

with a definite papilla in the hollow (Portal Ridge, *Jepson* 17,065), or yet again the tubercle may become somewhat crater-like and bearing a distinct papilla in the crater (Portal Ridge, *Jepson* 17,059). In all these cases of crater-like tubercles, the tubercles rise from a brown ground. In the case of var. *clokeyi* (Jtn.) *Jepson* comb. n., the tubercles, likewise crateriform, are set on a whitish or lighter-colored ground and the calyx (3 to 3½ lines long) much surpasses the nutlets (n. of Barstow, Mohave Desert).

Var. *jonesii* Jtn. Stems 1 or few from the base, 5 to 20 inches high, ending in an umbellate cyme, the spikes below the cyme borne on short branches; corollas ¼ to ½ line broad.—Hillslopes, often in chaparral, 1000 to 5500 feet: Coast Ranges from Glenn Co. to Monterey Co.; Sierra Nevada from Nevada Co. to Kern Co.; intramontane and eismontane Southern California. South to Lower California, east to Nevada and Arizona.

Field note.—The most marked habital or biotypic form of *Cryptantha muricata* var. *jonesii* is developed in colonies which make open stands. The single stem axis of plants in uncrowded situations grows to a height of 1¼ to 2 feet and develops a terminal umbellate-cymose inflorescence of 3 to 9 spikes. Somewhat later, after the terminal cyme is established, the axis below becomes "feathered" with short branches which bear 1, 2, or 3 spikes. The "feathering" may be light or dense, in either case producing a narrow column, the main axis otherwise usually remaining unbranched. Such a growth form is characteristic of gravelly hilltops in Lake County, in Yosemite, in the San Gabriel Mountains, and other semi-arid stations.

Locs.—Coast Ranges: Alder Sprs. (9 mi. e.), w. Glenn Co., *Heller* 11,450; Blue Lakes, nw. Lake Co., *Jepson* 21,098; Cache Creek, n. of Lower Lake, Lake Co., *Jepson* 18,911; Reiff, Knoxville Ridge, se. Lake Co., *Jepson* 18,995; Hood's Peak, e. Sonoma Co., *Bioletti*; Mt. Tamalpais, *K. Brandegee*; Ben Lomond, Santa Cruz Co., *T. Brandegee*; Jamesburg, Monterey Co., *W. I. Follett* 73. Sierra Nevada: Bronco, e. Nevada Co., *Sonne* 396; Lettes sta., near Sonora Pass, *A. L. Grant* 134; South Fork Tuolumne River bridge, *A. L. Grant* 841; Snow Creek, Yosemite, *Jepson* 10,487a; Hospital Rock, Middle Fork Kaweah River, *W. Fry* 332; Kernville, *T. Brandegee*. Intramontane and eismontane S. Cal.: Arrastre Creek, San Gabriel Mts., *Peirson* 2476; Fontana, San Bernardino Valley, *Clokey* 5838; Cajon Cañon, *Jepson* 6097; Strawberry Valley, Mt. San Jacinto, *Jepson* 1298a; Elsinore (5 mi. n.), *Jepson* 12,429; Palomar Mt., San Diego Co., *Jepson* 1505a; Wagon Wash near Sentenac Cañon, e. San Diego Co., *Jepson* 12,487; San Diego, *Spencer* 38.

Refs.—CRYPTANTHA MURICATA Nels. & Mebr., Bot. Gaz. 61:42 (1916). *Myosotis muricata* H. & A., Bot. Beech. 369 (1840), type from Cal., *Douglas*. *Eritrichium muriculatum* A. DC., Prodr. 10:132 (1846), a renaming (not *Eritrichium muricatum* A. DC., l.e.). *Krynitzkia muriculata* Gray, Proc. Am. Acad. 20:273 (1885). *C. muriculata* Greene, Pitt. 1:113 (1887); *Jepson*, Fl. W. Mid. Cal. 444 (1901), ed. 2, 347 (1911), Man. 848 (1925). *C. horridula* Greene, Pitt. 5:55 (1902), type loc. Salinas Valley. Var. *CLOKEYI* *Jepson*. *C. clokeyi* Jtn., Jour. Arn. Arb. 20:387 (1939), type loc. Barstow (n. of), *Clokey* 6859. Var. *JONESII* Jtn., Plant World 22:114 (1919). *Krynitzkia jonesii* Gray, Proc. Am. Acad. 20:274 (1885), type loc. Soledad, Monterey Co., *Jones*. *C. jonesii* Greene, Pitt. 1:113 (1887); *Jepson*, Fl. W. Mid. Cal. 445 (1901), ed. 2, 347 (1911). *C. vitrea* Eastw., Proc. Cal. Acad. ser. 3, 2:292 (1902), type loc. Bubbs Creek, Fresno Co., *Eastwood*. *C. muriculata* var. *vitrea* *Jepson*, Man. 848 (1925). *Krynitzkia denticulata* Greene, Bull. Cal. Acad. 1:205 (1885), type from w. Nev., *Curran*. *C. denticulata* Greene, Pitt. 1:114 (1887). *C. muricata* var. *denticulata* Jtn., Contrib. Gray Herb. 74:71 (1925).

6. *C. intermedia* Greene. Stem erect and branching above, or diffusely branched from base, ½ to 1 foot high; herbage hispid with both appressed and spreading hairs; leaf-blades lanceolate or linear, ½ to 1½ inches long, sessile or narrowed to obscure petioles; spikes usually in 2s or 3s, sometimes 4s or 5s, at first dense, soon loose, and 1 to 3½ inches long; calyx-lobes linear, ¾ to 1 line long, in fruit 1½ to 2½ lines long, densely villous-ciliate and villous inside, the back not villous but set with long scattered spreading bristles; corolla 1½ to 3¼ lines broad; nutlets 4 (3 or 2), ovate-rostrate or lanceolate-attenuate, obtusish at apex, densely and coarsely tuberculate dorsally and also ventrally, the lateral angles obtuse and tuberculate, the ventral groove closed or open, triangular-areolate or forked at base.

Sandy or gravelly valley floors or washes or on foothill slopes or rocky cañon bottoms, 200 to 6000 feet: Coast Ranges from western Siskiyou Co. to San Luis Obispo Co.; upper Sacramento Valley; Sierra Nevada foothills from Shasta Co. to Tuolumne Co.; western Mohave Desert; eismontane Southern California. South into Lower California. Apr.-June.

Locs.—Coast Ranges: Scott River Valley, w. Siskiyou Co., *Gilbert*; Hupa Valley, *Jepson* 2025; Paskenta, sw. Tehama Co., *Jepson* 16,317; Stonyford, w. Glenn Co., *Jepson* 16,291; Bell Cañon, Howell Mt., Napa Range, *Jepson* 18,861; Soledad, Monterey Co., *Congdon*; Templeton,