Macbride & Payson 689 (G). UTAH: Cisco, 1890, *Jones* (G, UC); Price, 1895, *Stokes* (UC); Green River, 1890, *Jones* (UC). NEW MEXICO: Ft. Wingah, *Mathews 40* (G); Gila River bottom near Cliff, 1350 m. alt., *Metcalfe 52* (G, UC); Santa Fe, *Fendler 640* (G); Hueco Mts., *Thurber 61* (G); Albuquerque, *Jones 3709* (UC); mesa west of Organ Mts., 1200 m. alt., 1905, *Wooton* (G, UC); Silver City, *Eastwood 8401* (G). ARIZONA: Camp Lowell, 1883, *Pringle* (UC); Chino Valley, *Tuomey 240a* (UC); Clifton, *Davidson 501a* (UC); Aztec Ruins, Little Colorado, 1905, *Purpus* (UC); Verde Mesa, *Smart 141* (G); Douglas, 1200 m. alt., *Goodding 2273* (G, UC); Tucson, 1907, *Loyd* (G); Bernardino, 1902, *Orcutt* (UC); without locality, 1882, *Pringle* (UC). TEXAS: vicinity of permanent camp on Rio Pecos, April 6–7, 1856, *Pope Exped.* (G, ISOTYPE?); abundant on sandy hills northeast of El Paso, *Hanson 402* (G, NY); western Texas, March 9th, *Wright* (G). CHIHUAHUA: sandy soil, Juarez, 1905, *Purpus* (UC); San Diego, 1800 m. alt., *Hartman 612* (G, UC).

Cryptantha crassisepala is a very interesting and readily recognized species most related to *C. minima*. Although it usually produces four nutlets some forms of it regularly mature only two or three. It is one of these forms, indistinguishable in other respects, that was made the type of *C. dicarpa*. The consimilar nutlets of *C. crassisepala* and *C. minima* are rather thick for their breadth. In this respect, as well as in general contour, they strikingly simulate the nutlets of *C. albida*, a species not closely related. The only material suggestive of a condition intermediate between *C. minima* and *C. crassisepala* is Eastwood's collection from Grand Junction. In that collection nutlets typical of *C. minima* are associated with the naked inflorescence and habit of *C. crassisepala*.

Ser. VII. BARBIGERAE. Nutlets 1–4, verrucose or muricate, lanceolate to ovate-lanceolate, dorsally convex, laterally rounded or obtuse, homomorphous with the abaxial one always developing; style reaching only to ⅓ height of nutlets or in varying degrees longer, sometimes even somewhat surpassing them.

Nutlets normally solitary or rarely 2; style reaching 1/3–1/2 height of nutlets.....25. *C. decipiens.*
Nutlets normally 4; style reaching 2/3 height of nutlets or beyond.
  Spike solitary; style evidently surpassing nutlets.....26. *C. patula.*
  Spike geminate or ternate; style almost always shorter than nutlets.
    Hairs arming calyx-lobes very coarse, subobese; plant usually with an erect central axis; insular endemic....27. *C. foliosa.*
    Hairs arming calyx-lobes slender, not conspicuously thickened; plant irregularly branched.
      Corolla conspicuous; hirsute plants almost confined to coastal drainage of California.....28. *C. intermedia.*
      Corolla inconspicuous; plants of the Great Basin and Californian deserts.
        Plant spreading hirsute.....29. *C. barbigera.*

        Plant with appressed hairs.
          Nutlets verrucose or verrucose-muriculate.....30. *C. nevadensis*
          Nutlets spinular-muricate.....31. *C. scoparia.*

