

***Rumex obtusifolius* L.**, BROADLEAF DOCK, BITTER DOCK. Perennial herb, robust, colonial, rosetted, 1–several-stemmed from unbranched or branched caudex, erect, 90–150 cm tall; shoots with basal leaves and cauline leaves, glabrous, easily wilted; rootstock reportedly a vertical, fusiform taproot but ours commonly branched just below caudex with branches swollen below branching point and tapering downward, sometimes forming large horizontal roots. **Stems:** cylindric and smooth at base to ridged above, to 20 mm diameter, fleshy but fibrous, not noticeably bent at nodes, nodes \pm swollen; internodes hollow, with wide pith. Leaves: helically alternate, simple, long-petiolate, with stipules; stipules 2 fused to form an ocrea sheathing stem above node and fused to upper side of petiole, membranous, mostly 20–30 mm long in leaf axil (to 60 mm long on basal leaves of some plants), initially light green or transparent-membranous, with 15–20 parallel green veins, wrinkly between veins, soon drying pale brown and smooth between reddish veins, very fragile and fracturing irregularly (transversely and longitudinally), some fractured parts adhering to stem; petiole hemicylindric but broadly U-shaped at pale green base where attached to ocrea, 20–490 mm long, $>$ blade length of basal leaves, thick and \pm fleshy, flexible, green or pale green, glabrous; blade of basal and lower cauline leaves broadly lanceolate-oblong, $< 150\text{--}430 \times < 115\text{--}135$ mm, cordate at base, entire and \pm wavy to crisped on margins, acute to obtuse or sometimes rounded at tip, pinnately veined with principal veins raised on lower surface; upper cauline leaves reduced upward to ca. 200×60 mm (subtending lateral branches at base of inflorescence), similar to lower leaves but tending to be truncate or rounded at base, gradually reduced to leaflike bracts within the inflorescence. **Inflorescence:** clusters of flowers at nodes (fasciculate) in terminal panicles, erect with ascending lateral branches, fascicles of 10–25 flowers, \pm spaced but congested at base of lateral branch and at branchlet tips, bracteate with ocrea, glabrous; bract leaflike with petiole and ocrea, reduced upward to 8×2 mm, often absent below terminal fascicles; pedicels $\pm 1/2$ -encircling node, often separated by emerging lateral branch into \pm equal clusters; ocrea ca 2 mm long, soon turning light brown and fracturing; pedicel ascending or arched, cylindric, at anthesis 2–6 mm long, green, not evidently jointed at flowering. **Flower:** bisexual, radial, 2.5–3.5 mm across, protandrous; **perianth** 6-lobed, dimorphic in 2 distinct whorls; perianth tube inversely conic, ± 1 mm long, green; outer whorl (sepals) 3, ascending, cupped-oblong to narrowly ovate, $1.5\text{--}2.7 \times 0.5\text{--}1$ mm, green with white margins to tip; inner whorl (petals) 3, at anthesis elliptic to oblong or tongue-shaped, $2.6\text{--}3.2 \times 1\text{--}1.3$ mm increasing in fruit, at base generally with 3–4 minute teeth on each side, entire above midpoint, rounded at tip, green, with midvein and faint netlike lateral venation, midvein enlarging into callus (tubercle); **stamens** 6, free, arising from rim of perianth tube; filaments 1–1.2 mm long, whitish to colorless; anthers basifixed, dithecal, narrowly oblong, in range 0.7–1.2 mm long, pale yellow, longitudinally dehiscent; pollen pale yellow; **pistil** 1; ovary superior, obovoid, 0.8–1 mm long, strongly 3-angled, 1-chambered with 1 ovule; styles 3, horizontal, 0.5–0.7 mm long, pale green to whitish, flared at tip into ca. 15, short, tentaclelike stigmatic branches, each branch pale green basally grading to transparent at tip. **Fruit:** achene typically enclosed within perianth (diclesium); sepals dry, persistent, similar in size and shape as when in flower, petals deltate to triangular, $5\text{--}6.2 \times 4.5\text{--}5$ mm each with conspicuous tubercle, toothed on margins with 3–6 teeth per edge, marginal teeth deltate to acuminate, with a narrow, whitish membranous margin on the tongue-like to deltate tip; tubercle to midpoint of petal

in fruit, lanceoloid, $1.5\text{--}3.3 \times 0.5\text{--}1.3$ mm, whitish with a cobblestoned surface, drying reddish; achene ovate, $2.7\text{--}3.5 \times 1.6\text{--}2$ mm, 3-angled with 2 faces concave between angles and 1 \pm flat or all 3 faces concave, with styles \pm persistent and appressed to faces, pale yellowish tan (with greenish angles at least when young). January–March.

Naturalized. Robust perennial herb found in 2010 growing in waterlogged roadside ditch in Agoura Hills (SMM). *Rumex obtusifolius* was growing with *R. crispus*, and likely the two may have hybridized locally. In comparison, the ocrea on basal leaves of *R. obtusifolius* is delicate and much shorter and has more conspicuous venation.

B. A. Prigge & A. C. Gibson