

Leotype. H. Engelmann s.n., collected in Wyoming at Bridger Pass, 1856. GH. vide Payson.

Distribution: Southwestern Wyoming, northwestern Colorado, and northeastern Utah. Growing on heavy clay soils, 4,200 to 7,000 feet. Map No. 38. Late May to August.

The name *sericea* has always been a stumbling block in the way of any satisfactory treatment of this group of plants. Payson (1927) was faced with the problem of selecting a type from the collections available to Dr. Gray at the time he described *sericea*. The specimens that were considered to compete for the type of *sericea* were as follows:

- Sheet 1 contains four specimens:
- a. Bridger's Pass, 1856, H. Engelmann equals *O. argentea* Rydb.
 - b. Wasatch Mts., 1844, Fremont equals *O. humilis* Greene
 - c. Clover Mts., Nevada, 1868, Watson equals *O. humilis* Greene
 - d. Mountain Hot Springs, Yellowstone Park, 1885, Tweedy 816 equals *C. celosioides*
- Sheet 2 contains three specimens:
- a. Montana Terr., 1867 equals *C. celosioides*
 - b. Summit, California, 1871, Bolander equals *C. nubigena* Greene
 - c. Grass Valley, Utah, 1875, Ward 49 equals *C. abata* Johnst
- Sheet 3 contains two specimens at the present time and probably five (including fragments) in Gray's time:
- a. Southern Montana, 1880, Watson 287 equals *C. celosioides*
 - b. A specimen of *celosioides* without data equals *C. celosioides*
 - c. Fragment, Baker County, Oregon, 1879, Cusick equals *C. subretusa* Johnst
 - d. Fragment from southern Wyoming equals *C. caespitosa*
 - e. Fragment from Scotts Bluff, 1858 equals *C. cana*

The specimens that were considered to compete for the type of *sericea* were then *O. argentea*, *humilis*, *C. celosioides*, *abata*, *nubigena*, *subretusa*, *caespitosa*, and *cana*. By a process of elimination, a type for *sericea* was selected—that from Bridger's Pass, collected by Engelmann—as this was the only specimen that fit the published description, the maturity of the plant Dr. Gray had in mind, and the geographical range.

Cryptantha sericea is similar in appearance to *C. celosioides* but can be recognized at once by the silky-strigose ventral surface of the leaves, which lack pustulate hairs and the differently marked nutlets.

39. *Cryptantha aperta* (Eastw.) Payson

Cryptantha aperta (Eastw.) Payson, Ann. Mo. Bot. Gard. 14: 295, 1927.
Oreocarya aperta Eastw. Bull. Torrey Bot. Club 30: 241, 1903.

Caespitose perennial, 1.2-2 dm tall; stems several, slender, arising from a woody root, 0.3-0.5 dm long, strigose and conspicuously white setose-hispid; leaves

spatulate to oblanceolate, somewhat folded, and with the midrib strongly developed, obtuse, 2-3.5 cm long, 0.3-0.6 cm wide, both surfaces setose-hispid and pustulate, with fine appressed hairs beneath the bristles; inflorescence open, branched from near the base, with simple or two-forked spikes, 1-1.3 dm long, the individual spikes becoming 4-7 cm long, foliar bracts inconspicuous; calyx segments linear-lanceolate, in anthesis 2.8-3 mm long, in fruit becoming 7-9 mm long, densely setose; corolla white, the tube 2.6-3 mm long, crests at base of tube conspicuous, fornicies yellow, truncate, distinctly papillose, about 0.5 mm long, limb 4-6 mm wide; style exceeding mature fruit 1.5-2 mm; nutlets ovate-lanceolate, 2-2.6 mm long, 1.4-1.6 mm wide, usually all four maturing, margins acute, in contact, dorsal surface indistinctly carinate, tuberculate, somewhat rugulose, and indistinctly mucronate, ventral surface indistinctly roughened, scar closed, and without an elevated margin. Collections: 1 (0); representative: A. Eastwood s.n. (CAS).

