

densely tufted with soft hairs (the hairs ascending and subequal) or the tufts often early deciduous; corolla $\frac{1}{4}$ line broad; nutlet solitary or usually so, ovate-attenuate, smooth, brown, rounded dorsally, a little rounded or convexly 2-planed ventrally, the angles sharply defined and subacute, the groove closed.

Gravelly washes, sandy flats in cañon-bottoms, and coastal mesas, 100 to 3500 feet: Inyo Co.; eastern Mohave Desert; western Colorado Desert; San Diego coast; Santa Barbara Isls. Mar-May.

Locs.—Inyo Co., Inyo, T. Brandegee; Furnace Creek, Funeral Mts., Parish. Eastern Mohave Desert: Needles (11 ml. w.), Mase & Herwood 3611. Western Colorado Desert: Painted Cañon, Mecca Hills, Jepson 11,635; Coachella (wash c.), Schellenger 23a; Bailey Well, w. Imperial Co., Jepson 17,093; Vallecito, e. San Diego Co., Jepson 8563; Split Mt. (near Fish Mt.), Parish 1922. Santa Barbara Isls.: Santa Barbara Isl., Trask; Santa Catalina Isl., T. Brandegee; San Nicolas Isl., Trask 56; San Clemente Isl., Marburger 136. San Diego coast: Pt. Loma, Crest.

Var. *pilosa* Jtn. Calyx densely tufted with soft ascending hairs, the tips of the lobes with a few divergent long bristles.—Inyo Co.; eastern Mohave Desert; Colorado Desert. East to Nevada and Arizona, south to Lower California. It is often associated with the species but has a markedly distinctive appearance. The ventral face of the nutlets is sometimes flattish and the lateral angles sometimes obtuse.

Locs.—Inyo Co.: Hole-in-the-Rock Spr., Daylight Pass, Grapevine Mts., Jepson 19,808; Argus Range (s. end), Jepson 19,553. Mohave Desert: Needles, Lemmon; Amboy Crater, Jepson 20,204; Kane Spr., Ord Mt., Hall & Chandler 6807; Calico, Parish 9798. Colorado Desert: Painted Cañon, Mecca Hills, Jepson 11,635a; Coachella (wash c.), Schellenger 23a; Signal Mt., T. Brandegee. Refs.—*CRYPTANTHA MARITIMA* Greene, Pitt. 1:117 (1887); M. & J., Bull. Torr. Club 49:38 (1923). *Krynitzkia maritima* Greene, Bull. Cal. Acad. 1:204 (1885), type loc. Guadalupe Isl., L. Cal., Palmer, Greene. *K. ramosissima* Greene, loc. 1:203 (Aug., 1885); not Gray (Jan., 1885). *C. ramosissima* Greene, Pitt. 1:116 (1887); Jepson, Man. 847 (1925). Var. *PSILOBA* Jtn., Univ. Cal. Publ. Bot. 7:445 (1922), type loc. Los Angeles Bay, L. Cal., Palmer 551.

31. *C. mohavensis* Greene. Stem branching low, forming a bushy plant 4 to 13 inches high; herbage spreading-hispid; leaf-blades linear, $\frac{1}{4}$ to $1\frac{1}{2}$ inches long; spikes $\frac{1}{4}$ to $1\frac{1}{2}$ inches long, borne in terminal glomerules or in terminal loose clusters; calyx-lobes linear, ascending-hirsute and sparingly spreading-bristly; corolla $1\frac{1}{2}$ to $2\frac{1}{4}$ lines broad; nutlets 4, ovate-acute, truncate at base, smooth, polished, flattish or subflattish dorsally, somewhat flattish on the ventral side or convexly 2-planed, the lateral angles obtuse.

Sandy flats, 2000 to 6000 feet; mesa borders of the Tehachapi Mts. or in their lower cañons; southern Sierra Nevada in Tulare and Inyo Cos. East to Nevada. May.

Locs.—Tehachapi Mts.: betw. Mohave sta. (Mohave Desert) and Cameron sta. (lower Tehachapi Pass), K. Brandegee; Bona sta. (near Caliente), Heller 7642. Inyo Co.: Grays, South Fork Oak Creek, S. W. Austin 629; Andrews Camp, Bishop Creek, K. Brandegee.

