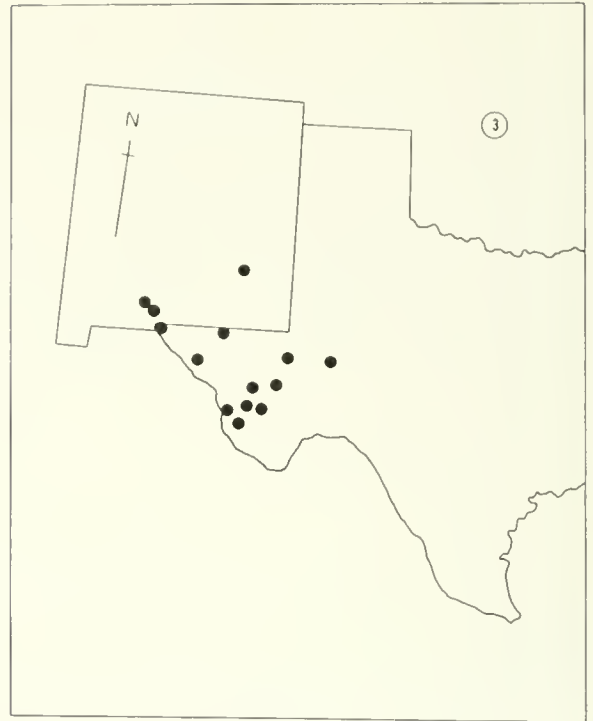




Map No. 2. Western Texas and northern Mexico. Range of *C. palmeri* (Gray) Payson.



Map No. 3. Parts of Texas and New Mexico. Range of *C. oblata* (Jones) Payson.

Johnston 22003 (LL); L. C. Higgins 3151 (BRY, WTSU).

Holotype: O. B. Metcalfe 1576, collected in Sierra County, New Mexico, on limestone hills at Berendo Creek, 12 May 1905, GH. Isotypes at POM, US.

Distribution: New Mexico in Debaca, Otero, and Sierra Counties, south into Culberson County, Texas. Growing on limestone soil, 4,000 to 7,500 feet. Map No. 4, April to June.

This species has been confused in the past with *C. oblata*, but differs from it in the larger corollas which are strongly heterostyled, the more compact inflorescence, and the nutlets which are only finely rugulose or tuberculate.

More collections of this taxon are badly needed in order to determine its exact geographical range.

5. *Cryptantha crassipes* Johnst.

Cryptantha crassipes Johnst. Journ. Arn. Arb. 20:397, 1939.

Plants perennial, 1.5-2.4 dm tall, stems 1-several, 1.2-1.9 dm long, setose; leaves linear-lanceolate, obtuse to acute, mostly basal, reduced upward, 3-6 cm long, 0.2-0.6 cm wide, densely white strigose, also setose-pustulate on the dorsal surface; inflorescence capitate, 0.2-0.8 dm long, white strigose, floral bracts inconspicuous; calyx segments linear-lanceolate, in anthesis 7-9 mm long, in fruit becoming 9-11 mm long, setose; corolla white, the tube 8-9 mm long, crests at base of tube lacking, fornicees yellow,

rounded, about 1 mm long, limb 9-11 mm wide; style exceeding mature fruit 4-7 mm; nutlets ovate or triangular-ovate, 3.3-3.8 mm long, 2.5-3 mm wide, dorsal surface finely rugulose, ventral surface smooth or only slightly uneven, margin acute or narrowly winged, scar closed, and without an elevated margin. Collections: 15 (iii); representative: V. L. Cory 18613 (GH); D. S. Correll and I. M. Johnston 21934 (GH, LL); D. S. Correll and R. C. Rollins 23604 (LI); V. L. Cory 31585 (GH); L. C. Higgins 2767, 2940 (BRY, WTSU).

Holotype: V. L. Cory 18613, collected in Brewster County, Texas, 6.5 miles east of Agua Fria Springs, 13 April 1936, GH. Photograph at BRY.