Holotype: A. Eastwood s.n., collected in Mesa County, Colorado, at Grand Junction, 27 June 1892, CAS. Photograph at BRV.

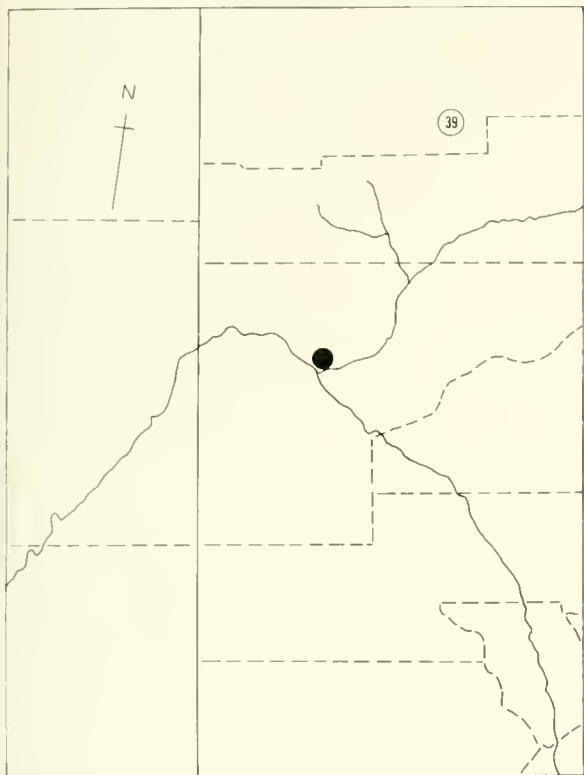
Distribution: Known only from the type locality, Mesa County, Colorado. Probably growing on clay soil characteristic of the region, 4,000 to 5,500 feet. Map No. 39. May to July.

This species still remains obscure because of the lack of herbarium material. In observing the type specimen it appears that the plant is quite distinct, with its broad inflorescence and the ornamentation on the nutlet. It is perhaps closely related to *C. thyrsoiflora*, but is entirely distinct.

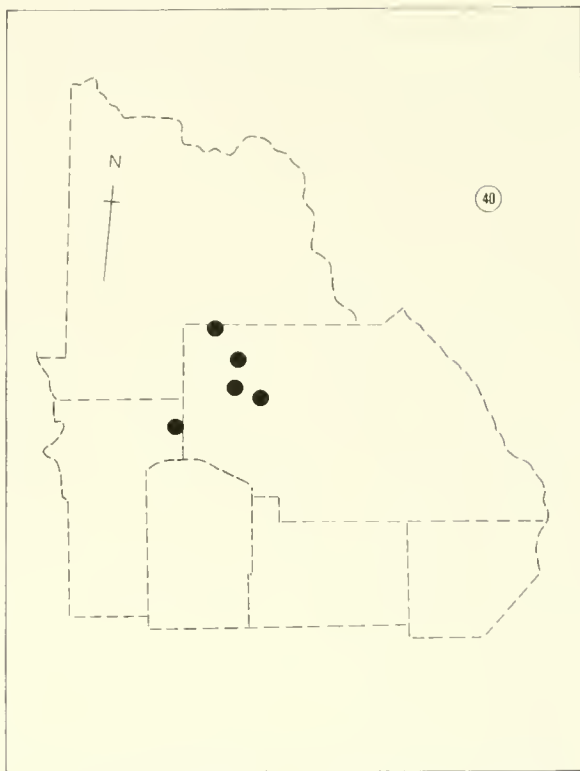
40. *Cryptantha weberi* Johnst.

Cryptantha weberi Johnst. Journ. Arn. Arb. 33: 72, 1952.

