

Vascular Plants of Williamson County

Simsia calva – AWNLESS BUSH SUNFLOWER [Asteraceae]

Simsia calva (A. Gray & Engelm.) A. Gray, AWNLESS BUSH SUNFLOWER. Subshrub, taprooted with caudex at ground level, many-stemmed at base, branches spreading to ascending, in range to 95 cm tall; shoots with only cauline leaves, especially stems extremely scabrous, hirsute and hispid with enlarged bases; principal root at maturity \pm 20 mm diameter, with fleshy center (stele) and soft wood + thick phloem. **Stems:** cylindric, mostly 2 mm diameter (except basal stems), easily broken, with a pair of ledges across nodes bearing a leafy, stipulelike appendage (“nodal disc”), to 4 per node, auriclelike, appendage sessile and often connecting petiole bases in pair, broadly ovate to somewhat fan-shaped, mostly to 7 mm long, with 5 or more principal veined raised and arising from ledge, hirsute-hispid with some inconspicuous glandular hairs. **Leaves:** opposite decussate, simple and toothed or 3-lobed with a pair of basal lobes, petiolate with pair fused by ledges across node, without stipules but having leafy, stipulelike structures at leaf base (4 per node); petiole channeled with 2 ridges, 3–14 mm long, green to purple-red, stiff-hairy; blade \pm deltate or triangular to ovate, in range 11–75 \times 9–60 mm, truncate to subcordate at base, dentate to serrate (crenate) on margins and lobe margins, mostly obtuse (acute) at tip, 3-veined from base and pinnately veined with most veins sunken on upper surface and principal veins raised on lower surface. **Inflorescence:** head, appearing solitary and terminal on long peduncle but eventually in open cymelike arrays, head radiate, 19–34 mm across, in range with 7–15 sterile ray flowers and many bisexual disc flowers, bracteate, hirsute-hispid; bracts subtending first peduncle opposite, leaflike; bract subtending second peduncle alternate, leaflike often 3-lobed, to 20 mm long; peduncle erect to ascending, in range at anthesis 90–210 mm long, cylindric without ledges at nodes, with some thick-celled, stout hairs and hairs of other sizes, lacking bracts at top (calyculus); **involucre** bell-shaped to broadly bell-shaped, ca. 10 \times 8–13 mm, with spreading phyllaries, phyllaries in range $<$ 28 in 3–4 series, lanceolate, 7–10 \times 1–2 mm, green but some with lighter patches below midpoint and inner phyllaries often with purple tip, with raised midvein on back, having hispid hairs on margins and along raised midvein and small hairs on the exposed surfaces; bractlet subtending disc flower (palea), strongly keeled and sideways folded over ovary, compressed boatlike, 8–8.5 \times 1.5 mm, folded straight along midvein, scarious with 7–9 parallel veins, above midpoint jagged to short-ciliate and sometimes with shoulder, scabrous along keel, tip ca. 1.5 mm long and purplish, veins greenish aging tannish, with short hairs some some small glandular hairs. **Ray flower:** neuter; **calyx (pappus)** absent; **corolla** to 13 mm long, inconspicuously notched; tube slender; limb broadly elliptic to elliptic-ovate, ca. 8 \times 4–4.5(–6) mm, golden yellow aging red, finely 5–7-veined and red on lower surface, upper surface \pm papillate, lower surface with raised veins and puberulent along veins; **stamens** absent; **pistil** 1, sterile; ovary inferior, 3-sided, 4.5 \times 0.4 mm, 3-winged, greenish, tapered to narrow base; style absent. **Disc flower:** bisexual, radial, 3 mm across, ca. 14 mm long; **calyx (pappus)** of 0–4, vestigial or awl-shaped scales, to 0.5 mm long, with thickened base; **corolla** 5-lobed, 7.5–8 mm long; tube cylindric flared at base, 1.5–1.8 \times 0.5 mm, whitish to flesh-toned due to glands, minutely hirsute with short white hairs and short glandular hairs; throat at base inflated and somewhat 2-lobed at base, compressed and ca. 1 mm diameter, yellowish, with

raised veins, upper portion cylindrical and 4 mm long, colorless with 5 golden yellow veins to sinuses; lobes spreading, acute narrowly ovate, $1.1-1.3 \times 0.5-0.6$ mm, golden yellow with veins aging purple-red, puberulent especially along veins and papillate on margins; **stamens** 5, attached to top of corolla tube; filaments attached to top of corolla tube, flattened front-to-back, 2.5–3 mm long, yellow with white attachment to anthers; anthers 5, fused into cylinder surrounding style, partially exerted, ± 3 mm long having yellowish, acute-triangular appendages at tips, golden yellow aging reddish, longitudinally dehiscent; pollen golden yellow; **nectary disc** on top of ovary surrounding style, 0.3×0.4 mm, white; **pistil** 1; ovary inferior, wedge-shaped compressed side-to-side, ca. 4×1.5 mm, white, narrowly winged, stiff-hairy with upward-pointing short hairs, 1-chambered with 1 ovule; style ca. 10 mm long, pale yellow, 2-branched becoming recurved, the branches stigmatic, exerted, yellow-orange, conspicuously short-hairy. **Fruits:** achenes (cypselae) of disc flowers strongly flattened obovate, $3.8-4.6 \times 1.6-2.6$ mm, brown, biconvex swollen at seed, having winglike margins and conspicuous notch at top, glabrous to glabrate.

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