhat angled; twigs stout, pubescent; bark thick, rough, nearly black with deep fissures and scaly blocks, inner bark orange; tree usually under 20 meters, grows in poor soil; acorn ovoid, short- stalked, deep cup top-shaped with loose pubescent scales).....7. *Q. marilandica* (Blackjack oak)
- 10b.** Buds to 6 mm. long, glabrous; twigs glabrous or thinly pubescent **12**
- 12a.** Buds long- ovoid, 4-6 mm. long, light brown (sharply pointed, edges of scales thin and papery); twigs pale brown (or grayish-brown; large tree with deeply furrowed bark, furrows dark brown and ridges much lighter, flat and scaly; acorn 1.5-3 cm. long, thick light brown cup saucer-shaped with puberulent scales, edges of lower scales fringed and clasping nut)..... 11. *Q. shumardii* (Shumard's oak)
- 12b.** Buds ovoid, 3-6 mm. long, dark reddish-brown (acute, angled); young twigs dull red,(older twigs grayish, bark medium gray with irregular ridges, acorns 1-1.5 cm. long, cup shallow saucer with tight scales. In MD, found on eastern shore along streams or in wet woods)..... 18. *Q. nigra* (Water oak)
- 9b.** Buds not angular in cross-section, or only slightly so **13**
- 13a.** Buds usually not over 3 mm. long, ovoid, acute **14**
- 14a.** Buds reddish to reddish-brown, scale margins with pale hairs; slender, glabrous twigs reddish or greenish (brown, mature bark very dark with narrow ridges; acorn very small, 1 cm. or less, globose, cup shallow, saucer-like, scales tight and pubescent).....*Q. phellos* (Willow oak)
- 14b.** Buds brown with some gray pubescence (buds ovoid, sharp-pointed); twigs brown, glabrous; (bark dark brown in low ridges; acorns ovoid to globose, 12-18 mm. long, about 1/3-1/2 covered by thin cup with blunt pubescent scales)..... 19. *Q. imbricaria* (Shingle oak)

- 13b.** Buds ovoid, usually 3 mm. or larger **15**
- 15a.** Twigs glabrous (or soon so) **16**
- 16a.** Tip of bud pubescent or slightly hairy **17**
- 17a.** Buds 5-8 mm. long, red or reddish-brown (upper scales often ciliate); twigs dark red to reddish brown or olive tinted with red; (bark gray with darker vertical deep fissures like xc ski tracks; acorn 2-3 cm. long, stout, broadly ovoid with shallow tightly-scaled beret-like cup).....10. *Q. rubra* (Red oak)
- 17b.** Buds 3-6 mm. long, brown (with silvery-whitish pubescence on upper scales); twigs slender, brown or reddish brown; (bark gray, rough with irregular vertical shallow fissures, inner bark reddish; acorn 12-20 mm. long, usually with a series of circles at the base of nut; deep top-shaped cup of tight glossy triangular scales covering at least half of the nut).....4. *Q. coccinea* (Scarlet oak)
- 16b.** Bud scales glabrous (but ciliate on the margins), buds 3-4 mm. long, brown; (twigs slender, olive-brown to brown or gray, lower branches and twigs drooping down; bark gray with irregular darker shallow fissures; acorns small, 1-1/5 cm. long, globose, light brown, often with lighter striations and a light flat circle on top, shallow beret-like cup of tightly appressed scales, short stalked).....13. *Q. palustris* (Pin oak)
- 15b.** Young twigs pubescent, reddish-brown to brown, (sometimes tinted with olive); buds 3-7 mm. long, red to reddish-brown, with pale hairs, (ovoid-acute; bark dark gray with shallow long fissures; acorns 1-1.5 cm, subglobose, about 1/4 to 3/4 covered with a shallow cup with blunt, pubescent scales). .....15. *Q. falcata* (Southern red oak)
- 8b.** Shrub; much branched, giving the appearance of many stems; buds 3-4 mm. long, with broad, ovoid, rounded apex, brown; twigs brown to reddish-gray, pubescent the first winter; (bark dark brown and scaly on trunk, smoother on twigs, acorns usually in pairs, about 1 cm. long, glossy, 1/4-1/2 covered with roundish cups of tight scales).....16. *Q. ilicifolia* (Bear oak)