Caespitose perennials, 1-1.8 dm tall; stems numerous, erect, 0.2-0.5 dm long, strigose, and weakly setose; leaves numerous, narrowly oblanceolate, 3-8 cm long, 0.3-0.7 cm wide, densely hispid-villous, with pustules on both surfaces; inflorescence cylindrical, narrow, 0.4-1 dm long, hispid-villous; foliar bracts evident on lower part of inflorescence; calyx segments lanceolate, in anthesis 3-4 mm long, in fruit becoming 5-6 mm long, hispid-villous; corolla white, the tube 3-3.2 mm long, crests at base of tube conspicuous, fornicies yellow, emarginate, somewhat papillose, about 0.5 mm long; style exceeding mature fruit 1.5-1.8 mm; nutlets ovate, 2-2.3 mm long, 1.3-1.8 mm wide, all four usually maturing, margins acute or narrowly winged, dorsal surface tuberculate, and with short irregular transverse ridges, ventral surface nearly smooth, scar open, triangular or narrowly cuneate, elevated margin lacking. Collections: 11 (v); representative: W. A. Weber 5778



Map No. 39. Mesa County, Colorado. Range of *C. aperta* (Eastw.) Payson.



Map No. 40. Central Colorado, Saguache and Hinsdale Counties. Range of *C. weberi* Johnston.

(COLO, GH, LL); J. H. Langenheim 4047 (RM); H. Gentry 2405 (ARIZ); J. Barrell 92-55 (CS); S. A. Spongberg 62-55 (CS); W. A. Weber 9411 (UT); L. C. Higgins 2256, 2268, 2269, 3719, 3727 (BRY, WTSU).

Holotype: W. A. Weber 5778, collected in Saguache County, Colorado, along road to Stone Cellar Ranger Station and Saguache Park, near junction of main highway, 4 miles west of Cochetopa Pass, volcanic ash deposit, 9,700 feet, 28 July 1950, GH. Photograph at BRY. Isotypes at COLO, LL.

Distribution: Saguache and Hinsdale counties, Colorado. Growing on volcanic ash deposits, 9,000 to 10,500 feet. Map No. 40. July and August.

This delicate little *Cryptantha* from the high mountains of Colorado is one of the most distinct in the entire subgenus and is not confused with any other species because of the narrow inflorescence, pubescence, and the very distinctive nutlets. It keys out in Payson's monograph to *C. rugulosa*, but is only remotely related to that species.

41. *Cryptantha rugulosa* (Payson) Payson

Cryptantha rugulosa (Payson) Payson, Ann. Mo. Bot. Gard. 14:295. 1927.

Oreocarya rugulosa Payson, Univ. Wyo. Publ. Bot. 1:166. 1926.

Biennial or short-lived perennial, 1.2-3 dm tall;

stems slender, 1-several, 0.8-1.6 dm long, spreading setose-hispid; leaves oblanceolate to spatulate, obtuse to acute, strigose and conspicuously setose-hispid, pustulate on both surfaces; inflorescence 0.2-2 dm long, hispid; foliar bracts inconspicuous; calyx segments linear-lanceolate, in anthesis 4-5 mm long, in fruit becoming 7-9 mm long, strigose and spreading hirsute; corolla white, the tube 3-4 mm long, crests at base of tube conspicuous, fornice rounded, distinctly papillose, about 0.5 mm long, limb 5-7 mm wide; style exceeding mature fruit 1-1.5 mm; nutlets lanceolate, 2.8-3.2 mm long, 1.3-1.7 mm wide, all four usually maturing, margins in contact, acute, dorsal surface with short low ridges, also somewhat tuberculate, ventral surface smooth or nearly so, scar open, subulate, without an elevated margin. Collections: 30 (vii); representative: B. Maguire 22021 (ARIZ, UTC); Maguire and Becraft 2729 (RM, UTC); W. P. Cottom 9569 (UT); B. F. Harrison 11658 (BRY); M. E. Jones s.n. (POM, RM); L. C. Higgins 1463, 1474, 1614, 1621, 1720 (BRY).

Holotype: M. E. Jones s.n., collected in Juab County, Utah, at Fish Springs, 4 June 1891, RM. Photograph at BRY. Isotypes at UC, POM.

Distribution: Central Utah to northeastern Nevada. Growing in clay or gravelly loam soils, 4,500 to 6,500 feet. Map No. 41. May to July.

Cryptantha rugulosa is closely related to *C. spicu-*