

Vascular Plants of Williamson County

Orobanche ramosa – HEMP BROOMRAPE, BRANCHED BROOMRAPE [Orobanchaceae]

Orobanche ramosa L., HEMP BROOMRAPE, BRANCHED BROOMRAPE. Perennial herb, nonphotosynthetic root parasite (holoparasite lacking chlorophyll), somewhat fleshy, 1-stemmed or several-branched belowground from axillary buds to form erect stems, at flowering in range becoming 12+ cm tall (aboveground); shoots in range aging 20+ cm long being 1/3 belowground with main axis from a swollen base, arising on old individual from a tuberlike attachment to host root, belowground tuberlike portion to 20 mm diameter, aboveground being essentially an unbranched inflorescence with several cauline bracts (\approx leaves) in transition to the lowest flower, glandular-hairy on exposed surfaces with stalked, colorless hairs; roots embedded in host root (haustorial), with numerous adventitious roots on base of tuberlike structure. **Stems:** cylindrical, to 4.5 mm diameter, yellowish, solid, aboveground with some glandular hairs. **Leaves:** \pm helically alternate, scalelike, without stipules; scale aboveground and belowground appressed, acute-triangular (sometimes splitting downward and appearing 2-forked), 5–10 mm long, yellowish, entire, glabrous; each concealing a well-developed axillary bud compressed front-to-back.

Inflorescence: spikelike raceme, terminal, dense at tip becoming somewhat spaced at anthesis, of 20+ helically alternate flowers, bracteate, glandular-hairy; peduncle stemlike; bractlet subtending pedicel, suberect, sheathing (concealing pedicel), acute-ovate, $5.5\text{--}8 \times 3.8\text{--}5.3$, brownish purple, outer (lower) surface glandular-hairy; pedicel ascending, with 4 faces and flat on inner side, with 4 fine ridges, at anthesis ca. 2 mm long, white and pale purplish, with scattered glandular hairs, at top with 2 opposite bracteoles at 90° bractlet, ascending, narrowly acuminate-lanceolate, $6.7\text{--}8 \times 0.8\text{--}1.2$ mm, off white (yellowish) often with raised reddish center, with stalked glandular hairs on outer (lower) surface.

Flower: bisexual, bilateral, ca. 8 mm across; receptacle inversely conic; remaining open for several weeks before withering; **calyx** 2-lipped, 4-lobed (appearing 6-lobed), \pm colorless, outer surface with stalked glandular hairs; tube \pm bell-shaped, ca. 4×3.5 mm, with 6 raised veins; lobes 4.5–5 mm long, 2 narrow lobes acuminate-triangular ca. 1.3 mm wide, 2 wide lobes deeply 2-forked 2.1–2.4 mm wide; **corolla** 2-lipped, 5-lobed, ca. 15–19 mm long, glandular-hairy with hairs 0.05–0.8 mm long; tube expanded around ovary, ca. 5×4 mm, white; throat indistinct from tube, \pm funnel-shaped, 8–10 mm long, white next to tube and light violet-blue with darker veins above but white on lower side, upper side somewhat hoodlike (galea), lower side with a pair of deep folds forming lengthwise pouches internally white, somewhat bearded raised floors with colorless papillate hairs; lips 4–5 mm long, light violet-blue with darker veins, upper lip 2-lobed, the lobes obtuse-triangular and 3-veined, lower lip 3-lobed, lobes equal and not touching, ovate, ca. $4 \times 2.3\text{--}2.5$ mm; **stamens** 4, lacking staminode, fused at same level at top of corolla tube, 2 shorter stamens attached to upper side and 2 longer stamens attached to lower side; filaments mostly straight but twisted approaching anther to orient anther inward, ca. 5 mm long (upper side) and ca. 7 mm long (lower side), yellowish with glandular hairs at flaring base (shallowly grooved) and white above; anthers dorsifixed, dithecal, arrow-shaped (sagittate) with points on sacs at base, ± 1.5 mm long, white, longitudinally and inwardly dehiscent; pollen pale yellow; **nectary** disc beneath and wider than ovary, bright yellow, producing copious nectar (covering ovary); **pistil** 1; ovary superior, ovoid somewhat

asymmetric and slightly compressed, ca. 4×2 mm, cream-colored, glabrous, 2-chambered, each chamber with many ovules densely packed; style 9–10 mm long, pale violet, with scattered glandular hairs; stigma appressed to upper side of corolla oriented downward, touched on margins by anthers of long stamens, shallowly 2-lobed, ca. 1.5 mm, white, wet.
Fruit: capsule, loculicidal, 2-valved (weakly 4-valved), many-seeded (often > 300), ovoid, in range $6.5\text{--}7.5 \times 3.5\text{--}4$ mm, brown, with at least partial, shallow grooves on 4 sides.
Seed: \pm ovoid to subspheroid, 0.15– 0.25 mm long, brown, with numerous pits.
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