

*Pentachaeta* Nutt.

*Pentachaeta lyonii* A. Gray, LYON'S PENTACHAETA. Annual, taprooted, rosetted, 1–several-stemmed at base, unbranched or with several ascending branches, erect, 4–35 cm tall; shoots with basal leaves and ascending to  $\pm$  appressed cauline leaves, basal leaves often absent at flowering (present on large individuals). **Stems:** cylindrical, to 2 mm diameter, pale green and glabrous to glabrescent (lower plant) to whitish and sparsely hairy or villous approaching inflorescence. **Leaves:** helically alternate with some opposite basal leaves, simple, sessile, without stipules; blade narrowly oblong to oblanceolate-linear, 5–43  $\times$  1–3.5 mm, entire and ciliate or remotely serrate on margins with a hair terminating each minute tooth, 3-veined at base with midrib raised on lower surface, upper surface glabrous to sparsely short-villous below midblade, lower surface glabrous, on larger leaves with visible parallel submarginal veins and netlike minor veins. **Inflorescence:** heads, appearing terminal and solitary on young plants, later on each branch in several-headed cymelike arrays with newer heads overtopping the first head, head radiate, in range 4.5–15 mm across with 6–27 ray flowers and 5–50+ disc flowers, bracteate; peduncle slender, wiry, sparsely pubescent to short-villous especially approaching head, with appressed bracts above midpoint, the bracts leaflike, oblanceolate to linear, 2–7 mm long; **involucre** inversely conic to broadly bell-shaped, 3.5–6 mm wide, green, short-villous, phyllaries 11–many in 2–3  $\pm$  equal series, narrowly lanceolate or elliptic to oblanceolate, 2.5–6  $\times$  0.5–1 mm, especially inner phyllaries with wide membranous margins, margin fringed above midpoint, acuminate to tail-like at tip (caudate), short-villous on green surface (outer phyllaries) to glabrous or sparsely short-villous (inner phyllaries), 1-veined; receptacle convex, without bractlets (paleae), shallowly pitted, glabrous. **Ray flower:** pistillate, bilateral, 1–1.5(–2) mm across; **calyx (pappus)** of 8–12 capillary bristles, united at base but not separating from fruit as a unit, 1.8–2.6 mm long, white aging brownish, slightly dilated at base; **corolla** without teeth or minutely 3-toothed; tube somewhat 5-angled, 1.25–2.5  $\times$  0.2–0.25 mm, whitish or pale yellowish green grading to yellow below orifice; limb oblong to narrowly obovate, in range 3.5–5.5 mm long, bright yellow, truncate to rounded at tip, becoming coiled (recurved) when old or dried; **stamens** absent; **pistil** 1, ca. 2.7 mm long; ovary inferior, inversely pyramidal to oblanceoloid, 0.7–1 mm long, pale yellowish green, with dense, ascending to appressed hairs, 1-chambered with 1 ovule; style exerted ca. 1 mm, slender,  $\pm$  2.1 mm long, 2-branched, white below fork, the branches ascending, straight or slightly diverging, linear tapered to tip, 0.6–0.75 mm long, yellow, inconspicuously and minutely pebbled. **Disc flower:** bisexual, radial, 1–1.2 mm across; **calyx (pappus)** of 8–12 capillary bristles, united at base but not separating from fruit as a unit, 1.8–2.6 mm long, white aging brownish, slightly dilated at base; **corolla** 5-lobed, cylindrical to club-shaped, 2.8–4 mm long; tube short, 0.25–0.5  $\times$  0.6 mm, pale yellowish; throat slightly inflated by anthers, 2.1  $\times$  0.6 mm, yellow-orange, with scattered glandular hairs above midpoint; lobes spreading to erect, narrowly triangular, 0.4–0.7 mm long, yellow-orange, on upper surface sometimes stiff-hairy on margin at base; **stamens** 5, fused at base of corolla throat, included; filaments 0.6–0.8 mm long, yellow; anthers fused into cylinder surrounding style, basifixed, dithecal, 1.2–1.5 mm long, light yellow to yellow-orange, slightly cordate at base, with acuminate appendage at tip, longitudinally dehiscent; pollen yellow to

orange; **pistil** 1, ca. 2.7 mm long; ovary inferior, inversely pyramidal to oblanceoloid, 0.7–1 mm long, pale yellowish green, with dense, ascending to appressed hairs, 1-chambered with 1 ovule; style exerted, 1.5–2.1 mm long, 2-branched, pale yellow and glabrous below fork, the branches appressed, linear, 1–1.5 mm long, yellow, acute at tips, minutely barbed. **Fruit:** cypselae, narrowly oblanceoloid, 2–2.4 × 0.5 mm, pale brown and when immature with 5 red stripes, with short ascending hairs, with whitish callus at base; pappus easily broken but with persistent ring at top of fruit. Mid-May–late July (mid-August).

Native. Listed species. Annual encountered during rainy years in full-sun habitats at comparatively few sites, especially along trails on open ground of chaparral or grassy patches, with native and naturalized species. *Pentachaeta lyonii* flowers after the onset of summer drought, when few herbaceous species are still blooming. In 2006, plants were found in flower at Wildwood Regional Park in mid-August, stimulated by a freak summer storm, and those individuals had diminutive heads that resemble those described for *P. fragilis*, and a reassessment of the two species is probably necessary to clarify species status. In range, the largest known population of *P. lyonii*, during some years with thousands of individuals, occurs on private land just behind the fire station on Cornell Road (Agoura Hills), which has been harmed in recent years by indiscriminant weedwacking.

B. A. Prigge & A. C. Gibson