Amaranthus retroflexus L., REDROOT PIGWEED, REDROOT AMARANTH, COMMON AMARANTH, ROUGH PIGWEED. Annual, taprooted, 1–several-stemmed at base, with an ascending lateral branch from each node along main axis, erect terminating in a dense inflorescence, in range 20–85+ cm tall; monoecious; shoots crinkly-tomentose often densely hairy in canopy, the hairs multicellular and unbranched or occasionally forked; taproot radish-colored (*Raphanus*). **Stems:** irregularly ridged, to 20 mm diameter, with 2 ridges descending from each leaf, green or with ill-defined and discontinuous purplish red streaks or purplish red at stem base, main axis not straight. **Leaves:** helically alternate, simple, long-petiolate, without stipules; petiole deeply channeled, 10–100 mm long, with upright green wings on channel rims approaching blade, rounded on lower side, with scattered short hairs; blade ovate to rhombic-ovate, 25–180 × 12–95 mm, blade > petiole, broadly tapered to somewhat rounded at base, irregularly entire to minutely toothed and for some leaves somewhat wavy on margins, obtuse to rounded at tip sometimes with extension of midrib as point, conspicuously pinnately veined with principal veins sunken on upper surface and raised on lower surface, lower surface having veins streaked whitish (crystal flecks). **Inflorescence:** panicle of short, highly condensed cymes of unisexual flowers (cymules), terminal and axillary, flowers sessile, having several bisexual flowers in a large inflorescence, bracteate; terminal panicle 20–80 × 17–45 mm, subtended by leaflike bract, often with 1–several lateral branches below midpoint, only the lowest lateral branch subtended also by a leaflike bract; main axes conspicuously crinkly-tomentose; lateral panicles shorter and narrower; cyme or cymule typically 3–14-flowered, number decreasing base to tip, often cymules only pistillate at base of main and lateral axes, having 1 or 2 staminate flowers per cluster from middle of panicle or branch axes upward; bract subtending base of cyme, cyme branch, or cymule branchlet lanceolate, 4.4–6.5 × 0.9–1.6 mm, acuminate and spine-tipped, with raised, green midstripe + base of spine and membranous on margins; bractlet (bracteole) sometimes subtending flower, elliptic to ovate, 1.3–1.8 × 0.4–0.8 mm, membranous, acuminate at tip, lacking midvein. **Staminate flower:** radial, 1.5–3 mm across; **tepals** (perianth parts) 4–5 helically alternate, subequal, overlapping at base, ascending, oblanceolate, 1.8–3.5 × 0.7–1 mm, rounded to truncate at tip with short point, membranous aging scarious with green midstripe not reaching tip; **stamens** 5, free; filaments ascending, 0.8–1.7 mm long increasing some after dehiscence, translucent; anthers dorsifixed, dithecal, 1.1–1.4 mm long, light yellow, arrow-shaped at base, longitudinally dehiscent; pollen light yellow; **pistil** absent. **Pistillate and bisexual flowers:** radial, ca. 1 mm across, < staminate flower; **tepals** (perianth parts) (3–)5, helically alternate, overlapping at base, subequal, oblanceolate, at anthesis 1 mm long increasing to 2–3.8 × 0.7–1 mm in fruit, rounded to truncate with short point at tip, with the outer tepal often instead acuminate, membranous aging scarious with green midstripe not reaching tip, somewhat pouchlike at base, persistent in fruit; **stamens** absent (pistillate) or 1 (bisexual flower) and as in staminate flower; **pistil** 1; ovary superior, broadly ellipsoid to obovoid and compressed, 0.5–0.8 × 0.4–0.6 mm, glabrous, 1-chambered with 1 ovule; styles (2–)3, erect, (0.7–)1.1–1.6 mm long, if 3 sometimes 1 diminutive, green and conic at base, papillate on inner side. **Fruit:** utricle, with persistent styles, dehiscent easily around circumference (circumscissile) at midpoint, basal portion 0.6–0.7 mm long, wall thin, smooth with 3 faint veins to styles. **Seed:** ovoid-lenticular, 1.2–1.5 × 1.1–1.3 × 0.6–0.7

mm, glossy black to dark brown but paler on thinner margin (reddish when immature), smooth. Mid-July–late summer.

Naturalized. Annual vouchered only once in range but expected to be widely distributed because it is an extremely common weed of agricultural areas throughout California. *Amaranthus retroflexus* is a spineless plant that resembles *A. powellii*, having large leaves, a dense terminal inflorescence, and fruits with circumscissile dehiscence. Of these two species, red pigweed is the one that is obviously pubescent throughout, with hairs on all leaves and axes but especially noticeable on developing leaves; extracting it from the soil also reveals its beet-colored taproot, hence its common names. The tepals are oblanceolate with a rounded tip often with a short point, whereas the mostly glabrous *A. powellii* has ovate tepals.
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