

Rubus L. RASPBERRY, BLACKBERRY

Rubus ursinus Cham. & Schldl., CALIFORNIA BLACKBERRY. Trailing shrub, winter-deciduous, clonal, thicket-forming and clambering, spinescent, forming adventitious roots where buried, much-branched, forming biennial, long-arching shoots produced from perennial base, 50–150+ cm tall; dioecious; shoots in first year (primocanes) to 300 cm long, normally unbranched and without flowers and in second year forming short lateral shoots with flowers, pilose to tomentose or pubescent and on new growth forming ± capitate glandular hairs aging as straight, radiating, sharp-tipped prickles along axes and major veins, the prickles 0.8–5.5 mm long, with expanded elliptic bases oriented along long axis of plant organ. **Stems:** weakly 5-angled on first-year growth (primocanes), with 3 ridges descending from each leaf, aging cylindrical to 10 mm diameter, green becoming purplish red and glaucous, on second-year growth (floricanes) cylindrical, to 2 mm diameter, all stems tomentose with scattered, radiating prickles. **Leaves:** helically alternate, in ranged mostly pinnately 3-foliolate (1-foliolate or 5-foliolate; if 1-foliolate 3-lobed), petiolate, with stipules; stipules 2, fused to petiole, linear-lanceolate or linear-oblongate to awn-shaped or linear, several–10 mm long, light green becoming reddish at tip, finely pubescent, mostly lacking prickles except on the longer ones; petiole mostly cylindrical but narrowly channeled on upper side, 21–48 mm long, flaring at base, short villous-pilose, with prickles but mostly < adjacent stems; rachis of 3-foliolate leaf 9–24 mm long, like petiole; petiolules 0–4 mm long; blades of leaflets widely lanceolate to ovate, 35–93 × 20–45 mm (lateral leaflets) and 65–112 × 34–80 mm (terminal leaflet) sometimes with short sublobe, rounded and somewhat asymmetric (lateral leaflets) to subcordate and symmetric (terminal leaflet) at base, dentate on margins with a mixture of large and small teeth, acute at tip, pinnately veined with principal veins slightly sunken on upper surface and raised and with short prickles on lower surface, finely pilose but denser on lower surface; blade of 1-foliolate leaf symmetrically broadly ovate in outline, 60–100 × 50–80 mm, subcordate to truncate at base, lateral lobes 32–77 × 31–45 mm and the terminal lobe 5–26 × 10–21 mm, dentate on margins, acute at tip. **Inflorescences:** functionally unisexual cymes, terminal or axillary, 1–6-flowered, bracteate, tomentose-villous, spinescent with prickles; peduncle 5–50 mm long, axes tomentose and armed with straight, radiating prickles like stem; bractlet subtending pedicel mostly 1-foliolate, sessile or with petiole to 2 mm long, lacking stipules, narrowly oblong to linear or linear-oblongate, 1–5.5 × 0.6–1.1 mm; pedicel 6–30 mm long, tomentose and with prickles, bracteoles absent. **Staminate (bisexual) flower:** radial, 20–36 mm across; hypanthium dish-shaped, ca. 5 mm diameter, green, tomentose, internally glabrous and nectar-producing between inner stamens and base of receptacle stalk; receptacle domed (torus); **sepals** 5, at anthesis spreading, ovate, 6–7.5 × 5–6 mm, with a narrow point 0.9–1.2 mm long at tip, surfaces where exposed densely white-tomentose, lower surface with red prickles and capitate glandular hairs; **petals** 5, obovate, 11–15 × 7–8.5 mm, white, tapered at base, entire, acute to obtuse at tip; **stamens** 70–90+ in several series, free, arising from hypanthium, dehiscent successively in outer set to inner set; filaments initially strongly hooked before being displayed for pollination, at maturity mostly ascending, unequal, 4–9 mm long within flower (inner ones short), white, slender at tip; anthers dorsifixed, dithecal, 1.2–1.4 × ± 0.9 mm, cream blushed pink drying brown, longitudinally dehiscent on 1 side; pollen

colorless; **pistils** 34–40, free, helically arranged on surface of torus, ca. 1 mm long, diminutive of pistillate pistils but abortive. **Pistillate flower:** radial, 13–24 mm across; hypanthium dish-shaped, ca. 3.5 mm diameter, green, tomentose, internally glabrous and nectar-producing between inner stamens and base of receptacle stalk; receptacle domed (torus); **sepals** 5, at anthesis spreading, ovate, 5–6.7 × 2.5–3.8 mm, with a narrow point 0.9–1.2 mm long at tip, surface where exposed densely white-tomentose, lower surface with red prickles and capitate glandular hairs; **petals** 5, elliptic, 8.5–12.5 × 4–6.1 mm, white, abruptly tapered at base, entire, acute to obtuse at tip; **stamens** 50–75, free, with small, abortive anthers and lacking pollen; filaments 1–2.5 mm long; **pistils** 34–40, free, helically arranged on surface of torus, 3.2–4.1 mm long; ovaries superior, asymmetrically ovoid to ellipsoid, green, outer side finely short-villous above midpoint, 1-chambered, each chamber with 2 ovules (1 diminutive); style erect or arched upward, cylindrical but narrow at base, 2.2–2.9 mm long, greenish white, glabrous; stigma on 1 side decurrent from tip for ca. 0.4 mm, ± 2-lobed and contorted (convolute). **Fruit:** aggregate fruit of 30–40 fleshy drupelets from 1 flower, in a hemispheric-oblong to conelike cluster, aggregate 7–80 × 7–13 mm; drupelets helically arranged, subspheroid to obovoid, mutually compressed below midpoint and fused to a fleshy receptacle, 4–5 × 2.5–4 mm, at maturity black to blackish red (immature red), glabrous or with several inconspicuous hairs in pit by style; style ± persistent; pulp juicy, sweet, reddish; stone (endocarp, putamen) D-shaped to wedge-shaped, 2–3 × 1.5–2 × 1.2 mm, tan but often stained darker from pulp, extremely hard, conspicuously netlike, ridged around edge. Mid-February–early June.

Native. Trailing shrubs occurring as clones throughout the range, commonly in shady habitats within or on the edges of southern oak woodland and riparian woodland. *Rubus ursinus* has arching, spinescent branches (primocanes) that initially form mostly trifoliolate leaves, and in the second year the flowering branchlets produce mostly three-lobed leaves. Flowers of this species are functionally unisexual, having both sexes but having one of the sexes abortive, so that a clone, often covering an entire patch, may be of only one sex. The aggregate fruit arises from many pistils of a single flower; it consists of fleshy, blackish, subspheroid drupelets fused to a fleshy receptacle. The stone (putamen) of each drupelet is covered with a hard endocarp, the surface of which resembles a miniature peach pit.

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