

*Lupinus* L. LUPINE

*Lupinus sparsiflorus* Benth., COULTER'S LUPINE. Annual, taprooted, rosetted, several-stemmed at base, with spreading to ascending lateral branches, erect, 20–60 cm tall; shoots strigose to short-strigose and hirsute or pilose, the hirsute hairs  $\pm$  spreading, swollen and becoming reddish at base; taproot strongly nodulated; cotyledons petiolate and sometimes evident. **Stems:**  $\pm$  cylindrical, to 4.5 mm diameter, green to reddish; solid. **Leaves:** helically alternate, palmately compound with 6–10(–11) leaflets, petiolate, with stipules; stipules 2, attached to petiole near base, ascending, linear to narrowly triangular,  $3.5\text{--}8 \times 0.5\text{--}1$  mm, reddish, with long hairs; petiole cylindrical and shallowly channel at base, 20–90 mm long,  $>$  blade, strigose and hirsute; petiolules 0.5–1.3 mm long, pale green; blades of leaflets linear to oblanceolate,  $8\text{--}30 \times 2.6\text{--}5.6$  mm, central leaflet not noticeably larger than adjacent leaflets, somewhat folded upward along midrib, long-tapered at base, entire, acute at tip, midrib only distinct on lower surface, dull, hirsute. **Inflorescence:** raceme, terminal on main shoots, 30–300 mm long, 30–70-flowered, with flowers in clusters of 4–6 but not whorled, bracteate, pubescent; peduncle cylindrical, 15–80 mm long, solid; bractlet subtending pedicel narrowly linear, 6–7.5 mm long, green becoming purplish red, abscising from persistent base, base becoming part of swollen pedicel in developing fruit; pedicel 2–4.5 mm long increasing in fruit. **Flower:** bisexual, bilateral, pealike (papilionaceous), 6–12.5 mm across; **calyx** 2-lipped, 3-lobed, 4.5–6.5 mm long, purple and green, strigose; tube bell-shaped,  $1.5\text{--}1.7 \times 2.2$  mm; upper lip 2-lobed, lobes triangular, 1.5–3 mm long; lower lip triangular, 3–4.8 mm long, minutely 3-toothed with middle tooth the largest, sometimes with a pair of purplish, lateral appendages near base and below sinus, to 0.3 mm long, tipped purplish red; **petals** 5; banner  $\pm$  heart-shaped, 8.5–9.5 mm,  $\pm$  lacking claw, initially folded but at anthesis bent upward ca.  $45^\circ$  at midpoint and with upwardly curved, back-inrolled margins forming a pair of longitudinal ridges along keel, strong purple at margins grading to light purple and then whitish centrally (whitish center often not exposed), spotted with deep maroon-purple between central and peripheral area; wings 2, weakly fused along margin near tip (hiding part of keel), aging free, asymmetrically short-clawed, claws 1.5–2.4 mm long and white, limbs obovate to  $\pm$  oblong,  $9\text{--}10.5 \times 4\text{--}5.5$  mm (including claw), strong purple to paler approaching base, conspicuously veined; keel of 2 partially fused petals, clawed, claws 2.2–2.5 and whitish, 9.3–9.6 mm long (including claw), limbs deep purple along lower fused edge to tip, deep reddish purple in middle, white on inner edge of tip and base above claw, densely ciliate with short, crisped hairs on upper margin from claw to below upturned tip; **stamens** 10, monadelphous (filaments fused into column), fused to base of banner, stamens dimorphic in 2 sets of 5; column  $\pm$  5.5 mm long, white, tapering, free portions of filaments unequal alternately short and longer, 3.5–4.5 mm long increasing  $2\times$  after anthesis (long stamens) and 1–1.5 mm long (short stamens), white; anthers basifixed, dithecal, dimorphic, 0.8–1 mm long (short stamens) and  $\pm$  0.5 mm long (longer stamens), dark orange-yellow, longitudinally dehiscent first with short stamens while in bud and later long stamens; pollen orange-yellow, copious, sticky; **pistil** 1, to 10 mm long; ovary superior, oblong compressed side-to-side,  $5 \times 1$  mm, green, pubescent to strigose with whitish, upward-pointing hairs, 1-chambered with ca. 10 ovules attached to upper margin; style strongly curved, whitish, with hairs just below stigma asymmetrically longer on 1 side; stigma

dome-shaped, minutely papillate. **Fruit:** pod (legume), dehiscent by valves separating lengthwise twisting open, typically 3–6-seeded, linear-oblong, 15–20 × 4.6–5.2 mm, long-hairy. **Seed:** ovoid, ca. 3 × 2 mm, dull, mottled brown and tan. Late January–late April.

Native. Annual in open areas of coastal sage scrub and chaparral in the western half of the range. *Lupinus sparsiflorus* has been treated as having varieties or subspecies, but if recognized our materials fit subsp. *sparsiflorus*. This species is long-hairy, and the central leaflet is not different in size from the adjacent ones.

B. A. Prigge & A. C. Gibson