

scar going to the base and occupying about a third the face, and open. This plant is readily mistaken for *K. fulvocanescens* but the broad and short calyx and lobes separate it. Aurum Nevada No. 6692, June 20 1893 at 7300° alt. on slopes. Also Muncy Nevada No. 6713, Vermilion Utah June 4, 1901, also Monroe Utah and Marysvale. The latter at 9000° alt.

***Krynitzkia fulvocanescens* var. *Idahoensis* n. var.** Racemes few flowered and loose. Pedicels 2-4" long. Calyx lobes linear, 4-5" long, apparently not opening when ripe. Nutlets finely and deeply petinate-rugose but not transversely rugose, dorsal groove not at all bordered by white ridge. Corolla not longer than the calyx. Inflorescence yellow. No. 6474, near Weiser Idaho April 28 1900. These short-flowered forms are so often found alongside of the normal ones that one must assume that there is a genetic connection between them. There are many forms in western Utah and Nevada that approach this form.

***Krynitzkia mixta* n. sp.** This may be one of the multitudinous forms of *K. barbiger*. 1-2° high. Whole plant strigose with slender very long and ascending white hairs. Base of calyx densely white-hairy and shaggy as well as sparsely setose with slender setæ from a small and pustulate base. Plants paniculately branched from the base, annual, erect. Spikes dense and scorpioid in age, the fruits contiguous, spreading. Flowers very narrow, with scarcely any limb, 1½" long. Fruiting calyx 4-6" long, with ovate base and short and spreading tips closely constricted below, linear, green above. Seeds usually 2, deltoid, with an acuminate tip, shining, 1" long, coarsely muricate, truncate below, scar deltoid, excavated, groove open to tip, attached half way up, forks of scar as long as the attachment in the groove. Mescal Mts. Arizona May 24 1890. This is the type. I also refer here material from the Needles Cal. May 3 1884. St. George Utah, No. 5106 April 26 1894, Silver Reef Utah May 3 1894, Hackberry Arizona April 25 1903, No. 3832 May 6 1884, Meadow Valley Wash Nevada April 28 1904. One nutlet is apparently firmly attached to the gynobase.

***Krynitzkia decipiens* n. sp. (Cryptanthe).** This seems to be intermediate between *dumetorum* and *angustifolia*, and closely approaches *intermedia*. Slender annual with filiform bractless spikes 3-8' long in twos or threes. Leaves linear, papillose, 1-2' long. Flowers not over 1" long and minute. It has the calyx of *K. oxycarya*, 1½-2" long, lobes filiform, green,

spreading at tip, erect, appressed, oblique. Nutlet 1, ovate-lanceolate, incurved, faintly papillose but more evident above, groove open at base, attached nearly to the top, 1" long, obtuse-angled. Pubescence appressed and short. The type is my material from Yucca Arizona May 14 1884. Other material is from Hackberry Arizona, Darwin Cal., Meadow Valley Wash Nevada.

Plagiobothrys humifusa n. sp. This may be an extreme form of *tenellus*. Annual, nearly prostrate, softly pubescent throughout. Radical leaves ovate, 6" long, nearly sessile. Stem leaves the same but sessile, 4-6" long. Proper stems very many and very short, ending in simple or geminate and slender spikes 3-4' long, all leafy-bracted and loosely flowered in fruit when the flowers are 6-9" apart below. Calyx nearly hemispherical, 2" long, open in fruit, lobes triangular and calyx cleft below the middle. Nutlets cruciform, incurved to a half circle, shining, faintly rugose, sparsely set with sharp papillæ, dorsal ridge evident, angles double and denticulate with sharp papillæ, otherwise as in *P. tenellus*. Plants 3-6' long. Chat California 5000° alt. June 18, 1897. The roots secrete the usual purple dye, but the stems and leaves do not.

Lupinus prunophilus n. sp. Habit of *L. Burkei*. Densely tufted, erect, stout and coarse, 2° high. Lower petioles often a foot long, upper often only an inch long. Stems and leaves sparsely pubescent with spreading hairs. Upper side of leaflets smooth. Leaflets about 7, 2-3' long, spatulate-ob lanceolate, strongly nerved, green. Stems simple. Spikes nearly sessile, very dense, about 6' long. Flowers purple, 6" long, very broad, keel not exerted; banner smooth. Calyx short-shaggy, spurred, on a slender and shaggy pedicel 6" long. Bracts linear-lanceolate, shaggy, 6-8" long, persistent. Pods about 18" long, 6" wide, 5-6-seeded, shortly-appressed-pubescent, fleshy, narrowly oblong, triangular-acute. Seeds 2½" wide, light-colored. This grows on dry mountain slopes Middle Temperate life zone along with *Amelanchier* and *Prunus demissa*.

Astragalus lutosus n. sp. White River Utah next the Colorado line, 5200° alt. May 25 1908. This grows on very poor soil in white shale in the barest places where there is very little soil. Perennial from a thick erect and fleshy root which at an inch or so beneath the surface puts out many slender and scaly stems 1-4' long. Flowers few, white, in a head which is nearly sessile in the axils. Banner white, 4" high, arched