

Vascular Plants of Williamson County
Quercus nigra – BLACK OAK [Fagaceae]

Quercus nigra L., BLACK OAK. Tree, evergreen, 1-trunked, in range to 12 m tall; monoecious; shoots with only cauline leaves, foliage \pm glossy green and essentially glabrous, clustered near tips on twigs of short lateral branches; buds angular, on scales reddish hairy above midpoint. **Stems:** initially new growth with conspicuous projected ridges aging cylindrical, young twigs with semicircular leaf scars and numerous small lenticels; on new growth having 5 vertical files of bud scale scars with to 10 scars in each file; bark tight. **Leaves:** helically alternate, 3-lobed above midpoint with a pair of rounded to obtuse lateral lobes (elongate rhombate), on twigs first leaves of a short lateral branchlet often unlobed, petiolate, with stipules; stipules 2, attached at node, linear-narrowly triangular to linear or narrowly oblong-linear, (2–)3.5–6 mm long, light tannish brown aging papery, flat, thickened at base, with principal veins raised on lower surface, pubescent with crooked arms < 0.5 mm long; petiole hemicylindric, to 5 mm long, \pm pubescent with short stellate hairs; blade obovate in outline, (15–)50–95 \times (9–)13–45 mm, tapered to long-tapered at base, lateral lobes widely spreading (crosslike), often somewhat wavy above midblade and lacking teeth or projections on margins, pinnately veined with conspicuous, elaborate vein network raised on upper surface and some principal veins somewhat raised on lower surface, on emerging leaves with short hairs along margins and lower midrib and appressed, purple-red fine hairs on lower surface (abscising) and white-tomentose tufts in axils of lateral veins, mature blade essentially without nonglandular hairs, upper surface with green tissue patches appearing slightly sunken, margin narrowly colorless, lower surface with inconspicuous, minute glandular hairs along side of midrib. **Inflorescences:** unisexual, only on early-spring shoots from winter buds. **Staminate inflorescence:** catkin (ament), spikelike, to 40-flowered, 1–3 catkins arising first from winter bud at the lowest axils of new spring growth, flowers 7–12/10 mm, during pollination to 55 mm long, fertile axis to 40 \times 6–7 mm, pendent on axis, flowers alternate unevenly spaced along rachis, sessile, lacking bracts; peduncle to 15 \times 0.4 mm, pale green, short-hairy, rachis like peduncle, sometimes with tuft of white hairs at base of several flowers. **Staminate flower:** \pm radial, ca. 2 mm across (= stamens); **calyx** unequally 4–6-lobed, 1.6–2 mm long, the deepest lobes to midpoint; tube \pm bell-shaped lopsided, green, somewhat wrinkled, glabrous; lobes to 1 mm long, papery and pale reddish to brownish, short-hairy with crooked hairs especially on margins; petals absent; **stamens** 4–6 (= calyx lobes), free; filaments suberect to ascending, ± 1.25 mm long, white, glabrous; anthers dorsifixed, dithecal, 0.9–1.2 mm long, greenish yellow to dull light yellow, longitudinally dehiscent; pollen copious, light yellow, dry; **pistil** absent. **Pistillate inflorescence:** on stubby, short axillary shoot with (1–)2–3 flowers appressed side-by-side, stalk < 0.5 –3.5 mm long somewhat flattened, densely short-tomentose with hairs aging tannish, inflorescence subsessile. **Pistillate flower:** bilateral, 2.5–3 mm across (= spreading styles); **calyx** mostly deeply 3-lobed, rounded at tip, ca. 1 mm long, papery reddish aging brownish, short-ciliate on margins and with some short hairs on outer (lower) surface; **petals** absent; **stamens** absent; **pistil** 1, ca. 2.5 mm long (styles spreading); ovary inferior, inverted top-shaped, ca. 0.5 \times 1 mm, green, glabrous, 3-chambered with 1 fertile ovule; styles 2–3, widely spreading to arching later deflexed, (1–)1.5–2.5 mm long, red-purple to

reddish approaching flared tip. **Fruit:** acorn (glans), maturing in second year (biennial); involucre covering only basal 1/4 of fruit, saucer-shaped, in range ca. 5 × 12–14 mm, brown, scales helically alternate, the scales mostly flat with persistent appressed, rounded to truncate at tips, ca. 3 mm long, short-ciliate, appressed short-hairy on outer surface; nut subspheroid, 11–13 mm, point nipplelike, circular scar in range 8–9 mm, outer wall with short appressed hairs and appearing somewhat glaucous, inner wall densely silky-tomentose with tannish hairs.

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