

## Vascular Plants of Williamson County

*Rumex hastatulus* – HEARTWING SORREL, ENGELMANN'S DOCK [Polygonaceae]

*Rumex hastatulus* Baldw. in S. Elliott, HEARTWING SORREL, ENGELMANN'S DOCK.

Annual, taprooted, rosetted with spreading to ascending basal leaves, 1-stemmed at base, typically unbranched below inflorescence, erect, in range 16–45 cm; dioecious; shoot with several–many basal leaves and several ascending cauline leaves, glabrous (flowering plant lacking any hairs). **Stem:** to 9-ridged (internodes), not aging cylindric, to 4 mm diameter, tough, lower stem striped purplish red (ridges) at base of shoot and often rose-salmon above. **Leaves:** helically alternate, simple with 2 basal lobes (hastate) to slender and unlobed, petiolate, with stipules; stipules (2) fused into cylinder sheathing stem (ocrea) and fused to upper side of oblique petiole, membranous, to 15 mm long, veins obscure, initially colorless or drying pale brownish, very fragile and generally splitting lengthwise by adjacent stem growth, glabrous; petiole with angle channel, to 35 mm long, tough, with 5 veins on lower side; blade principal lobe of basal leaves obovate to oblong, to 55 × 15 mm, pinnately veined with midrib slightly raised on lower surface, basal lobes ⊥ to blade axis, subequal and subopposite, fingerlike to linear, to 8 mm long, of cauline leaves principal lobe oblanceolate to linear, sometimes lacking basal lobes. **Inflorescence:** panicle of many flower clusters (condensed cymes), unisexual, appearing interrupted at each node along principal rachis and lateral branches, the nodes helically alternate, each node with 8+ flowers opening on different days, bracteate, glabrous; bract subtending panicle = slender, unlobed cauline leaf + membranous ocrea, the bract to 12 × 1 mm, green and 1-veined or with a pair of fine reddish lines on lower surface, the ocrea to 6 mm long; peduncle and other axes ridged, flexible, branch axes pale green; bract subtending lateral branch = only membranous ocrea, to 4 mm long, with a scarlet ring at each node beneath ocrea; flowers on lateral branch (esp. staminate) often crowded by having relatively short internodes; ocrea subtending each node and flower cluster to 2 mm long with exposed side appearing triangular; pedicel arching, 2–3 mm long, colorless or greenish often aging rose-red, each having an inconspicuous abscission zone above midpoint, tip concealed by small swellings of perianth, with convex cells, arching lower portion of pedicel persistent after each staminate flower or aborted pistillate flower abscised. **Staminate flower:** radial, 2–3 mm across, dish-shaped; **perianth** 6-lobed, lobes in 2 distinct whorls; tube short, with swelling at base of outer lobes; outer whorl of lobes (calyx) ovate, 1–1.5 × 0.7 mm, green with narrow colorless margins, acute at tip, rounded on back, lacking callosity (lacking a tubercle); inner whorl of lobes (corolla) broadly elliptic, ca. 1.5 × 0.9 mm, on some flower inner lobes > outer lobes, obtuse at tip; **stamens** 6, essentially in 1 whorl, arising from top of short perianth tube; filaments spreading, 0.4–0.5 mm long, translucent, tapered from base to tip; anthers basifixed, strongly dithecal, 1–1.4 mm long, pale light yellow or tinged red, longitudinally dehiscent; pollen pale yellow; **pistil** absent. **Pistillate flower:** radial, ca. 1.5 mm long and 1 mm across; **perianth** 6-lobed, lobes in 2 distinct whorls, dimorphic, appressed to ovary; tube short, with swelling at base of outer lobes; outer whorl of lobes (calyx) narrowly ovate, 0.7 × 0.5 mm increasing 2× in fruit, rounded on back, green with narrow colorless margins, lacking callosity (lacking a tubercle); inner whorl of lobes (corolla) flat-ovate, ca. 1 × 0.65 mm, green with raised midvein on outer (lower) surface, greatly increasing in fruit; **stamens** absent; **pistil** 1; ovary superior, ovoid and weakly 3-

angled,  $0.5 \times 0.3$  mm, colorless, 1-chambered with 1 ovule; styles 3, spreading, short and threadlike, with seastarlike stigmas exerted from perianth from between perianth lobes and resting on back of inner lobes,  $\pm 0.45$  mm across, colorless to translucent pink, with about ca. 10 short, stigmatic and conspicuously papillate arms. **Fruit:** achene enclosed within papery brown perianth (diclesium) adherent to achene, somewhat 3-sided, the 3 covers (enlarged inner whorl of perianth) inversely heart-shaped,  $2.7\text{--}3.2 \times 2.7\text{--}3.2$  mm, before drying light green in center with a halo of white and outer band rose-pink, outer perianth lobes cupping touching edges of inner lobes; achene 3-angled spindle-shaped,  $0.8\text{--}1.2 \times 0.6\text{--}0.9$  mm, brown to dark brown.

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