

trichomes and are either distinctly tomentulose or at least conspicuously pustulate.

In any general floristic work, the author would have no hesitation in submerging the varieties recognized here and would use only the specific name for the assemblage—so close are the varieties and so numerous the intermediates. They seem to be geographic units and so are worthy of discrimination in a more technical treatment.

33. *C. cana* (A. Nels.) new comb. Plate 29, figs. 92–94.

*Oreocarya cana* A. Nels. Bot. Gaz. 34: 30. 1902.

*Krynitzkia sericea* Nutt., fide Rydb. Fl. Rocky Mountains, 723. 1917. This combination was neither published nor suggested by Nuttall since he never used the generic name *Krynitzkia*.

Very densely caespitose long-lived perennial; leaves narrowly oblanceolate, usually acute, clustered on the crowns of the caudices, 2–6 cm. long, densely and, to the naked eye, uniformly silky strigose, older leaves under the lens inconspicuously pustulate below and setose with setae that are scarcely differentiated from the strigose hairs, upper surface obscurely pustulate; inflorescence narrow, mainly restricted to the upper  $\frac{1}{2}$  of the stem, densely but rather weakly setose, foliar bracts inconspicuous; calyx rather finely setose, sepals in anthesis linear or linear-lanceolate, acute, 3 mm. long, in fruit 5.5–6 mm. long, exceeding the mature nutlets by 3–4 mm.; corolla white, tube about 3 mm. long, as long as the calyx lobes, crests at the base of the tube evident, fornices distinctly papillose, low, rounded, about 0.5 mm. high, probably yellow, limb about 6 mm. broad, tube and corolla lobes subequal, lobes united for about  $\frac{1}{4}$  their length; fruit usually unsymmetrical, tending to be lance-ovoid, only one nutlet usually maturing, style shorter than the mature nutlet; nutlets lanceolate, acute, 3–3.5 mm. long, margins in contact (when more than one develops), acute or obtuse, surfaces of nutlets dull, the dorsal densely muricate with elongated and sometimes confluent papillae, the ventral surfaces similar but papillae less elevated, scar open toward the base, rather narrowly triangular, no elevated margin present.

Distribution: Upper Sonoran Zone, central to southeastern

Wyoming, northeastern Colorado, and western Nebraska. Type: gravelly open hilltops, Ft. Laramie, Wyoming, *A. Nelson 8309*.

Specimens examined:

Nebraska: Ft. Robinson, June 1, 1890, *Bates* (N.Y.); War Bonnet, June 24, 1890, *Williams* (N.Y.); McColligan Canyon, Deuel Co., June 26, 1891, *Rydberg 256* (U.S., N.Y.); Sidney, May 23, 1922, *Nelson* (R.Mt.).

Wyoming: Birds Eye, June 25, 1910, *Nelson 9367* (R.Mt.); Pine Bluffs, June 27, 1889, *Bodin* (Minn.); Pine Bluffs, May 14, 1897, *Nelson 2876* (R.Mt., Calif., Field); Uva, July 10, 1894, *Nelson 389* (R.Mt.); Ft. Laramie, June 29, 1901, *Nelson 8309* (R.Mt., TYPE, Gray); Platte Hills, *Nuttall* (Phila.).

Colorado: Pawnee Buttes, Weld Co., June 17, 1919, *Osterhout 5902* (R.Mt., U.S., Gray, Osterh.); Tuttle, May 16, 1909, *Cary 276* (U.S.).

This is a most distinct species by virtue of its densely caespitose habit, its silky strigose indument, and muriculate nutlets. It has no near relatives with which it might be confused in the region where it grows.

**34. *C. propria*** (Nels. & Macbr.) new comb.

Plate 29, figs. 95–97.

*Krynitzkia fulvocanescens* var. *idahoensis* Jones, Contr. West. Bot. **13**: 6. 1910. (Type: *Jones* No. 6474, near Weiser, Idaho, April 28, 1900.)

*Oreocarya propria* Nels. & Macbr. Bot. Gaz. **62**: 145. 1916.

Densely caespitose, long-lived perennial; stems few to many from the branched, woody caudex, 15–25 cm. high, rather slender, sparsely and weakly setose, caudex densely clothed with the leaf-bases of previous years; leaves clustered on the crowns of the caudex, spatulate, obtuse, 4–8 cm. long, dorsal surface finely strigose and abundantly appressed-setulose with short pustulate bristles, ventral surface densely and finely strigose with a few pustulate hairs, petioles ciliate near the base with long white hairs; inflorescence narrow, continuous or nearly so, confined to the upper  $\frac{1}{2}$  or  $\frac{2}{3}$  of the stem, densely but rather weakly setose, foliar bracts not conspicuous; calyx densely and weakly setose

## EXPLANATION OF PLATE

## PLATE 29

Figs. 80-82. *C. Macounii*. Drawn from specimen collected by *Macoun*, at Moose Jaw, Saskatchewan.