Distribution: Brewster County, Texas, in the Big Bend region. Growing on white limestone which is shaly or clayey, 1,500 to 4,500 feet. Map No. 5. Late March to early June.

This distinctive plant is closely related to *C. palmeri* and *C. paysonii*. From the former it can be distinguished by the compact capitate inflorescence, the thicker more woody caudex, and the shorter corolla tube. From *C. paysonii*, it differs in the shorter corolla tube, the monomorphic flowers, the nutlets which are more compressed or flattened, and the very woody caudex.

6. *Cryptantha confertiflora* (Greene) Payson

Cryptantha confertiflora (Greene) Payson, Ann. Mo. Bot. Gard. 14:256, 1927.

Krynitzkia leucophaea var. *alata* Jones, Proc. Calif. Acad. Sci. II, 5:710, 1895. (Type: Silver Reef, Utah, on sandstone cliffs, 4,500 feet, 3 May 1894, M. E. Jones 5144.)

Oreocarya confertiflora Greene, Pitt. 3:112, 1896.
Oreocarya lutea Greene, Muhlenbergia 2:240, 1906. Name only. Fedde, Rep. Spec. Nov. 19:72, 1923. Description. (Type: California, Inyo County, White Mountains, 9 May 1906, Heller 8211.)

Oreocarya alata (Jones) A. Nels. Coulter and Nelson, Man. Cent. Rocky Mts. 417, 1909; Rydb. Fl. Rocky Mts. 725, 1917.

Perennial herbs, 1.7-4.3 dm tall; stems 1-7, slender, 1.5-2.5 dm long, tomentose at the base, strigose and setose upward; leaves linear to oblanceolate, 3-12 cm long 0.2-1.6 cm wide, acute, dorsal surface densely strigose and appressed setose with pustulate bases, ventral surface uniformly strigose and with few or no pustules; inflorescence subcapitate, 0.3-2 dm long, strigose and with twisted setose hairs, bracts inconspicuous; calyx segments linear-lanceolate, in anthesis 6-8 mm long, in fruit becoming 10-14 mm long, strigose and spreading setose; corolla yellow, the tube 9-13 mm long, fornicies broad, emarginate, about 1 mm long, crests at base of tube evident or sometimes lacking, limb 8-10 mm wide; plants distinctly heterostyled; nutlets triangular or ovate, 3.5-4 mm long, 2.5-3 mm wide, usually all four maturing, margins narrowly winged, in contact, surfaces smooth and glossy, scar straight, closed, and lacking an elevated margin. Collections: 117 (vi); representative: I. W. Clokey 7659 (ARIZ, LL, ND, ORE, UTC); S. B. and W. F. Parish 1316 (ND-G, US); F. W. Gould 1550 (BRY, UT, UTC); P. Train s.n. (ARIZ, ORE); L. C.

Higgins 1365, 1475, 1771 (BRY).
 Holotype: S. B. Parish 1316, collected in San Bernardino County, California, at Cushenberry Springs on the north side of the San Bernardino Mountains, 1882, ND-G. Photograph at BRY. Isotype at US.

Distribution: Southwestern Utah, northern Arizona, southern Nevada, and west to southern and western California. Growing in a wide variety of soils, 2,000 to 8,500 feet. Map No. 6. April to July.

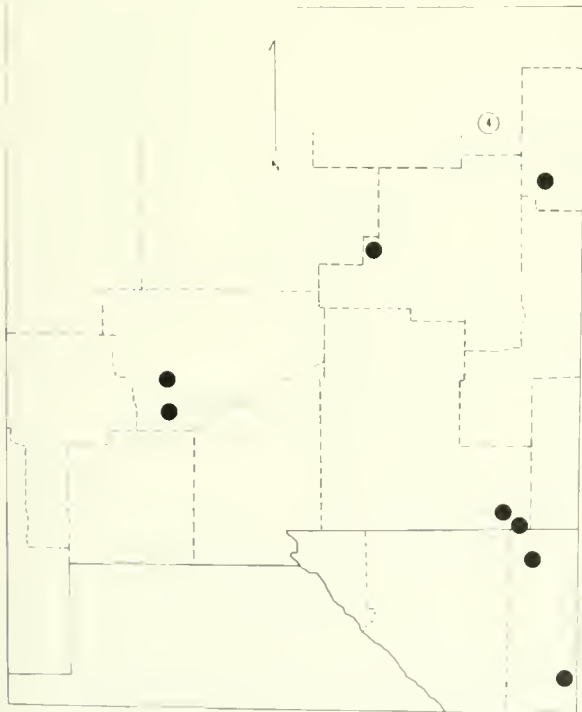
This distinctive, yellow-flowered species is one of the largest of the perennial species of *Cryptantha*, and is not common, but covers a wide distributional range. This species may be distinguished from its closest relative, *C. flava*, by the broader more ovate nutlets and the longer stems with a subcapitate inflorescence.

