

Vascular Plants of Williamson County

Opuntia ×alta – HYBRID PEST PRICKLY PEAR [Cactaceae]

Opuntia ×alta Griffiths (if correct, = *Opuntia stricta* × *Opuntia engelmannii* var. *lindheimeri* and probably a hexaploid; *Opuntia stricta* incl. *Opuntia dillenii*, *Opuntia subarmata* Griffiths, and *Opuntia engelmannii* var. *lehmannii* L. D. Benson), HYBRID PEST PRICKLY PEAR. Shrub (in range), stem succulent (severely damaged with winter freezing), green-stemmed, in range lacking permanent spines, individual plants (no clones), in range trunk absent with 1–several branches near ground level, to 140 cm tall; shoot = a series of flattened, photosynthetic stems, upright stem segments (cladodes, pads, joints) in series narrowly constricted between segments but not readily breaking apart (not disarticulating), cladodes with helically arranged short shoots (areoles; from axillary buds) on the stem surfaces. **Stems:** cladodes in range ovate (the largest) to obovate or roundish in outline but conspicuously wavy along edge (sinuous) especially above mid-cladode, (170–)250–450 × (160–)180–250 mm, typical 15–19 mm thick midpad, with helically arranged tubercles (= modified leaf bases) and associated areoles; tubercles low-domelike on new cladodes becoming flatter, green, photosynthetic, glabrous, not glaucous; flesh (cortex and pith) watery and mucilaginous; areoles on mature cladodes spaced mostly 50–60+ mm apart, initially semicircular to broadly ovate and 3 mm across aging larger and elliptic, covered with beige (tannish) to reddish short-woolly hairs. **Leaves:** helically alternate, simple and sessile, without stipules, dimorphic; photosynthetic cauline leaves short-lived on newly emerging shoots, ovoid somewhat compressed front-to-back on lower side and curved outward (not arching toward stem surface), 7.5–9.5 × 3.2–4 mm, acute with short slender point at tip (not hard), arching upward, abscising during shoot expansion and absent when cladode 1/2 of mature size; permanent leaf spines on areole (= modified leaf spine) absent in range; deciduous spines (glochids) sparse, barbed, mildly irritating in skin, sparse (< 30), formed in a crescent-shaped array or patchy on edge of areole, in range < 1.4 mm long, pale brown. **Inflorescence:** flowers solitary (areole dies after flowering), often forming from scattered areoles on faces of cladode rather than along edge, sessile, with ovary covered with stem tissue having tubercles, pubescent areoles and short-lived, narrowly ovoid cauline leaves. **Flower:** bisexual, radial, in range 90–120 mm across, totally lacking red in perianth; **perianth** of ca. 21 segments, segments free, helically alternate, overlapping, unequal in a graded series, the 3–5 outermost segments broadly ovate, acute, and green, grading inward from 10 × 10 mm to 18 × 18 mm, lower half of segment thick and fleshy (1-convex), next 2–4 segments acute-broadly obovate, 15–17 × 20–25 mm, green but with membranous wings on lobes, next 5 segments hammerheadlike with acute tip, grading inward from 21 × 30 mm to 42 × 52 mm and changing from mostly green to light yellow, inner segments ca. 9 in 3 series, widely spreading, fully petal-like and heart-shaped with rounded lobes above midpoint and notched at top, 49–60 × 38–45 mm, light yellow; **stamens** 200+, free, formed on a shallowly sloped axis sector ca. 5 mm long; filaments erect to ascending, linear, 15.5 mm long (the innermost stamens) grading to 27 mm long (the outermost stamens), white to greenish, glabrous; anthers dorsifixed, dithecal, 3–3.5 mm long, pale light yellow, longitudinally dehiscent; pollen pale yellow; **pistil** 1; ovary inferior and embedded in receptacle (stem tissue), top-shaped to narrowly top-shaped, 33–37 × 26–29 mm, green and somewhat glaucous, rounded at base, top of

ovary scarcely depressed, on the surface having ca. 15 low, helically alternate tubercles several mostly above midpoint and ca. 8 in 2 series around the rim at top, leaves ovate, 5–7 × 2.5–3.5 mm, areoles with beige hairs to 0.7 mm long and 0–several whitish, weak spines + longer, yellowish glochids, the wall 7–12 mm thick, white next to chamber and outer green and mucilaginous, 1-chambered with many ovules attached to ovary wall (parietal), the chamber narrowly heart-shaped to shield-shaped, 10–12 × 6 mm, with a stubby, cylindric projection downward into chamber to 4 × 2 mm; **nectary chamber** on top of ovary surrounding narrow base of style, = decurrent bases of filaments, saucerlike, ca. 2 mm long, with copious nectar; style erect, inversely club-shaped, 23–30 × 6 mm, white; stigmas 6–7, exerted above central anthers at same level and the longest stamens, together helmetlike, 7–10 × 6 mm, cream-colored to pale green, individually ascending, fleshy and fingerlike, 5–7.5 × 2 mm, papillate. **Fruit:** berry, few-seeded, top-shaped to obovoid or subspheroid, in range 20–42 × 19–33 mm, purple-red, with < 12 areoles restricted to around top, the areoles small and moundlike of mostly hairs and few glochids, top shallowly depressed and truncate; pulp fleshy, wall 6–10 mm thick, sweet, locule small and restricted above midpoint. **Seed:** circular in outline, in range 4 × 4 mm, yellowish, with girdle ca. 1 mm thick surrounding seed.

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