

Trifolium microcephalum Pursh, SMALL HEAD CLOVER. Annual, taprooted, 1–several-stemmed at base, decumbent to erect, 4–20 cm tall; shoots with only cauline leaves, pilose; roots nodulated. **Stems:** cylindric, to 2 mm diameter, green aging reddish or occasionally purple-red, internodes to 120 mm long. **Leaves:** helically alternate, palmately 3-foliolate, petiolate without pulvinus, with stipules; stipules 2, sheathing and fused to stem and to basal portion of petiole, wing asymmetrically broadly ovate with long-acuminate tip, 4–10 mm long, the large stipules serrate on outer margin, having several fine veins slightly raised on lower surface, green but near base with colorless patches between veins, pilose on lower surface and glabrous on upper surface; petiole 10–28 mm long, above wings conspicuously channeled, with blade abscising near top of petiole leaving petiole persistent; petiolules pulvinuslike, ca. 0.5 mm long; blades of leaflets heart-shaped obovate to narrowly obovate, 3–16 × 2–8.5 mm, tapered at base, short-serrate except basal 1/3, rounded to truncate and notched at tip with a minute tooth terminating midrib, pinnately veined with principal veins slightly raised on lower surface. **Inflorescence:** headlike spike, terminal and axillary, initially shallowly domed becoming hemispheroid to ovoid, 6.5–9 mm across, of 25–35 sessile flowers in 4–5 whorls, bracteate; peduncle cylindric, 20–60+ mm long, green aging purplish red, pilose-villous aging glabrescent; **involucre** subtending the lowest whorl of flowers (= fused bractlets), 8–9 lobed, at early anthesis cup-shaped, ca. 6 mm diameter and 5.5 mm tall, spreading aging saucer-shaped, ca. 10 mm diameter and 0–3 mm tall, whitish to pale green at base and aging somewhat ruffled, densely villous on lower surface and lobes villous on upper surface, having ca. 24–27 veins at base with some veins forking near base, lobes acuminate, green aging purplish red, each terminating in awn < 1 mm long; rachis scarcely ridged between whorls, 2–4 mm long, white; bractlets subtending flowers absent. **Flower:** bisexual, bilateral, pealike (papilionaceous), ca. 1 mm across (calyx); **nectary** nectar-producing receptacle below ovary; **calyx** 5-toothed, in range 3.8–4.2 mm long, short-pilose; tube inversely conic, 1.7–2.1 mm long, light to pale yellowish green, 10-veined with a vein to each lobe and sinus, the vein to sinus commonly forked with branch going to a lobe; lobes ascending-erect, lanceolate to narrowly ovate, 2–3.3 mm long, 0.9–1.2 mm wide at base, straight, membranous on margins to midpoint, short-serrate on margin and 1–3 veined, green along veins and short-pilose on upper surface, acuminate portion ciliate on margin; **petals** 5; banner oblong, 3.5–4.1 × 1.1–1.4 mm, folded longitudinally but partially expanded and slightly curved upward toward tip, light purplish red to light purple, rounded at base, rounded at tip, glabrous; wings 2, clawed, claws slender, ± 1.5 mm long, limbs lanceolate-oblong, 1.3–1.5 × 0.3 mm, light purplish red to light purple, ± bladdery lobed at base above claw, attached to keel above lobe, acute at tip; keel of 2 petals partially fused on lower edge, clawed, ± scoop-shaped, claws ± 1.5 mm long, whitish, limbs ± elliptic, ca. 1.25 × 0.55 mm, white at base and dark purplish red from 1/3 to tip; **stamens** 10, diadelphous (9 filaments fused and 1 free); filament sheet fused most of length, 2–2.9 mm long, filament free portions 0.3–0.8 mm long, white, free stamen 1.4–2 mm long, white; anthers dorsifixed, dithecal, oblong, < 0.1 mm long, yellow, longitudinally dehiscent; pollen yellow; **pistil** 1, ca. 2.4 mm long; ovary superior, ellipsoid to ovoid compressed side-to-side, 0.8–1 × 0.3–0.4 mm, green, glabrous, 1-chambered with 2 ovules attached to upper side; style 1.5–1.7 mm long, whitish, upcurved at tip into stigma; stigma terminal, 0.1–0.15 mm long, yellowish. **Fruit:** pod (legume), indehiscent, 1(–2)-seeded, obovoid to oblong

compressed side-to-side, ca. $1.7\text{--}2.4 \times 1.3\text{--}1.4$ mm, to ca. 0.9 mm thick, light tan, beaked and tough (chartaceous) at tip, membranous and transparent basally. **Seed:** ovoid to ellipsoid, $1.3\text{--}1.8 \times 1\text{--}1.3$ mm, slightly compressed to ca. 0.8 mm thick, dull mottled olive with dark purplish red. Mid-April–late May.

Native. Annual occasionally encountered, but only in select years, growing typically in isolated grassy habitats, as a forb in the understory of naturalized grasses. *Trifolium microcephalum* in range has seldom been collected, but its true abundance is revealed in a year like 2010, when germination was enhanced by significant spring precipitation. This species has an involucre that is initially cup-shaped, and the involucre ages flattened with awns on tips of the lobes.

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