Figs. 83-85. *C. sobolifera*. Drawn from type, *M. E. Jones*, Upper Marias Pass, Montana.

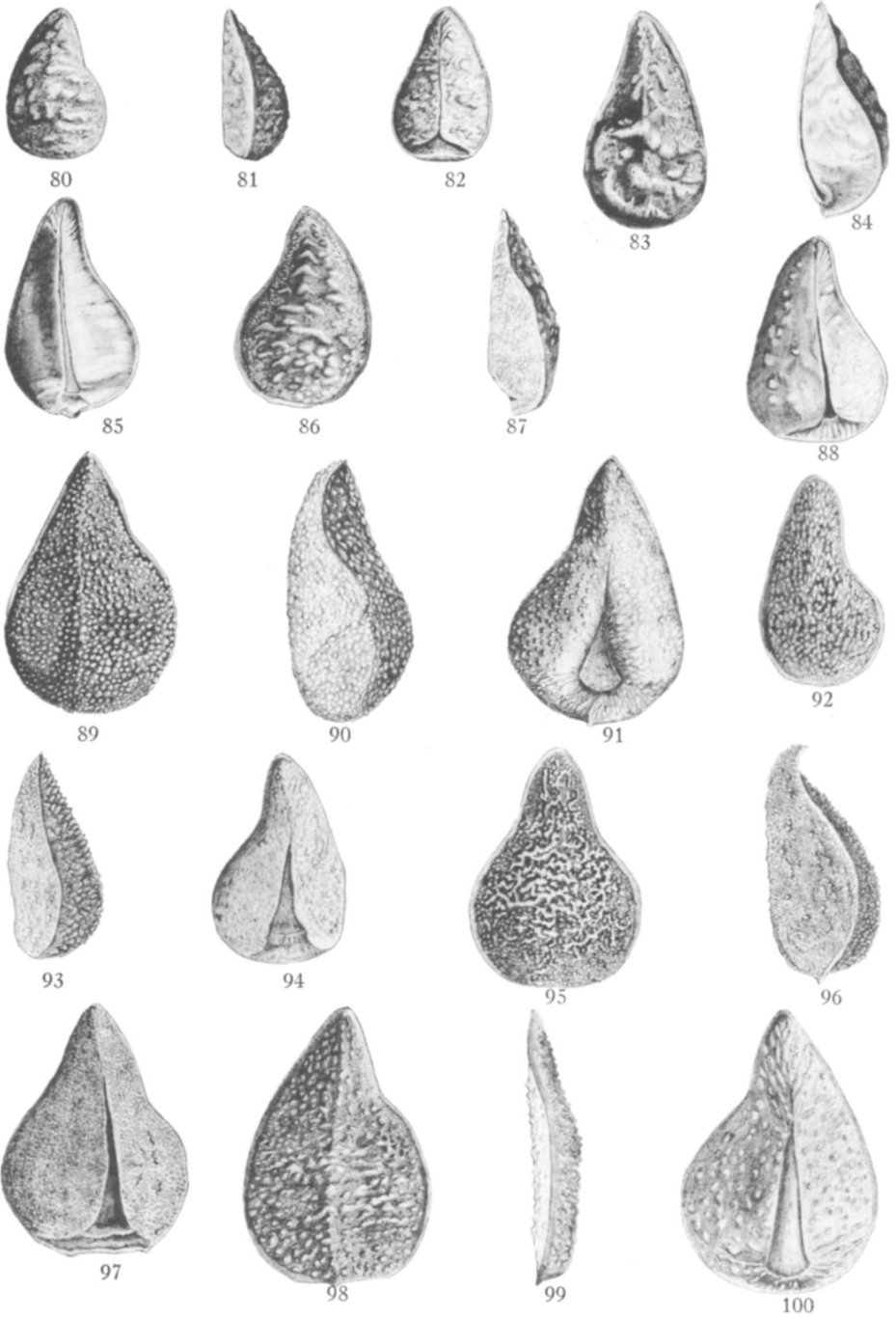
Figs. 86-88. *C. Bradburiana*.

Figs. 89-91. *C. nana* var. *Shantzii*. Drawn from type of *Oreocarya dolosa*, *C. P. Smith 1605*. The nutlets of *C. breviflora*, *C. fulvocanescens*, and *C. echinoides* are similar to those of *C. nana* var. *Shantzii*. The differences are noted in the descriptions.

Figs. 92-94. *C. cana*. Drawn from type, *A. Nelson 8309*.

Figs. 95-97. *C. propria*. Drawn from *Leiberg 2223*.

Figs. 98-100. *C. Jonesiana*. Drawn from type, *Jones*, San Rafael Swell, Utah.



PAYSON—SECTION OROCARYA OF CRYPTANTHA