

Asclepias L. MILKWEED

Asclepias eriocarpa Benth., INDIAN MILKWEED, KOTOLO. Perennial herb, rhizomatous, several-many-stemmed at base, ascending to erect, to 100 cm tall; shoots with only cauline leaves, white-tomentose to densely woolly; latex white, copious; rhizomes deep-seated, 5–9(–15) mm diameter, yellowish ochre on older portions, pale yellow or whitish on younger portions and reddish in transition at or just below soil surface, fibrous, commonly with (2)3 buds ± whorled or subwhorled per node, internodes 1.5–2.5 mm long. **Stems:** cylindric to somewhat triangular on lower internodes, to 15 mm diameter, tough, green with grayish mat of hairs, sometimes red-striped on old axes. **Leaves:** opposite and whorled or pseudowhorled with 3–4 leaves, simple, petiolate, without stipules (if present obscure); petiole flattened or channeled, 4–11 × 3–6 mm, on upper surface near base with multicellular hairs (= food bodies), the food bodies narrowly oblanceoloid or conic to fingerlike; blade ovate to lanceolate or oblong, 70–180 × 30–90 mm, thick, subcordate to truncate at base, entire and wavy on margins, acute to obtuse at tip, conspicuously pinnately veined with principal veins ± raised on both surfaces, surfaces somewhat visible through mat of hairs. **Inflorescence:** umbel-like cyme, axillary and ± terminal with only 1 cyme per node, spheric to hemispheric, 45–90 mm across, 13–50+-flowered, bracteate, densely white-tomentose; peduncle 20–70 mm long; bractlets subtending outer pedicels involucrelike, bractlet linear, (1–) 8–11 mm long, the outermost bractlets slightly longer, light green with dense white mat of hairs, abscising after pollination; pedicel 15–25 mm long increasing 2× in fruit, initially flexuous becoming rigid in fruit. **Flower:** bisexual, radial, 11–15 mm across; **calyx** deeply 5-lobed, strongly reflexed at anthesis, green; tube 0–0.3 mm long, with a set of 3 small, green conic glands between lobes; lobes not overlapping, lanceolate, 4–5 × 1.2–1.7 mm increasing 2× in fruit, upper surface glabrous or sometimes tomentose at tip, lower surface tomentose; **corolla** deeply 5-lobed; tube moundlike, ca. 1 mm long, cream-colored, continuous with filament column above; lobes reflexed at anthesis, ovate, 7–8.5 × 4–5 mm, acute and slightly 2-toothed at tip, upper surface glabrous, lower surface glabrous below midpoint and villous above; **stamens** 5, fused into staminal column with filament surrounding but free from lower pistils and anthers fused to enlarged stigmatic head (stigma + anthers = gynostegium), with a whorl of elaborate appendages (corona) from upper filament column; filament column ca. 1 mm long, fused at base to corolla tube, light yellow to light greenish yellow but pale purplish red to rosy orange on 5 ribs diverging to corona; corona of 5 hoods, each hood with an enclosed horn, the hoods alternate with corolla lobes, inflated but not fleshy, from the side resembling a bird's head because of cranial-like swelling, eyesocketlike indentations, and protruding beaklike horn, 3.5–3.7 × 2.3–2.8 mm, split lengthwise from tip to near base on inner edge and from tip to 1/3–1/2 way down, minutely papillate on margins at top, thickened along lower edge, pale to light yellow above midpoint, rosy-orange below midpoint, the horn flat and ± sail-shaped, ca. 3 × 1.5 mm, exerted 0.7–1 mm at tip of hood, pale yellow, minutely papillate at tip, the tip initially touching stigmatic head but later drooping; anthers dithecal, ± trapeziform, 3 × 2.5–2.7 mm, the broadest at base, laterally winged, dehiscent along top, flat and fused to stigma except for wings and terminal appendage, anther sacs and connective greenish below midpoint, brownish or olive green to reddish or purplish above midpoint, lateral wing triangular, 2.3–2.8 mm

long, the widest at base, horny, light yellow on margin, laterally appressed to adjacent wing of neighboring anther and forming a slit with gland (corpusculum) of pollinia positioned at top; terminal appendages deltate to shallowly triangular, 0.8–1 × 1–1.3 mm, whitish, appressed to top of gynostegium, the 5 appendages forming a star-shaped aperture on top of gynostegium exposing yellowish stigma; pollen united into pollinia, each pollinium flattened and narrowly teardrop-shaped, 1.3–1.5 × 0.5 mm, golden yellow to greenish yellow, united by orangey translator arms (ca. 0.6 mm long) to a deep purple corpusculum; **pistils** 2, together chalice-shaped, 5–5.5 mm long; ovaries superior, barely fused or free at base, lanceoloid but flattened on common side, ± 2 mm long, green becoming yellow, 1-chambered with many ovules attached on inner side; styles 2, ca. 1 mm long, green becoming yellowish and fused at stigmas; gynostegium capitate (includes some stylar tissue), 1.7–2 × 2.3–2.5 mm, the top ± flat, 5-lobed, light yellow to light yellowish green, green on sides. **Fruit:** follicle (typically only 1 ripened ovary, many-seeded, ± spreading and appressed to curved pedicel, ovoid, to 100 × 35 mm, narrowly tapered to tip, soft-tomentose, lower portion bulging from seed, wall ± spongy, from midpoint filled with long silky hairs. **Seed:** flat-ovate, 7–10 × 4–6 mm, brown, narrowly winged on margins, with > 100 fine silken white hairs attached to on edge, the hairs spreading, 20–25 mm long. Early June–late July.

Native. Herbaceous perennial occurring in open places often on the margins of southern oak woodland. *Asclepias eriocarpa* is white-tomentose, less so than *A. californica*, and easy to distinguish from that species in vegetative condition because its leaves are mostly whorled and the plants are upright. The spheric to hemispheric inflorescence may be forty-five millimeters, but typically is wider with many flowers. The flowers of this species are whitish initially blushed with rose-purple and aging yellowish; the hood from the side resemble a bird's head with the tip of a "horn" being the bill of the bird, but rather than being a horn that appendage more closely resembles a flat sail. At anthesis tips of the horns may rest on the stigmatic head, but after pollination the hoods droop downward as they age yellow.

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