

*Opuntia ficus-indica* (L.) Miller, INDIAN-FIG, MISSION-FIG, MISSION PRICKLY PEAR, TUNA CACTUS. Large shrub to small tree, stem-succulent, clonal via rooted stem segments of broken branches, spinescent or not (typically with only irritating, deciduous spines), fibrous-rooted, several-stemmed at base, green-stemmed, irregularly branched, erect to ascending, in range 250–500 cm tall; shoot = a series of flattened stem segments (cladodes, also called pads or joints), narrowly constricted between segments, cladodes not breaking apart but entire limbs sometimes breaking, with but typically without clusters of radiating leaf spines at nodes on the stem surface (areoles); major upright stem woody; adventitious roots produced at nodes when planted. **Stems (cladodes):** obovate (elliptic to oblong), 300–600 × 120–290 mm, typically 20–30 mm thick at midpoint, with helically arranged tubercles ( $\approx$  modified leaf bases) and associated spine-bearing areoles in the axils; tubercles  $\pm$  domelike on new cladode become  $\pm$  flattened, green and  $\pm$  glossy aging dull grayish blue-green, glabrous, photosynthetic; flesh (cortex and pith) watery and mucilaginous; areoles subspheric-obovate to elliptic, 2.5–3 mm across, initially with purplish hairs aging tannish to dark brown. **Leaves:** helically alternate, simple, sessile, without stipules, dimorphic; photosynthetic cauline leaves short-lived on newly emerging shoots, narrowly conic compressed somewhat on surface next to stem, 5–6 × 2 mm, fleshy, purplish, arching toward the cladode tip, abscising during shoot expansion, short-pointed at tip, surface with domed epidermal cells; leaf spines on areoles (= modified leaf), of two types, persistent radial spines and deciduous glochids, not photosynthetic; radial spines uncommon, 0–5(–6) of different lengths, linear, to 40 mm long but generally < 10 mm, the longest cylindrical, the others flattened in  $\times$ -section on upper face (or if only 1-spined), sharp-tipped, whitish, lacking spine sheath; deciduous spines (glochids) barbed at tip, irritating in skin, formed in a dense, erect cluster at upper edge of areole, in range typically 2.5–3 mm long, orangish aging golden brown. **Inflorescence:** flowers solitary (areole dies after flowering), sessile, with ovary covered with stem tissue hence having tubercles and spine-bearing areoles and, initially, the short-lived, narrowly conic cauline leaves. **Flower:** bisexual, radial, with perianth generally ascending to erect,  $\pm$  45 mm across, 70–80 mm long; **perianth** of 16–24 segments, segments free, helically arranged, most overlapping, unequal, in a graded series, the outermost 7–11 segments short, greenish, yellowish, and rose-magenta, succulent and 3–8 mm long, to the innermost and longest segments obovate, 29–36 × 20–22 mm, inner segments pure bright yellow, jagged on upper margin, perianth abscised as a unit with stamens from developing fruit; **stamens** > 200, free, formed on a steeply sloped axis; filaments slender, linear, 11–12 mm long (the outermost stamens) grading to 7.5–8 mm (the innermost stamens), outer ones whitish, inner ones pink-rose, minutely papillate below midpoint, abruptly slender at anther; anthers dithecal, dorsifixed, 1.5–2.3 mm long, whitish; pollen pale yellow; **pistil** 1; ovary inferior and embedded in receptacle (stem tissue), cylindrical bell-shaped, at anthesis 40–50 mm long, with many low, helically alternate tubercles, bearing ephemeral conic leaves like stems (but more green, photosynthetic), areoles  $\pm$  round to oblate, with reddish brown glochids, radial spines absent, 1-chambered, the chamber narrowly oblanceoloid, to 18 × 4 mm, ovary wall thick and mucilaginous; style inversely club-shaped,  $\pm$  21 × 6–7 mm, whitish or pale pink above midpoint, surrounded by sunken nectary chamber; stigmas 8–9, together 6–7 mm across, exerted above central anthers, fleshy and fingerlike, 4–7 × 1.5–2 mm, tawny, curved inward, papillate. **Fruit:** berry, many-seeded, with watery pulp,

obovoid or inversely pear-shaped to subspheroid with a periderm-covered, depressed top, (50–)67–100 × (33–)45–68 mm, purplish red, sometimes with yellow patches; tubercles very low, areoles circular, ± 3 mm, with a dense tuft of dark brown hairs and lighter glochids to 4 mm long, typically without permanent radial spines; chamber shape same as fruit shape, wall more vibrant magenta than surface; pulp light watermelon-colored to yellowish or nearly colorless, somewhat sweet. **Seed:** irregular kidney-shaped, 3.5–5.5 mm long with girdlelike aril, bony, brown; girdle protruding up to 1 mm, golden brown. Late April–late June.

Naturalized. Stem-succulent small tree persisting in locations where originally planted along private property and roadsides, and continually reproducing vegetatively from fallen branches. *Opuntia ficus-indica* is easily recognized, even from other platyopuntias cultivated in range, as having very large cladodes bearing large, edible fruits. Indian-fig tends to have very few areoles with permanent radial spines, but each areole has a dense tuft of irritating glochids.

Next to an agricultural field on the western boundary of the range (Potrero Road), but west of the road and therefore outside the range, is a tall hedge of prickly pears that has large cladodes characteristic of *O. ficus-indica* but which are strongly spined. This barrier hedge, obviously planted, might be identified as the spiny wild form of Indian-fig (known in some treatments as either *O. streptacantha* or *O. megacantha*), although the population being discussed appears to be of hybrid origin with the native cacti on the hillsides across the road because its flowers and fruits are characteristic instead of our hybrids, but produced on large cladodes.

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