

long identical with spicules, except in size, but are more fugacious even than the spicules; fruit when mature purplish red throughout.

This species is more closely related to *Opuntia cyanella* Griffiths, from which it differs very decidedly in laxness, shape, and tint of flower, color, shape, and character of joints and nature of spination. The flowers are decidedly purplish when they first open at 8 A.M.; but purple coloration exists only toward the base of the petals on the inside of the flower. They turn more purple as the day advances. There are really in each petal when the flower first opens, a small marginal area of purplish red and a larger midrib area of orange-red tint. In sunlight, they are fully opened by ten o'clock, but in the shadow of the joints, the opening is retarded by an hour; or sometimes it may not be fully opened before noon, if shading is heavy.

The type is No. 9915 DG, collected at Loma Alta, near Brownsville, Texas, August 18, 1912. The description was drawn in the main from cultivated plants grown at Chico, California, July 25, 1914. The plants at this place blossomed profusely from cuttings the second year.

✓ *Opuntia zuniensis* sp. nov.

A low, prostrate, reclining species, 30 cm. high and sometimes 1 m. in diameter, the main branches most commonly resting on edge, or at times prostrate and the secondary ones erect from them, but usually only one or two joints in height; joints ovate obovate, pointed above and below, having a little bloom when young but losing this and becoming decidedly yellowish-green in age, 11-12 × 18-23 cm.; areoles obovate, commonly 6-7 mm. long on edges of joints, shorter and more nearly subcircular on sides, especially toward the base of joint, brown; spicules yellow, 3 mm. long, in a compact crescentic tuft in upper angle of areole, in age filling entire areole and becoming often a cm. in length; spines white but on apex of current year's growth their bases vary from light straw-colored to dark brown, but the general impression given by even these is brown-tawny and even they are more or less white distally, flattened, slightly twisted, seldom even faintly annular, porrect-spreading, usually about six on apex of current year's growth, the lower one about 2 cm. long and sloping down, the others stouter and varying from 2-5 cm., increasing in both length and numbers in age; flowers yellow, about 7 cm. in diameter when fully opened, having a little red at base of petals when first opened

which becomes more prominent later, the whole turning light orange-red as day advances; fruit a dull, light yellowish-red, rind greenish, pulp colorless, areoles small, 1.5 mm. in diameter, gray-tawny, spicules yellow, protruding from wool 1-2 mm.; fugacious spines 5-8 mm. long and two to six in number with a distinct tendency to whitening at complete maturity, and rarely accompanied by an occasional true white spine.

This belongs to the phaeacantha group and differs from previously described species in shape of joints, color of, as well as appendages, of the joints, and nature of flower, fruit and seed. The species was collected near Zuni, New Mexico, August 31, 1911, and the type bears my collection number 10345. It grows commonly in the open sage brush areas of the region, especially eastward and northward, and is probably the most common species of the region. The description applies to one form of the species, the other forms having spines decidedly brown, and the whole plant body, as well as the fruit, darker colored. The description is drawn in the main from plants propagated vegetatively at Chico, California, under field conditions, although it was also grown for a time in a sash house and in field at San Antonio, Texas.

✓ *Opuntia flexospina* sp. nov.

An erect to ascending bushy species, 50-100 cm. high and having a spread of about 2 m. when fully grown; joints broadly obovate, about 15-16 × 20-22 cm., yellowish green with little or no bloom, raised at areoles, smooth; areoles large, prominent, broadly obovate, 5-6 mm. long on edges of joints, slightly smaller on sides, enlarging in size to subcircular, and often 8-10 mm. in diameter, dark brown; spicules yellow with some brown mottling, scattered throughout the areole, but more numerous above and on edges of areole, giving general impression of being scattered, divergent, 5-7 mm. long, increasing in age to 10 mm. in length and filling entire areole; spines at first porrect but soon bent downward parallel with sides of joint, and commonly tightly recurved on edges, one or two, mostly one on sides and two or three on edges at one year of age, increasing in numbers in age to six to ten, and all sloping down to tightly recurved, 3.5 cm. long at one year old but becoming 5 cm. in age, yellow, with or without brighter brown bases, more or less flattened; flowers deep yellow with blushes of red, filaments greenish below and tinged with red above, style red below and fading upward, stigma dark green, eight- to ten-parted, bud pointed, dull, light reddish, with touches