Brand legally published the nomen nudum *Oreocarya lutea* Greene. He did this on the basis that the stamens were in a different position in the corolla tube. However, this taxonomic criteria is of no value in the present species because the corolla is very dimorphic in regards to this character.

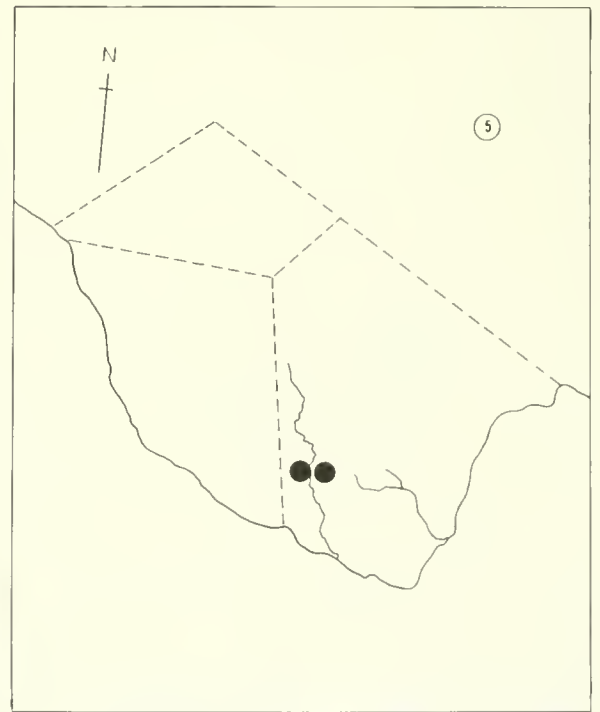
Jones described a narrow-leaved form from southern Utah as a new variety, but it is not worthy of any subspecific rank.

7. *Cryptantha flava* (A. Nels.) Payson

Cryptantha flava (A. Nels.) Payson, Ann. Mo. Bot. Gard. 14:259, 1927.



Map No. 4 Northwest Texas and southern New Mexico. Range of *C. paysonii* (Macbride) Johnston.



Map No. 5. Brewster Co., Texas. Range of *C. crassipes* Johnston.

Oreocarya flava A. Nels. Bull. Torrey Bot. Club 25:202. 1898.

Oreocarya lutescens Greene, Pitt. 4:93. 1899. (Type: On hills about Aztec, New Mexico, 25 April 1899, C. F. Baker.)

Cryptantha confertiflora var. *flava* Brand, Pflanzenreich (Heft. 97) 4, fam. 252:90. 1931.

Cryptantha confertiflora var. *lutescens* Brand, Pflanzenreich (Heft. 97) 4, fam. 252:90. 1931.