Refs.—*CRYPTANTHA MOHAVENSIS* Greene, Pitt. 1:120 (1887). *Krynitzkia mohavensis* Greene, Bull. Cal. Acad. 1:207 (1885), type loc. "Mohave Desert." Curran (that is, region of Mohave sta. most probably in the lower Tehachapi Pass). *C. fallax* Greene, Pitt. 5:54 (1905), type loc. Tehachapi, Greene. *C. incana* Greene, Lfita. 1:79 (1904), type loc. Nine-Mile Creek, Tulare Co., Culbertson 4537 (seems to belong here.—K. F. Hoover). *C. torreyana* var. *incana* Jepson, Man. 850 (1925).

32. *C. torreyana* Greene. Stem erect, usually stout, branched from the middle or the base, 7 to 21 inches high; herbage spreading rough-hispid; leaf-blades linear, $1\frac{1}{2}$ to $2\frac{1}{4}$ inches long; spikes in 1s, 2s or 3s, $\frac{1}{4}$ to 1 inch long and dense, or sometimes elongated and loose (2 to 3 inches long); calyx-lobes narrowly linear, spreading-bristly and ascending-hirsute; corolla minute ($\frac{1}{4}$ to $\frac{1}{2}$ line broad); fruiting calyx much exceeding fruit, 2 to 4 lines long, a little constricted at summit of nutlets, the tips of the lobes spreading; nutlets 4, ovate, acute, smooth, a little flattish on back, convexly 2-planed ventrally, the lateral angles obtuse, the groove and its short basal fork closed.

Grassy open or half-shady or brushy hillslopes, 1500 to 6600 (7300) feet: North Coast Ranges from Sonoma Co. to western Siskiyou Co.; west slope Sierra Nevada from Kern Co. to eastern Siskiyou Co.; east side Sierra Nevada from Mono Co. to Modoc Co. East to Utah and Wyoming, north to British Columbia. May-June.

Loas.—Coast Ranges: Santa Rosa Creek cañon, Sonoma Co., M. S. Baker 620; South Mill Creek (head), w. of Ukiah, Jepson 924; Eden Valley, se. Mendocino Co., Jepson 21,122; Lower Valley, cent. Mendocino Co., Tracy 5806; South Yuba, Bolly, se. Trinity Co., Jepson 21,134; Chamise Mt., near Shelter Cove, se. Mendocino Co., Tracy 6320; betw. Three Creeks and Willow Creek, n. Humboldt Co., Tracy 5841; Three Forks of Mad River, Trinity Co., Tracy 10,206; Beegun, w. Tehama Co., Jepson 16,631; Sisson, w. Siskiyou Co., Jepson 21,131; Sierra Nevada: Posa Creek, Circulars Mts., Hall & Bolckow; betw. Watson Spr. and Cedar Creek, North Fork Kaweah River, Jepson 598; Chowchilla School, Mariposa Co., Jepson 12,802; Deadman Creek, Middle Fork Stanislaus River, Jepson 6560a; near Alpine Camp, upper Truckee River, Eldorado Co., H. M. Fieber; Bear Valley, near Emigrant Gap, Jepson 21,133; Yuba Pass, Sierra Co., Jepson 16,655; Rock Creek, Mendocino Valley, Plumas Co., Jepson 19,337; Rich Gulch, Plumas Co., Feltner 99; Shaata Retreat, Siskiyou Co., Condit. East side of Sierra Nevada: Walker River, Mono Co., Muzz 7571; Dog Valley, e. Nevada Co., Jepson 21,132; North Fork Bidwell Creek, n. Warner Mts., Jepson 7907.

Var. *pumila* Jtn. Plants often dwarfish and 2 to 5 inches high; fruiting calyx 1½ lines long; nutlets smaller.—South Coast Ranges (Los Gatos, foothills w. Heller 7458; Penitencia Creek, near Mt. Hamilton foothills, Easton; Mt. Diablo, Bowersman 2245; Strawberry Cañon, Berkeley Hills, Tracy 793); Marin Co. (Mt. Tamalpais).

Var. *serotata* Jepson num. n. Stem erect, weak, 7 to 16 inches high, divergently few-branched, the branches long, slender, flexuous; calyx 1½ lines long, densely ascending hispid with short hairs, the midrib of the lobes with a few much reduced bristles, these bristles very slender and spreading, sometimes long, sometimes very short, but rising above the appressed hairs at an angle; corolla 1 to 1½ lines wide.—Chaparral slopes, open woods and rocky outcrops, 500 to 2000 feet; North Coast Ranges from Lake Co. to Del Norte Co., Apr.-June.

