

## Vascular Plants of Lee County

*Trifolium vesiculosum* var. *vesiculosum* – ARROWLEAF CLOVER [Fabaceae]

*Trifolium vesiculosum* Savi. var. *vesiculosum*, CRIMSON CLOVER. Annual, taprooted, 1–several-stemmed at base, with ascending principal branches often with spreading to ascending lateral branches, in range to 60 cm tall; shoots with only cauline leaves widely spaced along stem; roots nodulated. **Stems:** ± cylindric, to 6 mm diameter, tough, internodes to 55 mm long, old stems often crimson dotted with minute stomates. **Leaves:** helically alternate, palmately 3-foliolate, petiolate without basal pulvinus, with stipules, abscising at top of stipule wings and persistent appressed to internode; stipules 2, closed-sheathing and fused to stem at node with membranous tissue reinforced with fibrous veins and to base of petiole, wing oblong to ovate, to 12–20 mm long, membranous and strongly green-veined, closed ca. 5 mm, lacking teeth and lobes on margins, upward-pointing lobes long-tapered to tip, 3–11 mm long; petiole to 100 mm long on lower plant (petiole > blade) and decreasing upward (petiole ≤ blade), at base flared and broadly crescent-shaped, above stipules shallowly channeled, with pustulate hairs on lower side; petiolules = pulvinus, having hairs with enlarged bases (pustulate); blades of leaflets lanceolate and all symmetric, (5–)18–50 × (3–)6–15 mm, tapered at base, minutely toothed on margins with minor vein ending in each tooth, acute at tip, pinnately veined with midrib sunken on upper surface and raised on lower surface, having evenly spaced parallel lateral veins, lower surface with pustulate hairs on midrib. **Inflorescence:** headlike spike, terminal on principal branches, erect, somewhat ovoid with erect flowers at tip to widely spreading flowers at base, at anthesis at least 20 mm long increasing to 60 × 20–25 mm in fruit, fully developed 100+-flowered, flowers densely helically alternate in pseudowhorls of 8 spaced 2 mm apart, flowers sessile along ridges, at anthesis flowers erect, bracteate, glabrous; bract subtending peduncle leaflike, stipules fused across node with wing 5 mm long and auricles to 7 mm long, blade 3-foliolate, blade with channeled upper petiole abscised above stipule; peduncle 10-ridged, sparsely short-hairy along ridges; leaflike bract subtending young spike, 3-foliolate, having 3 ridges descending on peduncle, with 2 winglike stipules fused across node 3–4 mm + upward-pointing auricles, petiole mostly < 5 mm long, petiolule = pulvinus 1 mm long, leaflet blades ca. 16 × 6 mm, abscised above stipule in early fruit; **involucre** of bractlets subtending raceme absent; rachis 8-ridged, greenish, glabrous; bractlet subtending flower narrowly oblong to lanceolate, 5–8 × 0.8–1.3 mm including slender point at tip, whitish, parallel-veined with narrow margins, persistent; pedicel absent, flowers and bractlets strongly attached to rachis. **Flower:** bisexual, bilateral, pealike (papilionaceous), ca. 3 mm across (corolla); **nectary** nectar-producing receptacle below ovary (not observed); **calyx** 5-lobed, ± 10 mm long, with sparse soft hairs; tube oblong, ca. 5 × 1.4–1.7 mm, with ca. 25 slightly raised veins, whitish and pliable but green and thicker at top (below calyx lobes); lobes long-acuminate pointed at tip, unequal, 3.5–5 mm long slightly longer on lower side, green, with V-shaped sinuses, becoming bristlelike in fruit but margins not barbed **petals** 5, creamy white (not observed aging pink); banner erect, folded forward from midvein, lacking claw, oblanceolate, in range oblanceolate, ± 13–15.5 × 3.7–4 mm, parallel-veined, lower portion free but tube-shaped, upper portion flared with margins rolled backward, acute at tip, parallel veins alternating with colorless tissue; wings 2, ⊥ to banner and locked with keel,

clawed, the claws slender, 3–4.5 mm long fused to keel claws, 1-veined, the limbs  $\pm$  acute-oblong,  $\pm 6 \times 1.3$  mm, with basal lobe fleshy adhering to keel, glabrous; keel of 2 petals fused on lower edge from base-to-tip,  $<$  wings, clawed, the claws 4.5–5 mm long and fused base-to-top, fused limbs not sharply folded, each oblong, ca. 5 mm long, with a backward-pointing basal lobe, adherent with fleshy lobes of wings, parallel-veined on each limb; corolla aging papery, light orange-brown (coppery), and veiny; **stamens** 10, diadelphous (9 filament fused and 1 free); filament sheet straight, ca. 7 mm long, translucent-white, filament free portions 2.5–3 mm long, the central 3–4 narrowly winged (cobralike) approaching top with the longest filament the widest, filament of free stamens exceedingly slender; anthers dorsifixed near base of anther, dithecal, 0.25–0.3 mm long, light orange-yellow, longitudinally dehiscent; pollen light orange-yellow; **pistil** 1, ca. 13 mm long, not stalked; ovary superior, linear acute at top, ca.  $5 \times 0.5$  mm, light green, lower portion with ovules and upper portion beaklike, sparsely puberulent with upward-curved hairs to about midovary, 1-chambered with 1–several attached to upper side; style translucent to midpoint and orangish above midpoint, typically persistent on mature fruit; stigma capitate, minute. **Fruit:** pod (legume, locally low seed set), indehiscent irregularly rupturing by growth of seeds, 1–several-seeded, lanceoloid, to  $8 \times 2 \times 2$  mm, seed-containing lower portion membranous aging papery with thin wall tightly appressed to bulging seed, to 4 mm long, upper portion narrowly acute and green; retained on head within an inflated calyx tube, the tube obovoid to subspheroid touching and somewhat compressed by adjacent calyces, 3–4.5 mm across, straw-colored fibrous with tiny papery windows, principal veins from base ca. 25 and raised with short,  $\perp$  cross veins, calyx lobes spinelike and spreading; corolla radiating, papery brown and veiny, enclosing scarious stamen sheet surrounding fruit. **Seed:**  $\pm$  subspheroid with shallow notch at hilum, in range 1.2–1.7 mm, dull orange to red-orange, seed minutely textured (roughened).

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