

inadvisable, especially as material from Los Angeles Bay (type locality of *C. angelica*) is indistinguishable from typical *brevicalyx*. *Coldenia angelica* has priority of position over *C. brevicalyx*.

329. ***Coldenia plicata* (Torr.) Cov.**

Coldenia plicata Cov., Contr. U. S. Nat. Herb. 4:163. 1893. *Coldenia brevifolia* var. *plicata* Torr., Bot. Mex. Bound. 136. 1859.—*Coldenia palmeri* of Wats. and recent authors, not of Gray.—*Type locality*: Colorado Desert, California.

Frequent on the dunes at Tepoca Bay (4407). Quickly recognized by its deeply veined, densely pubescent leaves.

330. ***Cordia brevispicata* M. & G.**

Cordia brevispicata M. & G., Bull. Acad. Brux. 11²:331. 1844.—*Cordia palmeri* Wats., Proc. Am. Acad. 24:62. 1889.—*Cordia socorrensis* Brandg., Erythea 7:5. 1899.—*Type locality*: Tehuacan, Puebla.

Collected at San Carlos (4364), San Pedro (4319), and Agua Verde (3873) bays, and on Espiritu Santo (3967, 4075), and Ceralbo (4049) islands. Usually only a few plants were seen at each locality, but at San Carlos Bay and at Candeleros Bay on Espiritu Santo Island the plant was rather frequent. It appears to affect gravelly situations, usually occurring in cañons and particularly about large rocks. It has exceedingly numerous, strictly ascending stems which form a dense domed growth 1-2 m. high. The plant has a peculiar odor which suggests that of the drug, coltsfoot. The corolla is creamy yellow and has more or less recurved lobes. The species is not frequent over the southern portions of the peninsula but ranges as far north as San Pablo where Purpus collected it in 1898.

331. ***Cryptantha angelica* n. sp.**

A rather dense depressed rounded plant 15-25 cm. high; stems spreading, branched from the base with numerous rebranched laterals, brown and glabrous below, canescent and strigose above; leaves linear, 8-24 mm. long, 1-2 mm. wide,

conduplicate, strigose and densely pustulate below, very sparsely strigose and sparingly pustulate above, not particularly numerous; inflorescence of numerous biserial unilateral naked very floriferous spicate-racemes that occur in groups of 1-3 on short peduncles nearly throughout the plant; corolla white, very inconspicuous, about 1 mm. long, lobes about 0.25 mm. long, tube shorter than sepals; fruiting calyx about 2 mm. long, strictly ascending, subsessile or on pedicels 0.5 mm. long, lobes linear-lanceolate ribbed and conspicuously hirsute, axial lobe the shortest the least pubescent and least evidently ribbed; nutlets 4, heteromorphous with the nutlet adjacent the abaxial sepal the largest and most persistent, all nutlets narrowly ovate, sharp-margined and dark with pallid tubercles, odd nutlet (about 0.7 mm. long) exceeding the gynobase by 0.2 mm., homomorphous nutlets (about 0.6 mm. long) exceeding gynobase by 0.1 mm.; style about 0.5 mm. long, exceeding odd nutlet by about 0.4 mm.; groove of nutlets usually closed above but lower third usually dilated to form a shallow triangular areola.

Type: No. 1299, Herb. Calif. Acad. Sci., collected June 30, 1921, by I. M. Johnston (no. 4221) on a silty flat near the south end of **Angel de la Guarda, Gulf of California.**

A few plants of this species were collected on a silty flat on Angel de la Guarda Island (4221) at a point just opposite Pond Island. The relations of the plant are with *C. inaequata*, but this plant differs from that species in its denser inflorescence and much smaller calyces and nutlets. The related species, those with sharp or beveled or wing-edged nutlets, may be distinguished by the following key:

- Nutlets inconspicuously roughened, plano-convex in cross-section, face flat, back rounded. (*C. seorsa* Macbr.).....*C. costata* Brandg.
 Nutlets conspicuously roughened, not plano-convex in cross-section.
 Calyx evidently pedicelled; long-lived annuals.
 Nutlets homomorphous; calyx persistent.....*C. holoptera* Gray
 Nutlets heteromorphous; calyx deciduous*C. racemosa* (Wats.) Greene

Calyx sessile or subsessile; short-lived annuals.

Style exceeding the nutlets.

Nutlets heteromorphous; calyx moderately broad.

Inflorescence dense; fruiting calyx about 2 mm. long; nutlets 0.6-0.7 mm. long.....

C. angelica Johnston

Inflorescence loose; fruiting calyx 2.5-3.0 mm. long; nutlets 1.7 mm. long.....

C. inaequata Johnston

Nutlets homomorphous; calyx very broad... *C. pusilla* (T.&G.) Greene

Style shorter than nutlets.

Nutlets 4-3, usually broadly winged... *C. pterocarya* (Torr.) Greene

Nutlets 1-2, narrowly winged..... *C. utahensis* (Gray) Greene

332. *Cryptantha angustifolia* (Torr.) Greene

Cryptantha angustifolia Greene, Pitt. 1:112. 1887.—*Eri-trichium angustifolium* Torr., Pacif. R. R. Rep. 5:363. 1856.—*Krynitzkia angustifolia* Gray, Proc. Am. Acad. 20:272. 1885.—*Type locality*: Fort Yuma, Arizona.

