

Trifolium willdenovii Spreng., TOMCAT CLOVER. Annual, taprooted, 1–several-stemmed at base, unbranched (excluding axillary inflorescences) or sparingly branched above, erect to decumbent, 15–40 cm tall; shoots with only cauline leaves, green aging purplish red, glabrous; roots nodulated. **Stems:** slightly ridged to cylindric, to 2.2 mm diameter, becoming ridged on drying, internodes 2–7 mm at base of main stem and lateral branches increasing upwards to 60 mm long; hollow. **Leaves:** helically alternate, 3-foliolate, petiolate without pulvinus, with stipules; stipules 2, sheathing and fused to stem at node and to petiole for ca. 1/2 stipule length, wing \pm semi-ovate to lanceolate, 8–22 mm long, sheathing stem for 0.1–2.5 mm, generally entire (lower leaves) or having several–10 teeth on outer margin (upper leaves, especially when subtending a peduncle), 6–9-veined at midpoint, green aging dark purplish red, free portion long-acuminate, $9\text{--}10.5 \times 1.4\text{--}2.5$ mm, 2–4-veined at base but with only 1 vein to tip, with 0–2 teeth on inner margin; petiole channeled, 9–90 mm long, 1.2–1.5 mm wide at top of stipule tapered to ± 1 mm wide approaching leaflets, low side ridged and 8-veined (3 veins prominent), green aging dark purplish red, glabrous except for 2–6 thick hairs on upper side at tip, hollow; petiolules 0.2–0.5 mm long, tannish green or light yellowish green, \pm fleshy; blades of leaflets linear to narrowly elliptic, $13\text{--}50 \times 0.9\text{--}2.2$ mm, tapered at base with margin folded upward from midrib and V-shaped in \times -section, short-serrate on margins with widely spaced, spine-tipped teeth, narrowly acuminate and short-spined at tip, pinnately veined with midrib prominent on lower surface. **Inflorescence:** headlike raceme, terminal and axillary, with 22–29 flowers in 3–4 whorls, bracteate, glabrous; peduncle 40–53 mm long, green aging purplish red, smooth or slightly angled; **involucre** of fused bractlets subtending lower whorl of flowers, forming a toothy disc broadly and shallowly inversely conic to platelike, 9–14 mm diameter, with 45–50 teeth, becoming reflexed in fruit, with ca. 30 veins at base, green along veins, whitish membranous between veins, teeth narrowly acuminate, sometimes with a lateral tooth on each margin of tooth near base; rachis 3–3.2 mm long; bractlets subtending other flowers absent; pedicel ca. 0.5 mm long. **Flower:** bisexual, bilateral, pealike (papilionaceous), 2.5–3.5 mm across, 3–4 mm high, pale purple, purplish red, and white; **nectary** nectar-producing receptacle below ovary; **calyx** 5-toothed, tubular, 5.6–7 mm long; tube oblique at top with upper sinus deeper than lower sinuses, 1.8–2.5 mm long on upper side, 2.9–3.8 mm long on lower side; lobes unequal, acuminate-lanceolate, $1.5\text{--}3 \times 0.5\text{--}0.9$ mm, lower lobe the longest, upper pair of lobes the shortest, awned at tip, erect except lower lobe bent downward; **petals** 5; banner oblanceolate, bent or curved upward above midpoint, $8.5\text{--}9.5 \times 2.5\text{--}3.5$ mm, pale purple, tapered at base, rounded to notched at tip, glabrous; wings 2, clawed, claw 4.7–5.5 mm long, tapered to narrower base, limbs narrowly obovate, $3.2\text{--}4 \times 1\text{--}1.4$ mm, lobed at base above claw and coupled to keel petals, purplish red; keel of 2 petals partially fused on lower edge, clawed, \pm scoop-shaped, claws 5–6 mm long, tapered from limbs to narrower base, whitish with purplish red below limbs, limbs semi-ovate to semi-obovate, $2.2\text{--}2.5 \times 1.2\text{--}1.7$ mm, purplish red but with white base and tip; **stamens** 10, diadelphous (9 filaments fused and 1 free); filament sheet ca. 6–6.5 mm long, filament free portions 0.6–1.4 mm long alternating long and short, white, filament of free stamen 5–7.5 mm long; anthers dorsifixed, dithecal, oblong, ± 0.2 mm long, bright yellow, longitudinally dehiscent; pollen light yellow; **pistil** 1, 6.5–7.2 mm long; ovary superior, oblanceoloid compressed side-to-side, 1.2–2 mm long, green, 1-chambered with 2 ovules attached to upper side; style 4.3–5.3 mm long, light green at base

and below stigma but tinged purplish red above midpoint; stigma partially to 1 side at tip of style, slightly curved upward, grooved, slightly 2-lobed, with a whitish, fleshy receptive surface forming an arched crest. **Fruit:** pod (legume), indehiscent, 2-seeded, rectangular-oblong, $2.7\text{--}3 \times 2.3$ mm, compressed to ca. 1 mm thick, tannish, rounded on 3 angles and squarish on angle with style, membranous and veiny on valves, thick-veined on periphery. **Seed:** quadrangular to oblong compressed side-to-side, ca. $1.7 \times 1.1 \times 0.7$ mm, dull brown. Late February–mid-May.

Native. Annual occasionally encountered throughout the range on grassy slopes and openings in recently burned chaparral. *Trifolium willdenovii* formerly was treated as *T. tridentatum*. This species has very narrow leaflets, and so is always easily distinguished from the other clover species in range.

B. A. Prigge & A. C. Gibson