

Quercus berberidifolia Liebmann, CALIFORNIA SCRUB OAK. Shrub to treelike (multi-stemmed), evergreen to semi-evergreen with basal burl, sclerophyllous, canopy closed and rounded, in range 150–500 cm tall, breadth \geq height; monoecious; shoots with stiff, \pm spinose to entire, tough, 2-colored leaves, minutely stellate-pubescent; bark of trunk gray, scaly, of small branches brown to grayish brown. **Stems:** initially ridged or \pm angled becoming cylindric, initially with ridge descending from each leaf, densely stellate-tomentose with arms of hairs ascending, hairs somewhat persistent on new periderm. **Leaves:** helically alternate, simple, petiolate, with stipules; stipules 2, attached at base and \pm axillary, oblanceolate-linear, 5.5–7 mm long, tannish to reddish brown, \pm tomentose at base and above midpoint with ascending hairs, early-deciduous; petiole subcylindric, 1.8–7.5 mm long, pubescent with stellate hairs; blade oblong or elliptic to obovate, 15–40(–65) \times 8–25(–30) mm, flat to slightly cupped or wavy, rounded to tapered at base and sometimes asymmetric (oblique), with sharp point at tip (spine-toothed to mucronate) or entire, acute with point to obtuse at tip, pinnately veined with midrib and sometimes lateral veins raised on lower surface, upper surface glossy dark green and glabrate with some scattered glandular hairs and stellate hairs, lower surface light green and pubescent with stellate hairs and sometimes pale yellow, glandular hairs, the radiating arms of stellate hairs 4–10 and 0.1–0.2 mm long and \pm appressed. **Staminate inflorescence:** catkin, (1–)3–5 arising from winter bud but subsequently others occurring at lower nodes of new shoot, spikelike, arching to pendent with lax axis, 4–55 \times 2.5–4 mm, 5–13-flowered, flowers helically alternate and not interrupted with noticeable gaps between flowers, subsessile, bracteates or not; peduncle typically $<$ 5.5 mm long; rachis flexible, light green, sparsely pubescent mostly with colorless hairs (septate) and some stellate hairs; bractlet subtending flower 0–1, threadlike to linear, 1.5–3.5 \times 0.1–0.2 mm, tannish to brownish, hairy especially approaching at tip and tip sometimes wider. **Staminate flower:** \pm radial, 1.3–2.8 mm across; **perianth (calyx)** unevenly 4–6-lobed (toothed), fused 1/4 to 4/5 length, bowl-shaped to deeply cuplike, commonly splitting in 1 or more places to base; tube 0.3–1.2 mm long, yellowish green becoming golden tan, glabrous; lobes acute to truncate or 2-toothed, 0.3–0.8 mm long, golden brown, ciliate on margins, aging \pm scarious; stamens (2–)4–7, free; filaments ascending, 1–2.5 mm long, pale green or yellowish green, glabrous; anthers exerted, basifixed, dithecal, 0.7–1.4 mm long, greenish yellow to yellowish gray-brown, longitudinally and sideways dehiscent; pollen light yellow, dry, copious. **Pistillate inflorescence:** condensed spike of (1–)2–5 flowers, axillary at upper nodes on leafy spring shoots, typically at least several nodes from the nearest staminate spike, tomentose, bracteate; axis absent (1-flowered) or short and stout, absent or very short; each flower partially enclosed in an involucre (cupule); **involucre** of helically alternate and overlapping bractlets, at anthesis bractlets 10–15 increasing to ca. 250 in fruit, the larger outer bractlets 1–1.3 mm long, green with reddish, ciliate to jagged exposed margin, \pm hairy on rounded tip having unforked and forked ascending hairs on outer surface. **Pistillate flower:** ca. 1.5 mm long, with ascending hairs; **perianth (calyx)** 5–6-lobed, 1–1.2 mm long, with ascending hairs on outer surface; tube cup-shaped, 0.5–1 mm long, green, short-hairy at base and glabrous on inside; lobes acute to acuminate, 0.25–0.7 mm long, some with teeth, green, \pm ciliate on margins; **pistil** 1, ca. 1.5 mm long, with sparse, ascending hairs; ovary inferior, 1-chambered; styles 2–4, fused at base, branches

exserted, ascending to spreading, 0.5–1.2 mm long, yellowish green but paler approaching tip, expanded into terminal stigma dark red, persistent on early fruit. **Fruit:** acorn (glans), sessile, maturing and deciduous in late summer but involucre commonly persistent; involucre generally covering basal 1/3 of nut, hemispheric to bowl-shaped, 12–22 mm diameter and 5–10 mm deep, scales strongly wartlike (tuberculate) at base but with a flatter, acute tip; nut ovoid to sometimes ellipsoid, in range 10–36 × 8–16 mm (smaller if imperfect), brown, acute to obtuse at tip, basal scar circular, typically (3–)5–6 mm diameter, convex, gray; shell glabrous inside. Late February–early May.
B. A. Prigge & A. C. Gibson