

Vascular Plants of Williamson County
Gleditsia triacanthos – HONEY LOCUST [Fabaceae]

Gleditsia triacanthos L., HONEY LOCUST. Small tree (in range), fall-deciduous, spinescent (strongly armed), 1-trunked, in range to 7 m tall; essentially dioecious; long shoot-short shoot organization, in springtime forming 1-compound leaves on short shoots (often 5) often with either staminate or pistillate inflorescences, and mostly 2-compound leaves on new growth long shoots, mostly short-hirsute with arched hairs and on some structures among hairs also having compressed food bodies ca. 0.1 mm long aging red; spine = determinate modified branch system formed only on stem axes, branch spine appearing leafless, on long shoots forming on a dominant internodal ridge ca. 1 mm from axillary bud later positioned to 10 mm from axillary bud (= internodal elongation), forming divergent to stem axis originally flexible and arched-ascending soon maturing hardened, \pm straight and \perp to internode, initially green aging crimson to purple-red or drying dark brown, glabrous, strongly flattened side-to-side at the base tapering to cylindrical above midpoint to a fine, sharp tip, the principal spine commonly 40+ mm long and often forming 1–2 lateral spines, on the trunk with too many lateral spines forming a branched unit or compound structure to 150 mm long, at base of the principal spine and each lateral spine subtended by a triangular scale ca. 1×0.7 mm, green with several short hairs and soon abscised (caducous). **Stems (long shoot):** initially coarsely ridged aging cylindrical, with 3 ridges descending from each leaf, \pm zigzagged, internodes to 40 mm long, some armed with spine. **Leaves:** helically alternate, even-1-pinnately compound and 2-pinnately compound leaves as well as transitional forms with mixed primary and secondary leaflets on the blade or in pairs, primary leaflets with 9–11 pairs of leaves usually opposite or subopposite evenly spaced along rachilla (alternate), petiolate with pulvinus, with stipules; stipules 2, inconspicuous and caducous, at base of petiole on leaf buttress just below pulvinus, fingerlike, < 1 mm long, greenish, with a set of glandular food bodies near base; petiole pulvinus conspicuous (on short shoot clustered together), 3–3.5 mm long, green, conspicuously jointed at base, short-hairy, above pulvinus channeled, < 12–17 mm long, initially on upper side densely short-hairy with abundant food bodies ranging from translucent to orangish and pinkish to crimson (blackish); blade (largest) in range mostly with (3–)4–5(–7) pairs of primary leaflets along a channeled rachis similar to petiole short-hairy with upward-arching hairs and food bodies along the edges of the channel, with a short linear extension above the subterminal pair of leaflets caducous; stipels 2 at base of each petiolule similar to stipules; petiolule of leaflets of 1-compound leaves and secondary leaflets of 2-compound leaves ascending from rachis, spaced 8–11 mm apart along rachis or rachilla, = pulvinus < 1 mm long and densely hirsute on lower side; primary leaflet above petiole or petiolule $65\text{--}120 \times 20\text{--}40$ mm; blades of ultimate leaflets asymmetric ovate or ovate-oblong (elliptic), (6–)9–26(–30) \times (3–)5–10 mm, oblique and broadly tapered to subtruncate at base, low-scalloped on margins, rounded to shallowly notched at tip, pinnately veined with midrib raised on lower surface and closer to the trailing margin, initially short-hairy with most hairs along margins (not truly short-ciliate) and along midrib on lower surface, each “tooth” having a translucent gland at top that ages red to blackish, having a tuft of hairs on a minute extension of the midrib. **Inflorescence:** raceme, essentially unisexual on different plants (occasionally pistillate flowers on staminate plants), formed from buds on

short shoots behind expanded leaves, lax, on peduncle 30–85 mm long, with alternate nodes unevenly spaced, of staminate raceme having (1–)2–4 flowers per node on short stalk, flowers crowded and anthesis of flowers mixed along inflorescence, of pistillate racemes typically with 1 flower per node and flower anthesis base to top, inconspicuously bracteate, conspicuously short-hairy; peduncle finely low-ridged including decurrent ridge for the closest stalks, to 10 × 1 mm, light yellow-green, short-hirsute with upward-arched hairs; rachis like peduncle but more obviously ridged. **Staminate flower:** radial, 5–6 mm across; sweetly fragrant; hypanthium funnel-shaped, in range 1–1.3 mm long, greenish, outer surface short-hairy with pale reddish brown hairs, inner surface lined with **nectary**, the nectary green and producing thin nectar; **sepals** in range 3–4, arising on rim of hypanthium alternate with petals, suberect, ovate to elliptic, 1.3–1.5 × 1 mm, light yellowish green, acute to obtuse at tip, outer surface hairy like hypanthium, inner surface with short whitish hairs; **petals** in range 3–4, arising on rim of hypanthium, suberect, broadly elliptic to roundish-broadly obovate, ca. 2 × 1.5 mm, light yellowish green, lower (outer) surface hairy like hypanthium, inner (upper) surface with low midline and some short hairs; **stamens** in range 3–6(–8), free arising on rim of hypanthium; filaments ascending, 2–4 mm long (–5 mm after pollination), pale yellowish green, conspicuously short-hirsute especially below midpoint; anthers ± exserted, dorsifixed-medifixed, dithecal, 1.2–1.4 mm long, pale light yellow or aging tinged reddish, longitudinally dehiscent inwardly; pollen pale yellow to yellowish or cream-colored; **pistil** absent. **Pistillate flower:** radial, 5–6 mm across; sweetly fragrant; hypanthium funnel-shaped, in range 1–1.3 mm long, greenish, outer surface short-hairy with pale reddish brown hairs, inner surface lined with **nectary**, the nectary green and producing thin nectar; **sepals** in range 3–4, arising on rim of hypanthium alternate with petals, suberect, ovate to elliptic, 1.3–1.5 × 1 mm, light yellowish green, acute to obtuse at tip, outer surface hairy like hypanthium, inner surface with short whitish hairs; **petals** in range 3–4, arising on rim of hypanthium, suberect, broadly elliptic to roundish-broadly obovate, ca. 2 × 1.5 mm, light yellowish green, lower (outer) surface hairy like hypanthium, inner (upper) surface with low midline and some short hairs; **stamens** in range to 5, sterile; filaments spreading-ascending, < 2 mm long, pale yellowish green; anthers dorsifixed, dithecal but not fertile, to 0.5 mm long; pollen lacking; **pistil** 1, ca. 3 mm long, short-stalked (stipe); ovary superior, fusiform flattened side-to-side, green, faces depressed from densely hairy margins, 1-chambered with many ovules attached to upper side; stigmatic style arched to looped from top of ovary, ca. 1 mm long, green. **Fruit:** pod (legume), indehiscent, often 15+-seeded, strap-shaped often somewhat twisted or curled and often somewhat curved, mostly to 300 × 30 mm, lustrous dark brown, bulging at seeds, with glabrous faces and short-hairs on edges, before drying with sweet, jellylike pulp surrounding seed. **Seed:** ellipsoid compressed side-to-side, 8–11 × 5–7 mm, brown to dark olive-green, with tiny hilum at end.

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