

Centranthus ruber (L.) DC., RED VALERIAN. Perennial herb, several-stemmed at base, decumbent or ascending to erect, to 100+ cm tall; shoots arising from base relatively unbranched, with long internodes, with leaves appearing tufted at nodes having leaves on unexpanded axillary shoots, glabrous, glaucous. **Stems:** cylindrical, to 10 mm diameter, fused bases of upper cauline leaves forming ledges across each node, somewhat woody; hollow, pith wide. **Leaves:** opposite decussate, simple, petiolate (lower leaves) and sessile (upper leaves), without stipules; petiole channeled, to 40 mm long, somewhat indistinct from blade, expanded at base; blade elliptic or lanceolate (typical cauline leaves) to ovate (cauline leaves subtending reproductive shoots), 30–200 × 20–70 mm, reduced on lateral branches, long-tapered at base, entire, acuminate (typical leaves) to tail-like (caudate, cauline leaves) at tip, pinnately veined with midrib raised on lower surface, bluish green. **Inflorescence:** panicle of cymes (thyrses), terminal (axillary), domed, 35–70 mm across, with 2 or more orders of opposite decussate lateral branching and many flowers in a somewhat dense cluster, the second and third order forks with a terminal flower, ultimate branchlets somewhat 1-sided, bracteate, essentially glabrous; central axis with several–10 nodes; bracts at the lowest node 2 (= 1 subtending each main branch), bases fused across node, leaflike, ovate, 3–4 mm long, midvein slightly raised on lower surface; first internode 10+ mm long, decreasing upward; bracts subtending lateral branches and larger branchlets oblong or narrowly triangular to narrowly spatulate, 1–3 mm long, bases fused across node, with some short glandular hairs on margins; bractlet subtending flower awl-shaped, 1–2 mm long increasing in fruit, usually abscised before fruit matures; pedicel absent. **Flower:** bisexual, bilateral, 5–6 mm across, long-spurred, 13–18 mm long; **calyx (pappus)** represented atop ovary, appearing as a collar of 15–18 reddish bumps in a whorl (actually miniature, inrolled coils much later growing and unfurling, becoming tentaclelike and feathery); **corolla** 5-lobed, narrowly trumpet-shaped (salverform), deep rose to light or strong purplish red (white only in cultivated form); tube narrowly cylindrical often compressed side-to-side approaching orifice, tube + throat ca. 7–9 × 1 mm + a basal, downward-pointing nectar-producing spur 4–6 mm long, the spur **nectary** internally at tip; lobes spreading, ovate or elliptic to oblong or obovate, 2–3 × 0.8–2 mm, unequal in width on single flower, often margins somewhat rolled backward; **stamens** 1, fused at orifice to corolla throat at the base of the uppermost lobe; filament arched, 3 mm long, same color as corolla; anther dorsifixed, dithecal, 1.5 mm long, white aging with a tinge of purplish pink, longitudinally dehiscent; pollen whitish to pale golden yellow; **pistil** 1; ovary inferior, ± narrowly ovoid having flattened face 4-grooved, green, glabrous, 1-chambered with 1 pendent ovule; style straight, exerted 4–5 mm, ± 12 mm long, same color as corolla; stigma terminal, colorless, minutely papillate. **Fruit:** cypsela with pappus (late-expanding calyx), indehiscent, 1-seeded, narrowly ovoid, 3–3.4 × 1.1–1.3 mm, orange-brown with whitish callus at top, rough, 1-veined on rounded face, 4-grooved and 3-veined on flattened face; pappus fused at base 1 mm, of 15–18 ascending bristles having spreading fine hairs (plumose), 6–7 mm long, spreading hairs < 1 mm long, pappus abscising on old fruit, when immature unfurling like fern fiddlehead and in fruit ± resembling a sea anemone. **Seed:** filling fruit chamber. Mid-April–late July.

Naturalized. Perennial herb cultivated locally as a garden ornamental but escaped several places in SMM, e.g., near the Village of Topanga, often growing in partial shade and

where soil remains moist during summer months. *Centranthus ruber* has widely spaced pairs of glaucous, opposite leaves. This is one of just a handful of flowers in range having a spur; the spur is a backward-pointing extension of the narrow corolla tube. *Centranthus* is also exceptional in having only one stamen, easily viewed fused to corolla just below a lobe. Red vervain occasionally forms fruits; its cypsela is structurally comparable with the fruit type of Asteraceae, formed from a 1-chambered inferior ovary, and the calyx develops as a feathery pappus fused to the top of the fruit. In this case, pappus enlarges very late during fruit maturation, growing and unfurling like a fern fiddlehead from minute coiled lobes present on the flower, whereas in Asteraceae pappus is essentially fully formed at anthesis.

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