

Cotula L.

Cotula coronopifolia L., BRASS BUTTONS. Perennial herb, rhizomatous, fibrous-rooted, several-stemmed at base, typically decumbent or prostrate with trailing stems and rhizomes forming adventitious roots at nodes, 3–30(–45) cm tall; shoots ± fleshy, with yellow-green leaves, glabrous. **Stems:** cylindric, 2–4.5 mm basal diameter, green to purplish, glossy, with short internodes and encircling leaf scars; cortex with conspicuous air cavities. **Leaves:** helically alternate, unlobed to 1-pinnately lobed, sessile with sheathing leaf bases (perfoliate), without stipules; sheath closed, 3.5–5 mm long, pale yellow to greenish, margin inrolled downward; blade of unlobed leaves linear to narrowly oblanceolate or oblong, 20–45 × 4–5 mm, 5.5–6.5 mm wide just above sheathing base, entire and somewhat inrolled approaching base, narrowly rounded to acute at tip, 1-veined; blade of lobed leaves oblanceolate to spatulate in outline, 20–80 × < 40 mm, with 1–2 long lobes per edge at blade midsection and a long terminal lobe, lower blade axis winged, entire to serrate or narrowly short-lobed and often somewhat inrolled, the lateral lobes paired or not, ascending, typically 10–20 mm long, entire or with 1–2(–3) suberect lobes or teeth 1–3 mm long, with purplish, short-pointed tips, the terminal lobe 18–25 mm long, sometimes with 1 or more short lateral lobes or teeth approaching tip, pinnately veined with 1 principal vein to each lobe and slightly raised on lower surface. **Inflorescence:** heads solitary, terminal (sympodial) but appearing lateral and opposite a leaf and its axillary bud, 6–15 mm across, head discoid, > 250-flowered, with several series of pistillate marginal flowers and many bisexual central flowers, flowers on short pedicels, bracteate, glabrous; bract subtending peduncle leaflike and unlobed; peduncle 30–60+ mm long increasing 2× in fruit, bracts along peduncle 1–2(–3) and resembling subtending bract but shorter; **involucre** shallowly cup-shaped, spreading to become platelike with upcurved edge, phyllaries 21–30+ in 3–5 series, the outer series ± trapezoid-shaped to tongue-shaped and 4–5 mm long, grading to inner phyllaries elliptic to lanceolate and gradually shorter, green with membranous margins and rounded tip becoming scarious after fruits abscise, often with 3–4 sunken veins; receptacle domed, becoming minutely bumpy with persistent pedicels; pedicel of pistillate flower 3-sided or flat on outer face and rounded on inner face, 1–1.5 mm long, translucent-white; pedicel of bisexual flower short-conic, 0.5 mm long decreasing to 0.2 mm at center. **Pistillate flower:** radial, 0.5 mm across; **perianth** absent; **stamens** absent; **pistil** 1; ovary inferior, oval to oblong compressed front-to-back, 1.5–1.8 mm long, incurved, notched at both ends, outer surface smooth, inner surface glandular-puberulent, with thin and spongy margins lacking glandular hairs, whitish with margin at tip initially yellowish becoming reddish; style ± 0.3 mm long, 2-branched at midpoint; stigmas rose-red. **Bisexual flower:** radial, 0.5 mm across, incurved; **calyx (pappus)** absent; **corolla** 4-lobed; tube slightly compressed front-to-back, ± 1 mm long, whitish to pale green, 4-ribbed with lateral ribs more prominent, base slightly indented and enveloping top of ovary, with scattered glandular hairs; throat bulbous (expanded above tube and then constricting below lobes), ± 0.5 mm long, yellow; lobes deltate or shallowly so, ca. 0.3 mm long, bright yellow; **stamens** 4, fused to corolla tube, included; filaments ca. 0.5 mm long, colorless; anthers fused into cylinder surrounding style, basifixed, dithecal, 0.5 mm long, yellow, longitudinally dehiscent; pollen yellow; **pistil** 1; ovary inferior, compressed-obovoid, 0.7–1 mm long, whitish, ± 4-sided, inner surface glandular-

pubescent; style included, ± 0.7 mm long, yellow, 2-branched at midpoint, stigmatic branches \pm fan-shaped. **Fruits:** cypselae, dimorphic, abscised from persistent pedicels; of pistillate flowers lenticular with wings, ± 1.5 –2 mm long, body brown and glandular, wings tan; of bisexual flowers obovoid to oblanceoloid typically without wings, 1–1.5 mm long, brown, with a pale marginal rib, resembling body of marginal fruits but lacking glandular hairs. Late February–early December.

Naturalized. Fleshy perennial herb of coastal salt marsh as well as occurring in brackish and freshwater marshes and creeks, e. g., Conejo Creek and Calleguas Creek. *Cotula coronopifolia* has perfoliate leaves; the leaf forms a closed sheath that persists and hugs the stem after the blade has shriveled. The shoot tip forks to form the continuing vegetative shoot (from an axillary bud) along with a more slender peduncle having bracts and terminated by a head, so that the inflorescence axis appears to be opposite the leaf.
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