

## Vascular Plants of Williamson County

*Strophostyles helvola* – TRAILING WILD BEAN, AMERIQUEBEAN [Fabaceae]

*Strophostyles helvola* (L.) Elliott, TRAILING WILD BEAN, AMERIQUEBEAN. Perennial vine, twining on itself and climbing on neighboring plants and other supports; shoots with only cauline leaves. **Stems:** ridged and subtly angled, to 2 mm diameter, internodes long and to 110 mm long, aging red-purple starting along ridges on exposed side, pilose. **Leaves:** helically alternate, pinnately 3-foliolate, petiolate with pulvinus, with stipules; stipules 2, attached to stem and base of pulvinus, lanceolate-triangular, ca.  $3.5 \times 1$  mm, green, ridged on lower surface, parallel-veined, appressed short-ciliate on margins; petiole to 55 mm long, pulvinus ca. 1.5 mm long, axis above pulvinus channeled and 2-ridged,  $\pm 1$  mm diameter, ridges often red-purple, pilose to strigose; rachis channeled, to 8 mm long, pilose; stipel 1 at petiolule of each lateral leaflet and 2 at petiolule of terminal leaflet, acute,  $1-1.3 \times 0.6-0.7$  mm, parallel-veined, with inconspicuous glands on margins; petiolule = pulvinus, pilose with hairs angled downward from lateral leaflets; blades of leaflets ovate to mitten-shaped and shallowly to deeply 2-3-lobed with lateral lobes below midpoint, to  $50 \times 37$  mm, central lobe often wider above midpoint (obovate), lateral leaflets asymmetric at base, lobes entire, obtuse with short point at tip, 3-veined at base with principal veins raised on lower surface, upper surface short-strigose but strigose along principal veins, lower surface strigose. **Inflorescence:** raceme, axillary, mostly with 10+ flowers, flowers helically alternate, bracteate; peduncle strongly ridged, at anthesis 160-225 mm long and  $\gg$  leaf, with dislike pulvinus at base, mostly strigose with downward-pointing hairs (pilose); rachis ridged, each ridge descending from bractlet, short-strigose; bractlet subtending base of pedicel awl-shaped, 2-2.4 mm long, pale green, sparsely short-strigose and minutely ciliate on narrow membranous margins; pedicel ca. 1 mm long, with short hairs, at top with 2 opposite bracteoles oriented  $90^\circ$  from bractlet, bracteoles lanceolate with swollen base,  $3.5-3.7 \times 1-1.2$  mm, 7(9)-veined, with several short-strigose hairs, persistent in fruit. **Flower:** bisexual, bilateral, pealike (papilionaceous), ca. 10 mm across; nectary on receptacle surrounding ovary, producing abundant nectar; **calyx** 2-lipped, appearing 4-lobed, ca. 5 mm long; tube bell-shaped,  $2-2.3 \times 2.3-2.5$  mm, sparsely short-hairy to glabrate; upper lip (= 2 lobes) broadly ovate, ca.  $2 \times 3.5$  mm, purplish; lower lip 3-lobed, mostly green, lower lobe acuminate, 2 mm long, short-hairy, lateral lobes  $\pm$  deltate, 1.5 mm, short-hairy; **petals** 5, clawed, glabrous; banner with short-claw, limb spreading, roundish with short notch at top,  $11-12 \times 11-12$  mm, cream-colored to midpoint and pink-purple above midpoint (fading quickly when picked), having a purple crescent several mm above the claw and above that faint radiating lines, at base of limb with a pair of lobes curved upward; wings 2, oriented forward beside the keel but not attached, claw linear, 2 mm long, white, limbs  $\pm$  oblong, ca.  $8 \times 3$  mm, mostly white but pink-purple at tips; keel of 2 petals fused most of length, claws linear, 2 mm long, white, limbs fused on lower side from claw to tip and on the upper side ca.  $2/3$  with only ca. 3 mm open from claw to exposed stamens, wider lower portion ca.  $6 \times 6$  mm, white, upper portion twisted and curved backward (partially coiled), white to deep purple on coil; **stamens** 10, diadelphous (9 filaments fused and 1 free), fully enclosed by keel; filament sheet somewhat sigmoid (corresponding to coiled keel), ca. 8 mm long, white, flared upward and bent  $90^\circ$  approaching free portions 5-6 mm long; anthers dorsifixed, dithecal, 0.6-0.75 mm, light

yellow, longitudinally dehiscent; pollen light yellow; **pistil** 1, ca. 15 mm long, curved to conform to keel and fully enclosed within keel; ovary superior, cylindric and crescent-shaped, ca. 5 mm long, white, sparsely short-hairy, 1-chambered with to 10 ovules attached to upper side; style curved and compressed side-to-side, white at base to greenish and short-hairy above midpoint, having a dense tuft of longer hairs around terminal green stigma. **Fruit:** pod (legume), often 8–9-seeded, dehiscent by 2 valves twisting 180–540°, before splitting cylindric with a pointed beak (style), 45–100 × 5–5.5 × 5–5.5 mm, tannish brown, with raised veins, slightly bulging at seeds, sparsely short-strigose with hairs pointing toward tip. **Seed:** oblong, 4.5–6 × 3 × 2.5–4 mm, black to reddish black with linear whitish hilum, smooth or sometimes with crusty surface material; hilum ca. 3 mm long (> 1/2 length of seed) with small bump at each end of hilum.

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