

***Rumex crispus* L.**, CURLY DOCK. Perennial (biennial) herb, taprooted, rosetted, 1-stemmed at base, erect with ascending flowering branches, (35–)50–210 cm tall; gynomonoecious; shoots initially with basal rosette but basal leaves mostly withered by flowering, glabrous; taproot vertical, thick. **Stems:** cylindric (lower stem) to broadly ridged base, 3–10 mm diameter, with ridge descending from each leaf, green aging pink to rose-red, internode 65–250 mm long, node  $\pm$  swollen. **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, thinly membranous, to 50 mm long (on side opposite petiole) and longer adjacent to petiole, with ca.  $12 \pm$  parallel veins, pinkish to brownish, fragile and splitting lengthwise between veins by adjacent stem growth, deciduous or partially persistent; petiole hemi-cylindric, to 170 mm long, the longest lower cauline leaves, decreasing upward from lower cauline leaves, ridged, tough and flexible; blade of cauline leaves lanceolate to elliptic, 70–360 mm long,  $< 115$  mm wide, subcordate to truncate or tapered to narrowly tapered at base (sometimes oblique), finely wavy on margins, acute at tip, pinnately veined with midrib raised on upper surface and principal veins raised on lower surface, minutely papillate. **Inflorescence:** panicle of racemes, terminal, closed,  $\pm$  erect, with erect to ascending lateral branches spaced to 150 mm apart along ridged main axis, larger laterals branching again, raceme having alternate clusters of 2–20 flowers (fascicles) that mostly encircle axis, bracteate, glabrous; axes ridged, internodes between fascicles at anthesis 2–15 mm long increasing 2–3 $\times$  in fruit; bract with ocrea subtending lateral branch and each fascicle, leaflike, greatly decreasing upward, upper bracts linear-lanceolate, to 2 mm long and later abscised so appearing only as a membranous ocrea; pedicel curved outward, at anthesis short increasing 2–7 mm in fruit, having a swelling ca.  $1/3$  from base at which abscission can occur. **Flower:** bisexual and pistillate, radial, at anthesis 2.5–3 mm across, protandrous; **perianth** 6-lobed, dimorphic in 2 distinct whorls; perianth tube inverted pyramidal, 0.7–0.8 mm long, 3-sided in  $\times$ -section; outer whorl (sepals) 3, ascending, boat-shaped, (1.1–)1.5–2 mm long, green with whitish or pale green on margins, each cupping bases of 2 inner perianth lobes; inner whorl (petals) 3, at anthesis deltate-ovate,  $2.5\text{--}4 \times 2.5\text{--}3.5$  mm increasing in fruit, green with whitish or pale green on margins, rounded at tip, with midvein to midpoint enlarging into callus (tubercle); **stamens** 6, arising from rim of perianth tube (absent in pistillate flower); filaments (0.4–)0.7–1 mm long, whitish; anthers basifixed, dithecal,  $0.9\text{--}1.8 \times 0.3\text{--}0.6$  mm, pale yellow, longitudinally dehiscent; pollen whitish; **pistil** 1; ovary superior, obovoid,  $\pm 0.9 \times 0.6$  mm, strongly 3-angled, light green, 1-chambered with 1 ovule; styles 3, reflexed, ca. 0.4 mm long with brushlike stigmas ca. 0.25 mm long. **Fruit:** achene, enclosed within perianth (diclesium); lobes of outer whorl dry, persistent, similar in size and shape as when in flower, lobes of inner whorl deltate-ovate to heart-shaped,  $4\text{--}5.3 \times 3\text{--}5.7$  mm, with at least 1 lobe (2–3) having a conspicuous, ovoid tubercle to midpoint, subequal or unequal if 2+, the wings of lobe orange-brown, usually entire, and netted veined, the largest tubercle ca.  $2.3 \times 1.3$  mm ( $< 1/3$  lobe), pale yellowish ochre, the smaller tubercle  $1.6\text{--}1.8 \times 0.4\text{--}1.1$  mm; achene ovoid and strongly 3-angled or narrowly 3-winged, (2–)2.3–2.7  $\times$  (1.3–)1.5–1.7 mm, glossy reddish or orangey brown, with persistent styles.

Naturalized. Perennial herb (biennial) common throughout the range, appearing in disturbed meadows and waste areas, on drying margins of ponds and creeks, in riparian

woodlands, on seepage areas, and in drainage ditches, as well as occurring in coastal dunes. *Rumex crispus* is shorter in meadows and can be a large, robust plant growing in shade. In this species, as in other species of *Rumex*, bisexual and smaller pistillate flowers can occur on a plant, hence the measurements vary accordingly and likely also the fruit features (needs further study).

B. A. Prigge & A. C. Gibson