Tax. note.—The nutlets of var. *serotata* are like those of the species, *Cryptantha torreyana*. For example, in representative collections, the nutlets of var. *serotata* in a collection from the hills near the mouth of the South Fork Trinity (Tracy 10,141) are identical with the nutlets in a collection of *Cryptantha torreyana* from Chamise Mt., near Shelter Cove, Tracy 6320; the nutlets of these two collections are alike in shape, in beak, in the flattened back, in the slightly raised ventral side, in the groove and its fork. The two forms are alike in all other features save difference in habit and save that the calyx-bristles are extremely reduced in number and in size in the variety. Other stations for the variety may be cited as follows: Ruth (6 miles above), Mad River Valley, Trinity Co., Tracy 4298; New River Bluffs, Trinity Co., Tracy 6388; Smith River, Del Norte Co., Purks 24,011 (det. R. F. Hoover).

Var. *traskae* (Jtn.) Jepson comb. n. Nutlets smaller than in the species, ¾ as long, smooth but minutely tuberculate towards apex dorsally.—San Nicolas Is.; San Clemente Is., Mars 6674. The nutlets in the type of this variety in shape, basal fork of groove and somewhat truncatish base resemble closely the nutlets of the species, *Cryptantha torreyana*. Although the variety is, admittedly, widely sundered geographically from the species, it cannot well be referred to the more nearly contiguous species, *Cryptantha clelandii*, which differs in fundamental structure on account of its narrow thickened or subteretish rostellate nutlets as opposed to the somewhat compressed broad nutlets of var. *traskae*.

Refs.—*CRYPTANTHA TORREYANA* Greene, Pitt. 1: 118 (1887); Jepson, Fl. W. Mid. Cal. 446 (1907), ed. 2: 343 (1911); Mans. 850 (1925). *E. spatulata torreyana* Gray, Proc. Am. Acad. 20: 271 (1855), "nearly throughout Cal."; (lectotype, Yosemite Valley, Torrey in 1865; cf. Johnston, Contrib. Gray Herb. 74: 81). *E. torreyana* var. *calycosa* Gray, l.c., type loc. Lake Co., Easton (no. 42, acc. Gray Herb.), the Bowers spatulate-congested at ends of branches, the calyces 3 lines long. *C. torreyana* subsp. *capitata* Brand; Engelm. Flur. 489: 58 (1921), type loc. Lake Co., Easton 42. *C. torreyana* var. *colligatae* Jtn., Contrib. Gray Herb. 74: 80 (1925), type loc. Callisto, Tracy 2094, a form with longer style. *C. tri/seros* Eastw., Bull. Torr. Club 22: 203 (1905), type loc. Klamath, Siskiyou Co., Copeland 3650. Var. *pumila* Jtn., Contrib. Gray Herb. 74: 80 (1925). *C. pumila* Hilleb., Muhl. 2: 242 (1906), type loc. summit Mt. Tamalpais, Marin Co., Heller 4032. Var. *serotata* Jepson, *C. milobakersi* Jtn., Jour. Arn. Arb. 21: 63 (1940), type loc. betw. Keyesville and Lower Lake, Lake Co., M. S. Baker 7629 (typ. non vidi). Var. *traskae* (Jtn.) Jepson, *C. traskae* Jtn., Contrib. Gray Herb. 74: 77 (1925), type loc. San Nicolas Is., Trask.

33. *C. watsonii* Greene. Stem erect, branched, 4 to 10 inches high; herbage hirsute; leaf-blades narrowly oblong or linear, ½ to 1½ inches long; spikes 2 to 9 lines long; calyx-lobes lanceolate, thinly strigose and sparsely spreading-bristly; corolla ½ to ¾ line broad; nutlets 4 or 3, smooth, narrow-ovate, flattish on back, convexly 2-planed on the ventral side, the lateral angles sharply acute, the ventral groove closed or nearly so, shortly forked at base.

Desert ranges, 5000 to 10,300 feet; White Mts. East to Colorado, north to Oregon and Montana. May-Aug.

Geog. note.—Distributed widely over the mountains of the Great Basin region, *Cryptantha watsonii* has never hitherto been reported from California. Three collections are available for