

Cedrus deodara (D. Don) G. Don, DEODAR CEDAR, HIMALAYAN CEDAR. Tree, evergreen, 1-trunked, with well-defined horizontal branching, having conspicuous long shoot-short shoot organization but lacking short shoots on lower side of every branch, parent trees to 25 m tall; shoots often appearing bluish green from a distance, with leaves (needles) tufted on terminal portion of short shoot, short shoots 8–25 mm apart, each with several–50+ leaves (often ca. 20 leaves per growth event) and no internode elongation, with terminal bud covered with scales, with resin ducts, aromatic when broken; bark on trunk aging platelike, dark gray. **Long-shoot stem:** initially several-angled, ca. 1 mm diameter, the angle decurrent or descending from each leaf, tannish, somewhat glaucous, internodes 2–3 mm long, with short, erect hairs; stem later that season becoming woody and forming light brown bark + a proportion of axillary buds covered with bud scales only at nodes 3–many nodes apart (most cauline leaves never form axillary buds). **Short-shoot stem:** \perp long shoot, to 65 \times 2–5 mm, sometimes with 1–3 axillary buds or dwarf side shoots near the tip, older surface with bands of dead, somewhat persistent bud scales alternating with bands of persistent petioles, the longest stems showing 10+ sets (years) of leaves including 2–3 sets of foliage leaves approaching the tip. **Bud scales:** helically alternate and strongly overlapping, simple, sessile, without stipules; blade appressed or sometimes recurved at tip, deltate to acuminate-triangular, 1–2 mm long, hard and tough, brown, sometimes with slightly raised midrib. **Foliage leaves:** helically alternate, simple, short-petiolate, without stipules; petiole ascending, 1–2 mm long, yellowish to whitish, sharply defined at blade by slender, encircling ring (abscission zone), flared at base or not, somewhat compressed top-to-bottom, abscission zone aging orangish, persistent and gray after blade abscises; blades of long shoots and short shoots monomorphic, linear, 16–45 \times \pm 1 mm, the widest above midblade, tough, long-tapered at base but slightly narrowed just above abscission zone, entire, with a short, hard point at tip, venation obscure, unequally 4-sided with rounded angles, surfaces green with fine white lines (= rows of stomates). **Pollen cone:** formed on short shoots, solitary and unbranched, cylindrical, 48–67 \times 12–14 mm, when fully expanded lax and arching, of many, spreading, helically alternate, closely arranged microsporophylls, abscised as a unit with persistent microsporophylls; microsporophylls 4.1–5 mm long, the lower portion an axis having a pair of oblong-ellipsoid pollen sacs (appearing lateral), above midpoint blade-like and ovate, 2–2.5 \times 2.1–2.8 mm, pale yellowish drying hard and golden brown, stalk keeled on lower side to midpoint of microsporophyll blade, blade short-fringed on margins and not membranous, glabrous; pollen sac longitudinally dehiscent releasing pollen sideways and upward; pollen pale yellow, copious, dry and wind-dispersed. **Seed cone:** solitary, when mature erect on branch, ellipsoid-ovoid, 60–70 \times 39–43 mm, of overlapping scales not spreading apart at maturity, pale blue and green, resinous, shattering and stiff, wooden cone scales falling from a persistent, erect axis; wooden cone scales broadly fan-shaped with a narrow or sharp point at base, 25–36 \times 30–55 mm, brown and having outline of 2 seed wings. **Seed:** winged, with fertile or aborted seed at tip; wing = modified tissue of cone scale surface, asymmetrically fan-shaped, ca. 20 \times 20–24 mm, papery (scarious) \pm glossy brown, with 1 margin straight (adjacent to other side on cone scale), truncate at top with 1 right angle and 1 point; seed obovoid, 7–13 mm long (smaller seeds likely aborted), seed coat tannish beneath scarious cover.

Waif. Evergreen tree widely cultivated in southern California along roads, around buildings, and in parks, known in several parks to be reproducing by seed, but at SMMNRA Rocky Oaks

also found in 2011 as a seedling in southern oak woodland. *Cedrus deodara* has distinctive, gracefully spreading, rigid main branches bearing tufted, somewhat bluish needles (leaves). This is a classic example of long shoot-short shoot design, in which the leaves (needles) mostly are formed at the tips of stubby lateral axes. Young plants and rapidly growing shoots in full sun produce the long shoots, which tend to be lax and nodding to nearly pendent until the main stem forms a cylinder of wood. Seed cones of this genus are erect on woody branches.

B. A. Prigge & A. C. Gibson