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1 *Melocactus matanzanus*

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4 *Echinofossulocactus*

5 *Gymnocalycium* sp. nov.

OPUNTIA GILVESCENS, A FORGOTTEN TAXON

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Introduction

Opuntia gilvescens was described by David Griffiths (1909) over 100 years ago (Figure 7). It is not an overly abundant plant, but it is distinctive and not rare. It has a large range. We have observed *O. gilvescens* in south-central and western Oklahoma, southern Colorado, central and western Texas, southern and central New Mexico, much of Arizona, southwestern Utah, southern Nevada, and far eastern California. In Mexico, *O. gilvescens* occurs in Sonora, Chihuahua, Coahuila, and apparently Durango and Zacatecas. It is often found on rocky soils, from 3,000 to 5,000ft, but it can be found in deeper soils and at lower elevations. The type locality is in "the foothills of the Santa Rita Mountains, AZ."

Description and Biology

O. gilvescens is frequently confused with *O. phaeacantha* because both are smaller opuntias. Unlike *O. phaeacantha*, *O. gilvescens* is often a symmetrical plant (Figure 1). Mature plants are typically about one meter in diameter or sometimes larger and partially ascending. The cladodes are larger and stiffer than those of *O. phaeacantha*. Cladodes on the main branches rest on edge on the ground but, unlike those of *O. phaeacantha*, secondary branches rise to 22 inches tall (exceptionally to 36 inches). The plants are closely branched and generally do not sprawl as *O. phaeacantha* does. The branches are stiff with woody support tissue, and they are not easily bendable even when dehydrated.

Mature cladodes are about 5–8 inches long, 5–7 inches wide and half-an-inch thick. The cladodes are obovate or nearly orbicular (Figure 2). First year cladodes are glaucous green or greyish-green and can lighten by the second year. In winter, some plants become lilac-purple or pink and often have slightly concave pads (Figures 1, 3).

Glochids are typically straw-coloured to dirty yellow, or sometimes darker golden brown to red-brown, typically darker with age. On younger pads they are one-eighth to a quarter inches long, neatly and evenly arranged in the areoles, often with a central clump and a surrounding ring of glochids that are slightly different in length but there is always a greater amount on the adaxial side. On older cladodes, glochids may be up to half an inch long, and become less regular in arrangement (particularly on edge areoles), with new glochids produced from the center, often producing concentric rings surrounding the entire areole.

Areoles on first-year cladodes may have no spines or up to four major ones, but two is common, often only upper areoles. The spine tips are translucent. On first-year cladodes with two major spines, both may be erect and one or both may be dark. Often both are white. Over time the spines become retrorse, but the major one may remain erect (Figure 4). A few much smaller spines (ca. a quarter inch) may also be present. Older spines are usually chalky white, but some populations have yellowish or darker brownish spines.



