

Vascular Plants of Williamson County

Opuntia engelmannii var. *lindheimeri* – LINDHEIMER PRICKLY PEAR [Cactaceae]

Opuntia engelmannii Salm-Dyck var. *lindheimeri* (Engelm.) Parfitt & Pinkava, LINDHEIMER PRICKLY PEAR. Shrub, stem succulent, spinescent, population of individual plants + clones via rooted stem segments of broken branches (conspicuously so in overgrazed populations), initially taprooted but mostly fibrous-rooted along buried stems, green-stemmed, highly variable of individual with ascending branches or horizontal branches radiating from base touching ground or not or individuals with both types of branches, in range 20–170 cm tall; shoot = a series of flattened, photosynthetic stem segments (cladodes, pads, joints), narrowly constricted between segments not readily breaking apart, principal branches with often 3–6 cladodes in series but the lower ones forming periderm and not green, cladodes with helically arranged short shoots (from axillary buds) bearing clusters of radiating leaf spines (areoles) on pads of all nodes on the stem surface having leaf spines largely above cladode midpoint or sometimes lacking principal spines on a cladode, trunk absent; adventitious roots formed on buried portions of stem, never formed at nodes. **Stems:** cladodes in range almost exclusively obovate in outline, (45–)120–300(–350) × (40–)100–200(–250) mm, typically 9–12 mm thick, initially bright green mostly aging bluish or bluish green and glaucous, with helically arranged tubercles (= modified leaf bases) and associated spine-bearing areoles in the axils; tubercles flat below raised areole, basal pads senescing yellowish green; flesh (cortex and pith) watery and mucilaginous; areoles mostly 18–26 on each cladode surface + many along edges, to 35 mm apart in 4–5 diagonal rows, many and closely spaced along edge of cladode and sparse at base, areole ± circular in outline, 3–3.8 mm, covered initially with pinkish hairs aging tannish, glochids on upper side of areole, mostly 2–3 mm long, salmon reddish. **Leaves:** helically alternate, simple, sessile, without stipules, polymorphic; photosynthetic cauline leaves short-lived on newly emerging shoots, lanceoloid, 7–13 × 1.8–2.2 mm, fleshy, green often reddish at tip, glabrous, abscising during shoot expansion and absent when cladode < 1/2 mature size; leaf spines on areoles (= modified leaf form) of 2 types, persistent, radial and central spines and deciduous fine spines (glochids), not photosynthetic; permanent spines in range (0)1–2(–5), some individuals with most areoles lacking an emergent spine and others with only a central spine, some individuals with most areoles having 1–2 spines, rare individuals having to 5 spines and comparatively long spines, central spine mostly < 40 mm long (–55 mm long), relatively straight, mostly yellowish (whitish) aging brownish, radial spines < central spine; glochids barbed at tip, irritating in skin, formed in a dense, erect cluster at upper edge of areole, in range mostly 2–3 mm long, ± orange. **Inflorescence:** flowers solitary (areole dies after flowering), sessile, ovary covered with stem tissue hence having tubercles with areoles and ascending, short-lived ± cylindric cauline leaves, 6–10.5 × 3 mm, green or reddish above midpoint. **Flower:** bisexual, radial, < 90–107 mm across; **perianth** of ca. 25 segments, free, helically alternate, overlapping, unequal in a graded series, the outermost segment lanceolate and 22 × 5.5 mm, fleshy and green, in series to ovate (26 × 15 mm) and increasing membranous margins to rhombic (segments increasing from 26 × 14 to 39 × 29 mm) with diminished midvein and green to yellow-green, inner series of “petals” broadly obovate, ca. 40–45 × 35–43 mm, light yellow or yellow-orange at the center at base, with

fine yellow point at tip, somewhat toothed on outer margin; **stamens** > 200, free, formed on a sloped axis, at anthesis erect but when touched responding and quickly tilting toward style; filaments slender, linear, of the outermost stamens to 18 mm long gradually decreasing to 11 mm long (the innermost stamens), light yellow (outer stamens) to pale light yellow (inner stamens), minutely short-papillate; anthers dorsifixed, dithecal, ca. 3.5 mm long, pale light yellow, minutely papillate; pollen light yellow; **pistil** 1; ovary inferior, obovoid depressed truncate at top, at anthesis 46–65 × 23–28 mm, with relatively few tubercles (ca. 20 visible), areoles ± circular with tuft of light brown hairs ca. 1 mm long and glochids to 3 mm long, 1-chambered with many ovules attached to sides, (parietal placentation) the chamber narrowly oblanceoloid to obovoid, 14–22 × 7 mm, the wall 7–9 mm thick, white next to chamber, with mucilage cells; **nectary chamber** above ovary, 3 mm long with low ridges beneath filaments on sloped axis, pale creamy-orange, producing copious nectar; style erect, inversely club-shaped, 20–27 × 5–9 mm, white (sometimes pinkish near base), with ca. 7 stigma lobes, at or above level of anthers, together ca. 7 × 7 mm, the lobes ± erect curving inward, fingerlike, fleshy, green, wet. **Fruit:** berry, many-seeded, broadly obovoid to top-shaped (spheroid in short fruits) typically plump, in range 53–72 × 27–42 mm, beet-colored not glaucous to slightly glaucous, not depressed or depressed only in center on top, areoles widely spaced to 17 + mostly rim areoles, circular and not raised, lacking hard spines but having glochids with tufts of tannish to light brown hairs, chamber obovoid, 29–35 × 18–24 mm; fruit wall 3.5–9 mm thick, mucilaginous; pulp watery, purple-red. **Seed:** ± D-shaped in outline, 2.5–4.5 × 2–3 mm, bony, yellowish but often stained red, encircling girdle ± uniform around seed except at hilum, protruding 0.3–0.5 mm.

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