25. **C. decipiens** (Jones) Heller. Loosely branched herb 1–4 dm. high, slender, strigose and frequently short-hispid; leaves rather few, linear, obtuse, 1–3 cm. long, 1–3(–4) mm. broad, strigose and sometimes hispid, minutely pustulate; spikes geminate or rarely ternate or solitary, slender, becoming loosely flowered or congested, 4–10 cm. long, naked; corolla inconspicuous to conspicuous, 0.8–3.5 mm. broad; fruiting calyces ovate to ovate-oblong, strictly ascending, asymmetrical, 2.5–7(–9) mm. long, deciduous, sessile; mature calyx-lobes lance-linear, decidedly connivent above with the tips frequently spreading or even recurving, midrib thickened and usually evidently hirsute, margins strigose, abaxial lobe evidently the longest and most hirsute; ovules 4; nutlets 1 or rarely 2, next the abaxial calyx-lobe, ovate-lanceolate or occasionally narrowly ovate, 1.5–2.4 mm. long, usually granulate or muriculate-granulate, muricate-papillate or low-tuberculate, usually brownish, back convex, sides rounded, groove open or closed but always dilated below to form a definite areola; gynobase short, ⅓–½ height of nutlet; style much surpassed by nutlet, ½–⅔ the height of nutlet.—Muhlenbergia viii. 48 (1912).

Var. **genuina.** Corolla inconspicuous, less than 1 mm. broad.—*Krynitzkia decipiens* Jones, Contr. W. Bot. xii. 6 (1910). *C. decipiens* Heller, l. c.

Southern Nevada, western Arizona and Southern California.

NEVADA: Logan, *Kennedy 1838* (G, UC); Rhyolite, 1072 m. alt., *Heller 9632* (G). ARIZONA: Hot Springs, 1892, *Toumey* (UC). CALIFORNIA: Kernville, *Brandegee* (UC); sandy places near Palm Springs, 120 m. alt., *Spencer 2072* (G); desert sand, mouth of Tahquitz Canyon, 210 m. alt., *Spencer 1522* (G); Whitewater, 300 m. alt., *Jones* (UC); without locality, *Palmer 150* (G).

Var. **corollata**, var. nov., a varietate genuina differt corolla conspicua 2–3.5 mm. lata.

Extreme western margin of the Mohave Desert and the adjacent coastal slopes.

CALIFORNIA: Fort Tejon, *Xantus 85* (G); Sespe Creek near Ten Sycamore Flat, *Abrams & McGregor 173* (G); Matilija Canyon, Ojai Valley, 1896, *Hubby 20* (G); towards foothills, Ojai Valley, 1896, *Hubby 21* (G, TYPE); Roble Canyon, San Rafael Mts., 1020 m. alt., *Hall 7408* (G, UC); Santa Inez Mts., 1888, *Brandegee* (UC); Huron, Fresno Co., *Brandegee* (UC); without locality, *Brandegee* (UC).

This species is probably most related to *C. intermedia* and *C. nevadensis* and has been somewhat confused with them. It differs, how-

ever, in having a very short style and gynobase and normally but one or rarely two nutlets.

26. **C. patula** Greene. Sparsely and loosely branched herb 5–15(–30) cm. high; stems strigose and sparsely short-hispid; leaves linear or lance-linear, 1–5 cm. long, 1–3 mm. broad, acutish, appressed-hispid, minutely pustulate; spikes solitary, with a few leafy bracts towards the base; corolla medium-sized, tube ca. 2 mm. long, limb 1.5–3 mm. broad, lobes short-oblong, ascending, ca. 1 mm. long, throat funnelform, appendages hemispherical; fruiting calyces ovate-oblong, 5–6 mm. long, obscurely biserial, subsessile, asymmetrical, base broadly conical or rounded; mature calyx-lobes lance-linear, connivent above with the herbaceous tips spreading, margins shortly white-villous, midrib thickened and densely tawny-hispid, abaxial lobe evidently the longest; nutlets 4, homomorphous, ca. 1.9 mm. long, oblong-ovate, acute, finely tessellate-granulate, tuberculate or muricate, base somewhat truncate, back convex, groove closed or nearly so and divaricately forked at base, at times open at the fork to form a small triangular areola; gynobase subulate, almost as long as the nutlets; style evidently surpassing nutlets.—Pittonia i. 265 (March 1889). *C. Pondii* Greene, l. c. 291 (April 1889).

Middle western Lower California and adjacent islands.

Lower California: San Bartolomé, 1889, *Pond* (G, isotype of *C. Pondii*); San Benito Island, 1897, *Brandegee* (G, UC).

