

Dudleya pulverulenta (Nutt.) Britt. & Rose, CHALK DUDLEYA. Perennial herb, leaf succulent, evergreen, taprooted with thick caudex, rosetted, 1-stemmed at base, unbranched, with ascending axillary inflorescences 17.5–80 cm tall, rosettes of flowering individuals 175–410 mm across; shoot having a permanent basal rosette including all desiccated old leaves, with 15+ spreading, large, healthy leaves at flowering and a central group of many ascending leaves waiting to expand during the next rainy season, glabrous, densely coated with white, powdery wax; taproot shallow, woody and not succulent, with red-brown bark. **Stem:** caudex-stem hidden by persistent bases of old leaves, 40–80+ mm diameter, succulent; old stem with soft wood. **Leaves:** helically alternate, simple, sessile, without stipules; blade oblong to oblong-obovate, when fully expanded in range to 225 × 80 mm, mostly 3–7 mm thick below midblade, entire, acuminate with slender point at tip, parallel-veined, pale bluish green beneath powdery wax. **Inflorescence:** cyme, axillary from among winter basal leaves, 1–5(–7) inflorescences per rosette, each inflorescence ascending to spreading, 500–1100 mm long, 2-forked at top of peduncle and typical forking again within 50 mm forming (2–)3–7 branches, each principal branch horizontal-spreading and 11–25-flowered, bracteate, glabrous, densely coated with white, powdery wax; peduncle cylindrical, 300–900 mm long, to 12 mm diameter at base, first internode 100–150 mm long and woody with spongy pith, greenish at base changing to deep yellowish pink and reddish approaching flowering branches, typically persistent for 1–2 years; bracts along peduncle 30+, alternate, at base = cauline leaves, ovate, to 50 × 27 mm clasping at base with conspicuous lobes, gradually reduced upward and becoming heart-shaped, often unevenly spaced; flowering branches horizontal-spreading and often upward-arched, to 350 mm long, flexible, with buds and open flowers pendent oriented to lower side and bractlets erect to ascending on upper side; bractlet not subtending pedicel, formed at or below midpoint of internode, heart-shaped, 5–11 × 4–8 mm, reduced upward, clasping; internodes at anthesis 6–11 mm long increasing 2× in fruit; pedicel pendent in bud and flower, 11–13 mm long increasing 2× in fruit, sharply curved upward approaching tip in fruit, reddish brown or green mottled purplish red beneath wax. **Flower:** bisexual, radial, pendent, 5–6 mm across; **calyx** 5-lobed, fleshy, densely coated with white, powdery wax; tube < 1 mm long, green sometimes with red specks; lobes erect, triangular, 4–5 × 2.6–3.7 mm, fleshy, dark green; **corolla** 5-lobed, narrowly conic, 11–13 × 5–5.5 mm; tube 5-angled, 5.8–7 mm long, white changing to light red at top; lobes overlapping, erect, cupped and broadly sword-shaped, 5–6.7 × 2.4–2.7 mm, strong red, broadly acute and slightly spreading at tip and darker; **stamens** 10 (rarely 8; 2× corolla lobes), in 2 whorls opposite and alternate with corolla lobes, fused to corolla tube, included, somewhat dimorphic; filaments tapered, fleshy, white to pale pinkish red, filament of outer whorl (opposite calyx lobes) fused 0.2–1 mm below sinuses of corolla, free portion 2.7–4.4 mm long, filaments of inner whorl (opposite corolla lobes) fused to top of corolla tube and appressed to lobe, fused portion 1.4–2 mm long and free portion 3.5–4.7 mm long; anthers basifixed, dithecal, ± oblong to lanceoloid, 1.8–2.2 × 0.75–0.9 mm, dark red, of stamens opposite calyx lobes 1 mm higher than other anthers, longitudinally dehiscent; pollen whitish to pale yellow; **nectaries** 5, opposite petals at bases of pistils, cupped sausage-shaped, 1.2–1.7 × 0.3–0.5 mm, light greenish yellow; **pistils** 5, fused at base 0.5–1 mm, erect; ovaries superior, each narrowly fusiform, 8.5–10 × 1.6–1.8 mm, pale greenish

yellow or stained or streaked red below midpoint, convex on back and angled on inner face, pie-shaped in \times -section, tapered to style, each chamber with many ovules attached to outer wall; styles gradually tapered from ovary, 1.5 mm long, pinkish red to whitish; stigma scarcely exerted, terminal, light green, minutely papillate. **Fruits:** follicles, 5, each dehiscent along inner edge, many-seeded, narrowly fusiform-lanceoloid, 10.5–13 mm long. **Seed:** \pm fusiform to lanceoloid or ellipsoid, $0.6\text{--}0.75 \times 0.15\text{--}0.2$ mm, orange-brown, irregularly longitudinally wrinkled. Mid-June–early August.

Native. Evergreen, leaf-succulent perennial growing in scattered populations on undisturbed slopes of coastal sage scrub and chaparral, coastal and inland, mostly on rocky or steep slopes and especially where fog is common. *Dudleya pulverulenta*, aptly named chalk dudleya, is distinctive because the entire plant, even flowers, is densely coated with white, powdery surface wax (epicuticular wax), which is removed by anything coming in contact. For sure, this wax is both water repellent and reflective, and likely plays a role in its survival. Flowers barely open and have characteristics appropriate for hummingbird pollination.

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