Rumex persicarioides L., SMARTWEED DOCK. Annual, taprooted, initially rosetted, 1–several-stemmed at base, initially unbranched with terminal inflorescence, later sometimes forming ascending lateral shoots progressively from nodes of inflorescence, erect, in range (4–)10–28 cm tall; shoots with 2–3 basal leaves and several cauline leaves, basal leaves and most cauline leaves withered or absent at flowering, glabrous. **Stem:** ± cylindric, to 3 mm diameter, lower stem aging rose-red and faintly striped, nodes not conspicuously swollen, internodes 30–60 mm long. **Leaves:** helically alternate, simple, petiolate, with stipules; stipules (2) fused to form a sheath (ocrea) above node and fused to upper side of oblique petiole, membranous, 3–7 mm long, with several faint, ± parallel veins, initially transparent drying brownish and scarious, very fragile but not splitting lengthwise; petiole ± hemi-cylindric, to 35 mm long, often 5-ridged and upper side flat, reddish; blade elliptic to oblong-lanceolate or lanceolate, in range 15–40 × 4–10 mm, ≤ petiole, truncate to broadly tapered at base, subentire and wavy on margins, acute at tip, pinnately veined with midrib raised and principal veins slightly raised on lower surface (projecting walls), lacking glandular dots. **Inflorescence:** panicle, terminal, often lacking lateral branches, with condensed cymes at nodes (whorl-like), ca. 10 mm diameter often with > 15 nodes, the nodes helically alternate, flowers in each cluster mostly 15+, opening on different days, bracteate, glabrous (in range not noticeably papillate-pubescent; bract subtending panicle = cauline leaf + membranous ocrea, bract subtending lateral branch = oblong-lanceolate cauline leaf + membranous ocrea reduced upward but each node generally having a green bract + ocrea, ocrea transparent and split by emergent flower buds; axis fine-ridged, internodes to 30 mm at base decreasing upward; pedicel arching, at anthesis ca. 2 mm long, green, with swollen abscission zone below midpoint. **Flower:** bisexual, radial, ca. 1.5 mm across, in bud 3-sided; **perianth** 6-lobed, lobes in 2 distinct whorls, light green; tube (receptacle or hypanthium) dishlike, ± 0.7 mm long; outer whorl of lobes (sepals) cupped-lanceolated, ca. 1.3 × 0.5 mm, obtuse at tip, lacking callosity (lacking a tubercle); inner whorl of lobes (petals) initially elliptic, ± 1.6 × 0.7 mm + several slender teeth below midpoint on both margins, whitish on narrow margins, blunt-acute at tip, initially not veiny and lacking callosity, in young fruit inner lobe broadly lanceolate with tubercle enlarged from midvein with narrow leafy margin somewhat veiny, aging with large white tubercle, the margin not veiny, and tips erect to ascending; **stamens** 6, essentially in 1 whorl, arising from top of perianth tube; filaments spreading, 0.3–0.4 mm long, white; anthers basifixed, strongly dithecal, 0.6–0.75 mm long, whitish, longitudinally dehiscent; pollen white; **pistil** 1; ovary superior, ovoid and strongly 3-angled, ca. 0.7 mm long and wide, glossy light green, 1-chambered with 1 ovule; styles 3, spreading and appressed-deflexed along angles of ovary, 0.35–0.4 mm long, white, stigmatic-tufted at tip. **Fruit:** achene enclosed within perianth (diclesium) adherent to achene, diclesium ± equally and strongly 3-lobed (tubercles), in range mostly 3.5–4.5 × 3 mm, the tubercle oblong hemi-ovoid, 1.8–2.3 × 1 × 1 mm, straw-colored aging first orangish and later reddish brown, obtuse at tip, somewhat pitted, tips of inner perianth lobes ascending, with several spreading, bristlelike teeth to 1.5 mm long; achene 3-angled ovoid, 1.9–2.4 × 1.5–1.7 mm, glossy brown to light brown. Early June–late July.

Naturalized or native. Annual, occurring in a dense monospecific stand on drying margin of an ephemeral pool in Day Canyon (SH) but expected elsewhere when transported by

waterfowl. *Rumex persicarioides* was described by Linnaeus and is the binomial currently used for this plant in California, where this species would be regarded as native. However, our form has comparatively large tubercles on the fruit perianth, and these plants may instead be more closely related to *R. ochotskius* Rech. f., which is an Asian species. Our plants have smaller and narrower leaves than is typical for *R. persicarioides*. Fruit perianth tubercles are about two millimeters long and white until they dry straw-colored and then orangish to reddish, and the margin of inner perianth lobes has several slender teeth. One confusing features of our plants is that the achene is about two millimeters long, whereas literature states that achenes of *R. persicarioides* and the closely related *R. fueginus* Phil. are at least half a millimeter shorter.

Greater attention needs to be paid to species of this complex, which over the years have been identified as *R. maritimus* L. and *R. fueginus*, and it is possible that there may be as many as three of the mentioned species in range. These are plants with few, widely spaced bristlelike teeth of the perianth lobes covering the fruit.
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