Perennial, 1.3-4 dm tall; stems many, from a multiple caudex, 0.8-2.6 dm long, densely long white-hairy at the base, becoming setose and strigose upward; leaves narrowly oblanceolate to nearly linear, acute, 2-9 cm long, 0.3-0.8 cm wide, dorsal surface strigose and appressed setose with pustulate hairs, ventral surface almost uniformly strigose, and with the pustules less conspicuous; inflorescence narrow to somewhat open, 0.5-2.5 dm long, conspicuously yellow setose, the floral bracts inconspicuous; calyx segments linear, in anthesis 8-10 mm long, in fruit becoming 9-12 mm long, densely setose, with yellowish hairs, pedicels 3-5 mm long in fruit; corolla yellow, the tube 9-12 mm long, crests at base of tube absent or nearly so, fornicies yellow, truncate, emarginate, 1-1.5 mm long, limb 8-10 mm broad; style exceeding mature fruit 3-7 mm (heterostyled); nutlets lanceolate, 3.4-4 mm long, 1.9-2.2 mm wide, 1-2 usually maturing, margins acute, in contact when more than 1 nutlet matures, both surfaces of nutlet smooth and glossy, scar straight, closed, elevated margin lacking. Collections: 193 (xi); representative:

C. F. Baker 562 (ND-G); A. and R. Nelson 785 (ARIZ. ORE); W. A. Weber 3838 (ARIZ. COLO); W. P. Cottam 2050 (BRY); B. Maguire 18302 (UTC); L. C. Higgins 527, 998, 1057, 1073, 1082, 1105 (BRY).

Holotype: A. Nelson 3074, collected in Sweetwater County, Wyoming at Point of Rocks, 1 June 1897, RM.

Distribution: Southern Wyoming, south through western Colorado and eastern Utah to northern New Mexico and Arizona. Usually found growing in sandy soil, 4,000 to 7,500 feet. Map No. 7. April to August.

This yellow-flowered species is closely related to *C. confertiflora*, but may be separated from that species by the narrowly lanceolate nutlets and the longer thyrsoid inflorescence.

8. *Cryptantha capitata* (Eastw.) Johnst.

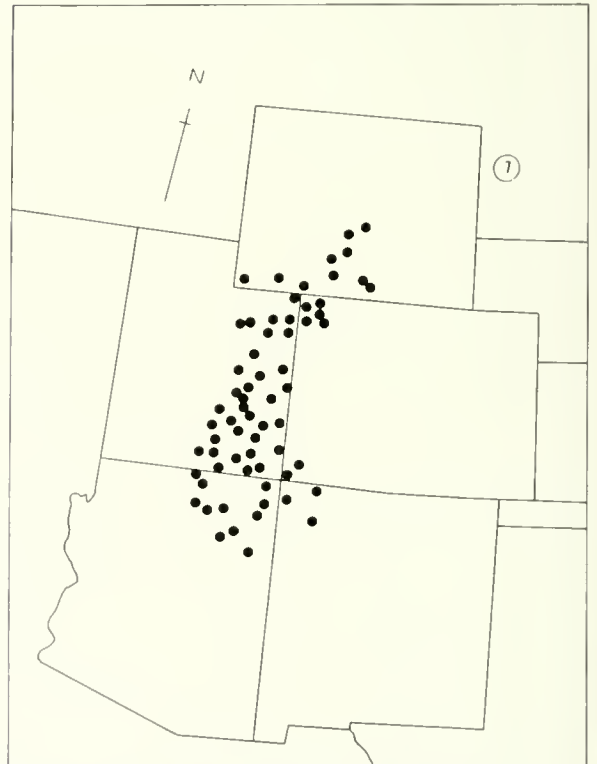
Cryptantha capitata (Eastw.) Johnst. Journ. Arn. Arb. 21:66. 1940.

Oreocarya capitata Eastw. Leaflets West. Bot. 1:9. 1937.

Perennial, 1.5-2.7 dm tall; stems weak, 1-several, 1.2-2.4 dm long, appressed setose; leaves linear, or very narrowly oblanceolate, 3-8 cm long, 0.3-0.5 cm wide, dorsal surface appressed setose-pustulate, ventral surface uniformly strigose and without pustules; inflorescence capitate, or with one or two glomerules below the terminal cluster, 0.1-0.4 dm long, spreading white-setose; calyx segments linear-lanceolate, 7-9



Map No. 6. Parts of western United States. Range of *C. confertiflora* (Greene) Payson



Map No. 7. Parts of western United States. Range of *C. flava* (A. Nels.) Payson.