Fig.1 *Opuntia gilvescens* mature plant in winter, Kingman, AZ



Fig.2 *Opuntia gilvescens*, Kingman, AZ



Fig.3 *Opuntia gilvescens* lilac pads in winter, Belen, NM



Fig.4 *Opuntia gilvescens* cladode, near Bagdad, AZ



Fig.5 *Opuntia gilvescens* flower, Albuquerque, NM



Fig.6 *Opuntia gilvescens* unripe fruit, Albuquerque, NM

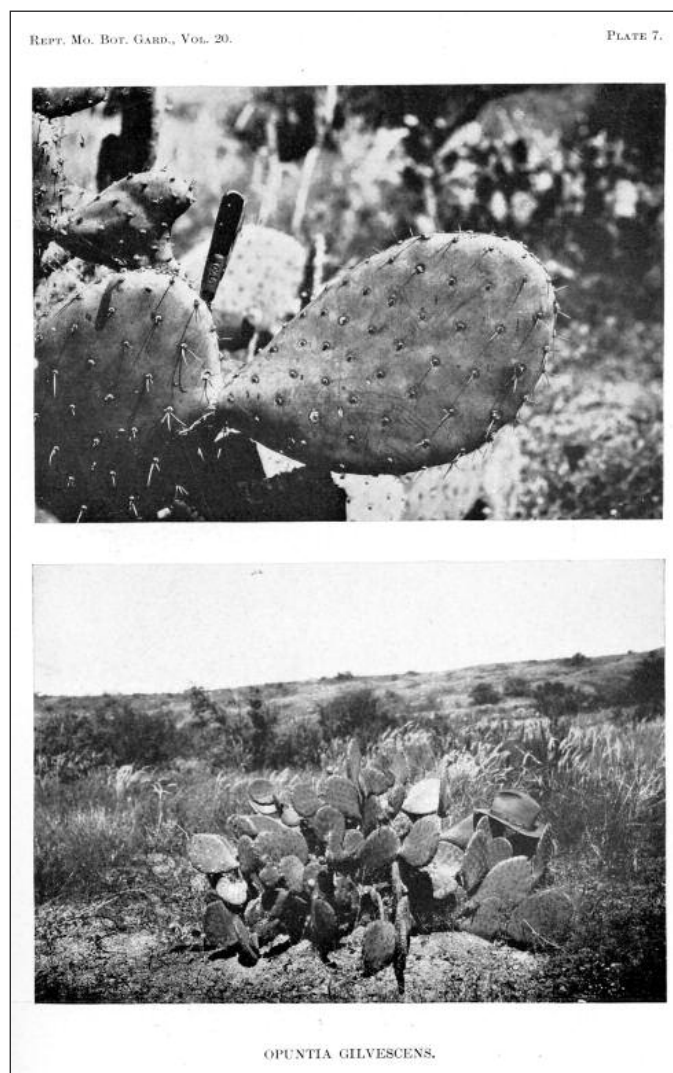


Fig.7 The illustrations of *O. gilvescens* that accompanied the first description by D. Griffiths in *Report of the Missouri Botanical Garden* 20: 87 (1909).

Typically, the longer of the two spines is approximately one inch long on young cladodes but may be nearly two inches on older cladodes. Some populations contain plants with longer spines up to two inches, even on newer cladodes, but this is not common.

Flowers are normally pure yellow or with a hint of red at the base of the inner tepals (Figure 5). Some populations in southeastern Utah and adjacent Arizona contain individuals with orange or pink flowers. The stigmas are green, pale-green, or even pale-yellow-green, and the style is creamy white. Kurtz (1948) reported that the pollen of *O. gilvescens* is about 130µm in diameter with up to 30 faces and about 15µm wider than the pollen of *O. phaeacantha*. Fruits often do not have a pronounced narrowing at the base and may

even have rounded bases. On some plants, fruits may be barrel-shaped or even subspherical (Figure 6). Fruits have more areoles than *O. phaeacantha*, and they are small with tight clumps of inconspicuous glochids. The ripe fruit is typically red to deep purplish, but may be pink or pink-green, and may even be mottled. The rind is usually light-green. Seeds are about three eighths of an inch in diameter with an additional 1/16 or 1/8 inch rim.

O. gilvescens is easily observed in the field as a plant constantly distinct from *O. phaeacantha*. Though *Opuntia* species are often plastic in their appearance, *O. gilvescens* has certain features (e.g., vertical branching; larger size; more woody structure; obovate or suborbicular cladodes; more areoles on the cladodes, ovaries and fruit; spines fewer and shorter; fruit typically without a pronounced narrowing/stipe at the base) almost always present. These characteristics collectively distinguish it from *O. phaeacantha*. *O. gilvescens* is hexaploid (Powell & Weedon, 2001; Ferguson, unpublished data).

O. gilvescens is an adaptable garden plant and forms from higher latitudes or altitudes are easily cold hardy to -15°F, especially if dry. The plants bloom easily and make an attractive, compact garden plant.

References

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