

## Vascular Plants of Williamson County

### *Kallstroemia parviflora* – WARTY CALTROP [Zygophyllaceae]

***Kallstroemia parviflora*** J. B. S. Norton, WARTY CALTROP. Annual, taprooted, many-stemmed at base, matlike with radiating shoots often forked but not rooting at nodes, prostrate and trailing, < 5 cm tall, mat to 150 cm across with principal shoots to 110 cm long; shoots  $\pm$  2-dimensional (plagiotropic), hirsute (to 2 mm long) with most hairs < 1 mm long. **Stems:** cylindric, to 5 mm in diameter, tough, green, principal axes zigzagged, commonly swollen at bases of internodes + nodes, internodes 20–50 mm long. **Leaves:** opposite decussate, even-1-pinnately compound, with one leaf larger at each node (anisophyllous, 1 less pair of leaflets), pairs of lateral leaflets in range (2–)3–5 and mostly angled forward, oblong in outline with subequal leaflets, petiolate, with stipules; stipules 2 (4 per node), fused to lower stem and petiole at swollen node, narrowly acuminate-triangular, 2.5–4 mm long, with straight hairs 0.5–1 mm long; petiole with pulvinus, to 7 mm long, pulvinus ca. 2 mm long, above pulvinus cylindric to shallowly channeled; rachis in range 4–32 mm long, extended beyond the uppermost pair of leaflets,  $\pm$  strigose with upward-pointing hairs and some long hairs; petiolules pulvinuslike, to 0.5 mm long, pale green; blades of leaflets elliptic or obovate to narrowly ovate, (2–)5–22  $\times$  2–10 mm,  $\pm$  asymmetric and oblique at base, entire, acute to obtuse at tip, pinnately veined with midrib raised on lower surface, often 2-veined at base and midrib not centered, upper surface with long hairs along whitish midrib, lower surface paler and margins somewhat strigose. **Inflorescence:** flowers solitary (several-flowered cyme), axillary but only on 1 per node alternating side to side, the inflorescence and a new shoot axillary to the small leaf, lacking bracts; pedicel ascending, straight, 10  $\times$  1 mm increasing to 25 mm long in fruit. **Flower:** bisexual, radial, 3.5 mm across if corolla cupped and ca. 10 mm across if petals spreading and dish-shaped; receptacle a low, broad disc; **sepals** (4–)5, ascending, subequal, narrowly lanceolate to narrowly triangular, 4.5–5 mm long not increasing in fruit, green with membranous margins, hirsute with coarse hairs to 2 mm long and some fine, shorter hairs, coarse hairs with bulbous bases (pustulate), calyx persistent in fruit; **petals** (4–)5, overlapping in bud, fan-shaped to obovate, 3.5–5  $\times$  2.8–3.3 mm, yellow-orange, margin often scalloped (shallowly notched) at top, pinnately veined; **nectaries** (4–)5, opposite sepals and at bases of sterile staminodes (outer stamens), crescent-shaped to projecting, 0.2  $\times$  0.2–0.4 mm, fleshy, green to orangish; **stamens** (4–)5 in inner whorl and 4–7 staminodes in outer whorl, staminodes free and appressed to ovary, fertile stamens attached to base of petals; filaments of fertile stamens gradually tapered base to tip, ca. 2.5 mm long, red-orange at base to yellow-orange (white at tip), of staminodes slender and 0.7–1 mm long; anthers versatile but oriented vertically, dithecal, elliptic, 1.4–1.8 mm long, apricot-orange often minutely orange-dotted, longitudinally dehiscent; pollen light orange; **pistil** 1, 3–4.5 mm long, subtended by low, broad disc; ovary superior, short barrel-shaped, low 10-lobed, 0.7  $\times$  1.5 mm, green, densely short-hirsute with glabrous furrows, lobes = chambers, each chamber with 1 ovule attached to center; style  $\pm$  columnar to narrowly conic, 2–2.5  $\times$  1 mm, green, short-strigose; stigmas = 10, reflexed from top of and appressed to style, to 1 mm long, green, densely papillate. **Fruit:** schizocarp, breaking into 10 dry mericarps (nutlets), each mericarp 1-seeded, boney, straw-colored and low-warty (prickles absent), short-strigose on rounded outer face; immature fruit body broadly

ovoid, 9–10 mm long, at chambers ca. 6 mm wide, low 10-ribbed, mericarps separating from central column with beak at top; mericarps D-shaped in outline and 3-sided,  $\pm 3 \times 2$  mm, initially flat on 2 faces and rounded with low warts on back, the flat faces brown and when dry shallowly pitted to sculptured; central column ca.  $3 \times 1.5$  mm, the beak narrowly conic rounded at tip,  $4\text{--}6 \times 3$  mm, often reddish before drying, beak  $>$  central column, 10-grooved and short-strigose with upward-pointing hairs; sepals  $\pm$  to top of mericarps.

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