

23. *Opuntia dulcis* Engelm., Proc. Amer. Acad. Arts 3: 291. 1856. SWEET PRICKLY PEAR. Plates 94–96. Common in desert habitats, often along and near the Rio Grande. El Paso Co., SE at least to Terrell Co. Restricted mostly to the Trans-Pecos. 2,200–3,500 ft. Flowering Apr–May 2 $n$  = 66. To be expected in adjacent NM and Mexico. Map 20.

Although *O. dulcis* appears to be relatively common in the Trans-Pecos, it has not been interpreted consistently as a distinct taxon. The syntype locality was “near the middle course of the Rio Grande, near Presidio del Norte, etc.,” and “frequently observed near Presidio del Norte and Eagle Pass.” The lectotype is a Wright collection with the ambiguous data, “El Paso? West Texas? Probably Presidio del Norte,” *Wright in 1852*, MO. The specific epithet is after the Latin, *dulcis*, “sweet,” a reference to the very sweet fruits as noted on the label of the type specimen.

**Identifying Characters.** *Opuntia dulcis* overlaps the geographic range of *O. camanchica*, but their contact zone is undocumented, at least in the Trans-Pecos. Like most prickly pears, *O. dulcis* is most easily identified using the growth habit. It is larger and more upright in habit than *O. camanchica* (i.e., almost as large as *O. engelmannii*). In *O. dulcis* the spines usually are fewer in each areole, and typically they are more slender than in *O. camanchica*. Usually there are

2(-4) spines per areole in *O. dulcis*. The spines in many distinct populations of *O. dulcis* are light brown proximally and nearly white on the distal portion, but the spines may be almost any color in some populations of *O. dulcis* (D. Ferguson, pers. comm.).

We have observed the flowers of relatively few plants identified as *O. dulcis*. Their flowers are yellow with conspicuous or inconspicuous red centers, and on average they seem to be slightly larger (ca. 5-7 cm), open wider, and have more tepals than those of *O. camanchica* (D. Ferguson, pers. comm.). The inner tepals are ca. 3 cm long, ca. 2 cm wide, broadly spatulate, and truncate-apiculate or obtuse at the apex. The yellow tepals are suffused, not sharply marked with red basally, or with merely an inconspicuous reddish flush in the midregion. Usually the outer tepals are red basally or in the midregion. The filaments are pale green to cream-colored or colorless, ca. 1.5 cm long, and the yellow anthers are ca. 2 mm long. The colorless or rosy style is 2-2.5 cm long, with the stigma lobes usually light green.

The ripe fruits of *O. dulcis* are red to purplish, obovate to obconic, (4-)5-5.5 cm long, 2.5-3 cm in diameter, with a shallow or deep umbilicus. The fruit surface is smooth with few areoles bearing a small number of glochids and no spines. The fruit rind is purple, and the pulp is either pink, purple, to red, or greenish. Apparently, mature fruits are always juicy; the deep purple, pink, to clear juice is sweet. The seeds are tan, irregularly discoid, 3.5-4.5 mm in diameter, with a narrow hilar notch and a prominent aril-margin 0.7-1 mm wide.

**Phenology.** Preliminary indications are that flowers usually open in early to mid-April, near the Rio Grande, and that flowering may continue through May.

Flowers open at midday and at least partially close at night for 1–3 days in cultivated specimens. Fruits mature in June and July. A cultivated specimen in Alpine produced fruits as late as early August. At Tucson, the possible counterpart of *O. dulcis* peaked after 19 August 2000, later than any other prickly pear except *O. ellisiana*.

**Sterile and Immature Specimens.** In aspect *O. dulcis* could be confused with *O. phaeacantha*. The spines in *O. dulcis* usually are not as stout as they are in other Trans-Pecos *phaeacantha* types. The woody pads of *O. dulcis* are not distinctive, being obovate to suborbicular, 15–18 cm long, and 10–15 cm in diameter. Areoles on the distal half of each pad have spines. Distal areoles are elliptic to hemispheric, 5–7 mm long, 4–7 mm wide, with dense, crinkled, light brown hairs.

In most areoles there are two spines. Larger third and fourth spines may be present in some distal or apical areoles. The two-spined pattern includes (1) one lowermost spine that is deflexed, chalky-white with a yellowish tip, 1.2–2.5 cm long, to ca. 0.7 mm wide at the base, flattened on the proximal half, and distally terete; (2) a second spine that is usually positioned immediately above the lowermost spine, in the lower to middle portion of the areole. The second spine is porrect or deflexed, typically off-white to tan-white or tan distally except for the yellowish tip, and brown, red-brown, or reddish at the base, 4–7 cm long, and 1–1.2 mm wide at the base. The second spine is flattened for most of its length. A third spine, if present, projects from the middle portion of the areole. The third spine (when present) is 2–3 cm long, the color of the second spine, and terete or flattened. A fourth spine, resembling the third spine, is present in the apical are-

flattened. A fourth spine, resembling the third spine, is present in the apical areoles of some specimens. Although the spine colors described above are typical in some populations of *O. dulcis*, the spines in other populations may be almost any color (D. Ferguson, pers. comm.). Typical living specimens of *O. dulcis* are easily distinguished from those of *O. camanricha* by their habit, but some herbarium specimens tentatively identified as *O. dulcis* approach *O. camanricha* in spine morphology, and these are difficult to distinguish.

Radial spines are absent in some specimens of *O. dulcis* and present in others. Usually there are two radials; when present, at the lower periphery of the areole. The radials are deflexed, whitish to yellowish, acicular, 2–3 mm long, and readily distinguished from the central spines. Glochidlike bristles are present along the lower areole margin in some specimens, these either projecting or deflexed and with the appearance of slightly longer glochids. The typical glochids are in dense apical crescents or tufts; additional scattered glochids occur along the lateral margins of some areoles.

Immature specimens have one or two spines in each distal areole, and the spines are shorter than those on mature pads. The seedlings are not hairy (D. Ferguson, pers. comm.).

**Biosystematics.** Benson (1982) listed *O. dulcis* as a synonym of *O. phaeacantha* var. *phaeacantha*. Without explanation Weniger (1984) employed the name *O. engelmannii* var. *dulcis* (Engelm.) J. M. Coult. ex K. Schum. for a perceived taxon restricted to South Texas and adjacent Nuevo León, Mexico. Possibly the

entity Weniger perceived as *O. engelmannii* var. *dulcis* is different from the relatively common Trans-Pecos *O. dulcis* of interpretation. The photograph labeled "*Opuntia engelmannii* var. *dulcis*" in Weniger (1984, p. 256) does not appear to be the *O. dulcis* we have recognized in the Trans-Pecos. *Opuntia phaeacantha* and *O. engelmannii* belong to separate but related species groups in *Opuntia*. *Opuntia dulcis* in the Trans-Pecos seems to be closely related to *O. phaeacantha* var. *phaeacantha*, which differs mainly in habit and ecological preference. The Trans-Pecos *O. dulcis* also is similar to and probably closely related to *O. cananbachica*, which differs in habit, flower, and fruit character (D. Ferguson, pers. comm.).

*Synonyms.* *Opuntia lindheimeri* Engelm. var. *dulcis* (Engelm.) J. M. Coult.; *O. engelmannii* Salm-Dyck var. *dulcis* (Engelm.) J. M. Coulter ex K. Schum.; ? *O. expansa* Griffiths; ? *O. eocarpa* Griffiths.

*Common Name.* Sweet opuntia.