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gether under cultivation the two forms are indistinguishable, although quite different in habit in their natural habitat.

The type is No. 7632 D. G., prepared from a cultivated specimen April 23, 1908. The original material was collected at San Luis Potosi, Mexico, March 12, 1905. The description is a compilation of a partial description written in the type locality and a more complete one made in the field, of the cultivated, mature, three-year-old plant, supplemented by studies of the living material in the laboratory.—Plates 6, upper figure; 2, f. 9

***Opuntia gilvescens* sp. nov.**

Plant low, prostrate to slightly ascending with main branches on edge on ground and secondary ones short, erect or ascending from them, 7 to 8 dm. high and about 12 dm. in diameter, loosely branched and symmetrical with main branches usually 3 or 4, radiating in all directions; joints obovate, very pale, smooth, glossy, glaucous green changing to a light yellow-green not later than beginning of second year, commonly 20 by 25 cm. but mostly smaller and 12 to 16 mm. thick; areoles obovate, about 4 to 5 mm. in longest diameter, tawny-yellow, enlarging in age to subcircular and often becoming 6 or 7 mm. in diameter, 3 to 4.5 cm. apart; spicules always yellow, mostly about 4 mm. long, nearly or quite surrounding the darker tawny wool, but more abundant above, increasing in age to 9 or 10 mm. in length, mostly in more or less plainly distinguishable concentric circles, the new ones being inside of the old, which become dirty yellow, the marginal areoles completely and compactly filled with spicules after first year, marginal ones more loosely and unequally arranged; spines not numerous, at first translucent, soon becoming bleached white distally with dark bases, and with age changing through flesh-color to chalky white throughout, or the bases may remain somewhat tinted, tips always translucent, 1 or none to 4, mostly less than 2.5 cm. in length the first year, but sometimes even 4 cm., increasing in age to as many as 6 and somewhat longer also, erect, divergent, but sloping downward slightly in age, flattened, annular, seldom twisted; flowers yellow; fruit a light, glossy red with often a tinge of purple below, rind greenish and pulp lighter green, obovate, its areoles about 1.5 to 2 cm. apart, tawny, permanently yellow spicular; seed flattened, irregular, angular, 4 or 5 mm. in diameter, with a prominent, rounded, irregular roughened marginal callus about 1 mm. in width, narrowing toward the prominently notched hilum.

The species belongs to the *O. phaeacantha* group but differs from that species in its many variations in being a larger jointed plant, being lighter and more glossy in color, and decidedly different in the nature and number of its spines. It

inhabits sparingly the gravelly banks of arroyos in the open foothills region just below the steep mountain ascents.

Attention should be called here to the abnormality in some of the fruits shown in the photograph. Many are affected by a dipterous parasite which deposits its eggs in the young ovary and emerges in the imago stage the following April. In all fruits so injured the areoles, wool, and spicules are enormously developed, and in many cases the latter show traces of brown. As stated in a previous publication, the effect of this insect is to turn the young fruit into a vegetative organ, all of the seeds becoming aborted. It remains attached to the plant until the following season, and drops off after the insects have escaped. Engelmann has figured what appears to be this same dipterous larva effect in Pacific Ry. Report, 4, pl. 7, f. 3. 1856.

The type is No. 9619 D. G., collected in the foothills of the Santa Rita Mountains, Arizona, September 23, 1908. The description was drawn in the field beside the plant when the type specimens were collected.—Plates 7; 2, f. 5; 13, f. 6.

***Opuntia congesta* sp. nov.**

A low, spreading, very compactly branched, cylindrical-jointed species, 4 to 5 dm. high and 9 to 12 dm. in diameter, having such a congested habit of growth that there is invariably a great deal of dead stuff in the center; joints variable, 1 to 2 dm. long and 8 to 12 mm. in diameter, tubercular with a low, flat tubercle about 8 mm. long, the upper slope more abrupt than the lower, sharply defined by a slightly but sharply sunken dark green line, which although becoming less distinct is perfectly distinguishable for two or three years, bright, moderately dark green turning dull and darker to even glaucous and finally scaly, gray-black upon old trunks; leaves 3 to 5 mm. long, subulate, mucronate, circular in section, and reddish tinged toward tip; areoles broadly obovate, 3 to 5 mm. long and about 1 cm. apart, tawny when young, but turning through light gray to black in age but having a proliferating tissue in its upper portion which develops new wool even upon three or four-year-old wood, this new growth continuing tawny during the current year, often eclipsing the earlier blackened growth, thus elevating the areolar area slightly higher than its original flattened state, often subareolate even when young; spicules yellow in compact tuft in upper portion of areole, commonly less than 1 mm. long, increasing slightly but less than 2 mm. and more numerous with age, often scarcely visible until late in the first season; spines normally 1, sometimes 2 or even 3, nearly erect, when more than one the lower more or less recurved and in age in all cases always sloping downward, medium loosely