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Botany

Cambridge, Mass., John Wilson and Son, 1880

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§ 1. *Joints compressed: rhaphe forming a prominent bony margin around the seed: embryo completing a little more than one circle around the scanty albumen; cotyledons contrary to the sides of the seed.* — PLATOPUNTIA.

* *Fruit pulpy.*

1. **O. Engelmanni**, Salm. Bushy, erect-spreading, much branched: obovate joints $\frac{1}{2}$ to 1 foot long, sparsely armed with bundles of 1 to 3 or sometimes even 5 spines, the stouter ones angled, yellow, sometimes with a red-brown base; old trunks losing their spines: flowers yellow, about 3 inches wide: petals broadly obovate, truncate: the purple oval juicy berry about 2 inches long, with a large flat umbilicus, and with 20 to 25 brown-woolly and slightly bristly areolæ. — Salm. Cact. cult. 1849, 235; Engelm. Cact. Mex. Bound. 47, t. 75, fig. 1-4.

Var. β . **occidentalis**, Engelm. Spines fewer, stouter, farther apart: seeds larger. — *O. occidentalis*, Engelm. & Big. in Cact. of Pacif. R. Rep. iv. 38, t. 7.

Var. (?) γ . **littoralis**, Engelm. Joints often larger, 1 to $1\frac{1}{2}$ feet long: bunches of longer and more slender spines closer together: fruit similar, but with 40 to 50 areolæ: seeds smaller.

Apparently a polymorphous species, extending from Southern Texas to the Pacific, which will probably be identified with some older Mexican species when these plants come to be better understood. The two forms of California are easily distinguished by the characters given above. The var. *occidentalis* has been found on the western slope of the mountains east of Los Angeles and southward to San Isabel, etc., at an elevation of 1,000 to 2,000 feet, *Parry, Schott*. The areolæ of the joints are $1\frac{1}{2}$ to 2 inches apart; spines $\frac{1}{2}$ to $1\frac{1}{4}$ inches long; flowers 3 to $3\frac{1}{2}$ inches wide, yellow with orange centre; fruit often $1\frac{1}{2}$ inches thick; seeds $2\frac{1}{2}$ to $2\frac{3}{4}$ lines wide. The second form, var. *littoralis*, extends on the coast from Santa Barbara and the islands in its gulf (*O. Tittmann*) to San Diego, and southward, *G. N. Hitchcock*. Seeds 2 to $2\frac{1}{2}$ lines in diameter. — The limits of these species are difficult to circumscribe, especially because complete specimens are so hard to preserve and extensive observations in the field have not yet been made. Of the three following no more is known now than there was twenty years ago.

2. **O. chlorotica**, Engelm. & Big. Erect, bushy; old trunks covered with large areolæ which, retaining their vitality, constantly produce new spines; joints large, pale green, orbicular-obovate, with close-set areolæ, each bearing 1 to 5 slender deflexed yellow spines: flowers yellow, $2\frac{1}{2}$ to 3 inches wide, with spatulate petals. — Cact. of Pacif. R. Rep. iv. 38, t. 6, fig. 1-3.

From Mohave Creek eastward to Bill Williams Mountain in Arizona (*Bigelow*); 4, 5, or even 7 feet high, readily recognized by the very spiny trunk and very pale broad joints $\frac{3}{4}$ to 1 foot long.

3. **O. angustata**, Engelm. & Big. Prostrate or ascending, with obovate elongated joints: large oblong areolæ sparse, bearing brown bristles and few (1 to 3) deflexed spines: fruit rather small, deeply umbilicate, with few large seeds. — Cact. l. c. 39, t. 7, fig. 3, 4.

From Cajon Pass eastward into Arizona, *Bigelow*. Joints 10 inches long or more, not half as wide above, narrowed downward; berry $1\frac{1}{2}$ inches long, narrow; seeds 3 lines wide.

4. **O. Mohavensis**, Engelm. & Big. Prostrate, with large nearly orbicular joints, and more numerous (2 to 6) stout and long often curved brown spines. — Cact. l. c. 40, t. 9, fig. 6-8.

On Mohave Creek, *Bigelow*. A doubtful form, of which flowers and fruit are unknown. It seems to approach *O. phæacantha* of New Mexico, and perhaps even the stouter western forms of *O. Rafinesquii*. It is indicated here merely for the attention of future explorers.

O. TUNA and *O. FICUS-INDICA*, Mill., are probably both naturalized about the old missions; one with stout yellow spines and insipid fruit, the last with weaker whitish spines, fruit delicious.

* * *Fruit dry.*

+ *Joints and fruit spiny.*

5. **O. rutila**, Nutt. Prostrate, with thick obovate or elongated joints: areole close, armed with numerous slender reddish or gray flexible spines: large flowers purple: stigmas green: berry deeply umbilicate, with large flat broadly margined