Although probably most related to *C. intermedia* this species is readily separated by its solitary spikes and extreme southern range. *Cryptantha Pondii* is clearly a synonym. Although Greene described it as having "smooth and shiny" nutlets and ternate or quadrinate spikes the isotype sent Gray has granulate and tuberculate nutlets and solitary spikes as described above.

27. **C. foliosa** Greene. A stiffly erect divaricately branched herb 6–20 cm. high; stems solitary, straight, usually forming a conspicuous central axis, short-hispid below but becoming somewhat strigose above, branches well developed, widely spreading; leaves lanceolate to broadly linear, obtuse or rarely acutish, 2–6 cm. long, 2–5(–7) mm. broad, appressed-hispid, abundantly and minutely pustulate; spikes dense, 1–4 cm. long, geminate or ternate, naked; corolla evident, limb 2–3 mm. broad; fruiting calyces ovate-oblong, stiff, 5–7 mm. long, strongly biseriate, subsessile, subpersistent, base roughly conical; mature calyx-lobes lance-linear, towards the tips herbaceous and somewhat spreading, towards base indurated, thickened midrib armed with short

excessively coarse almost inflated pungent tawny hairs, margin strigose; nutlets 4, homomorphous, narrowly ovate, acute, ca. 1.5 mm. long, brownish and somewhat mottled, finely tessellate-granulate, tuberculate or muricate, back convex, edges obtusely angled, base rounded, groove narrowly dilated towards base where divaricately forked and closed; gynobase narrow, ca. 0.8 mm. long, ca. ⅔ height of nutlets; style reaching tip of nutlets.—Pittonia i. 113 (1887). *Krynitzkia foliosa* Greene, Bull. Calif. Acad. Sci. i. 205 (1885).

Endemic to Guadalupe Island, off the west coast of Lower California.

Lower California: Guadalupe Island, *Palmer 68, 842* and *877* (G), *Anthony 238* (G, UC), *Greene* in 1885 (G, UC, isotypes), *Townsend* (UC), *Brandegee* in 1897 (UC).

Readily recognized because of its peculiar habit of branching, congested spikes, coarsely armed calyx-lobes and small nutlets.

28. **C. intermedia** (Gray) Greene. Erectly branched commonly stiff and very hirsute herb 1.5–5 dm. high; stems several or solitary, erect, commonly hirsute but frequently more or less strigose; leaves lanceolate to linear or rarely somewhat oblanceolate, acute to obtuse, 2–6(–7.5) cm. long, 1–5(–7) mm. broad, hirsute or strigose, usually inconspicuously pustulate; spikes naked, geminate to quinate but commonly ternate, 5–15 cm. long, usually stiff; corolla conspicuous, 2–8 but commonly about 5 mm. broad; fruiting calyces ovate-oblong, 2–7 but commonly 4–6 mm. long, ascending or strict, deciduous, slightly asymmetrical, lowermost not conspicuously biserial, pedicels ca. 0.5 mm. long; mature calyx-lobes lance-linear, connivent above with tips usually spreading or recurving, margin appressed-hispid or short-villous, midrib thickened and pungently hirsute, abaxial lobe longest and most hirsute; nutlets commonly 4, homomorphous, lance-ovate, ca. 2 (1.5–2.3) mm. long, more or less coarsely and decidedly tuberculate or verrucose, frequently somewhat granulate, grayish or brownish, margins slightly angled, back convex, groove narrow or closed but gradually dilated towards base into a small triangular areola; gynobase ⅔–¾ height of nutlets, narrow; style usually about reaching the nutlet-tips or rarely slightly surpassing or surpassed by them.—Pittonia i. 114 (1887). *Eritrichium intermedium* Gray, Proc. Am. Acad. xvii. 225 (1882). *Krynitzkia intermedia* Gray, Proc. Am. Acad. xx. 273 (1885); Synop. Fl. N. Am. ii. pt. 1, Suppl. 426 (1886). *C. quentinensis* Macbr. Contr. Gray Herb. n. s. lvi. 58 (1918). *C. barbigera*, var. *Fergusonae* Macbr. l. c. 59. *C. intermedia*, var. *Johnstonii* Macbr. l. c. 59.