Collected on Tiburon (4390), San Luis (4391), and Angel de la Guarda (4227) islands. What was probably the same was noticed on the dunes at Tepoca Bay. Known on the peninsula only through collections of Palmer, who collected it at Los Angeles Bay (606) and at Santa Agueda (241).

333. *Cryptantha grayi* var. *cryptochæta* (Macbride), n. comb.

Cryptantha micromeres var. *cryptochæta* Macbride, Contr. Gray Herb. II, 48:46. 1916.—*Cryptantha filiformifolia* Macbride, Contr. Gray Herb. II, 48:45. 1916.—*Type locality*: San José del Cabo, Lower California.

Collections representing this small-flowered southern form of *C. grayi* were made on a sandy clearing at La Paz (3055, 3071). *Cryptantha grayi* (Vasey & Rose) Macbride (op. cit. 43) is a well-marked species related to *C. angustifolia* and to *C. micromeres*, but readily distinguished from each by its homomorphous nutlets and southern range. In having the style much exceeding the nutlets it agrees with *C. angustifolia* but differs from *C. micromeres*, for the latter plant has the style and largest nutlet subequal. Macbride has described sev-

eral forms in this group apparently because he confused *C. micromeres* and *C. grayi*. One of his names, however, can be used to designate the small-flowered plant that replaces the large-flowered typical form in the cape region of the peninsula.

334. *Cryptantha grayi* var. *nesiotica*, n. var.

Nutlets etuberculate or with only a few pallid tubercles, surface usually wrinkled and unicolored; stems stouter and more or less densely villous-strigose.

Type: No. 1300, Herb. Calif. Acad. Sci., collected May 30, 1921, by I. M. Johnston (no. 3947) on the dunes on **San Francisco Island, Gulf of California**.

This is a frequent plant on the dunes on Coronados (3947), San Francisco (3766), and Espiritu Santo (3994) islands. It represents a small-flowered insular development of the species characterized by its coarser, villous-strigose stems and by its etuberculate nutlets. The root frequently contains a purple dye which stains the collecting papers.

335. *Cryptantha maritima* Greene

Cryptantha maritima Greene, Pitt. 1:117. 1887.—*Krynitzkia maritima* Greene, Bull. Calif. Acad. Sci. 1:204. 1885.—*Krynitzkia ramosissima* of Greene, Bull. Calif. Acad. Sci. 1:203. Aug. 1885. not Gray Jan. 1885.—*Type locality*: Guadalupe Island off west coast of Lower California.

Common on a silty flat on Angel de la Guarda Island (4237). Rare on the sandy plain at San Francisquito Bay (4394). A very common plant on the western part of the peninsula and on the islands off that shore. On the gulf side it appears to be largely replaced by the following variety:

336. *Cryptantha maritima* var. *pilosa* Johnston

Cryptantha maritima var. *pilosa* Johnston, Univ. Calif. Pub. Bot. 7:445. 1922.—*Type locality*: About Los Angeles Bay, Lower California.

On San Luis Island (4392) this is frequent in sheltered places, particularly among rocks. It was seen at no other point. The only peninsular material seen is that collected by Palmer

at Los Angeles Bay (551) and at Santa Agueda (242). The Santa Agueda collection is a mixture, for the Gray Herbarium material was correctly determined by Macbride (Contr. Gray Herb. II, 56:58. 1918) as *C. echinosepala*, whereas the material in the University of California herbarium is clearly the pilose form of *C. maritima*. *Cryptantha echinosepala* Macbride is a very distinct peninsular species which is most closely related to *C. angustifolia*, but which is readily distinguished from the latter by its commonly reddish stems, shorter style, and by its peculiar calyx whose axial (instead of abaxial) lobe is the longest and most hispid. At present *C. echinosepala* is known only from about Magdalena Bay, La Paz, and Santa Agueda.

337. *Cryptantha racemosa* (Wats.) Greene

Cryptantha racemosa Greene, Pittonia 1:115. 1887.—*Eritrichium racemosum* Wats. in Gray, Proc. Am. Acad. 17:226. 1882.—*Krynitzkia racemosa* Greene, Bull. Calif. Acad. Sci. 1:208. 1885.—*Krynitzkia ramosissima* Gray, Proc. Am. Acad. 20:277. 1884.—*Cryptantha suffruticosa* Piper, Proc. Biol. Soc. Wash. 32:42. 1919.—*Type locality*: Mesquite Cañon near Mesquite Station, Imperial County, California.

Collected at Las Animas Bay (3505), and on Angel de la Guarda (3374, 4204), San Esteban (3171, 3175), Tiburon (4255), South San Lorenzo (4192), and San Marcos (3621) islands. On the gulf islands known otherwise only from Carmen Island (Contr. U. S. Nat. Herb. 1:133. 1892). The plant affects rocky ground, usually growing on cañon sides. It varies much in habit of growth, having a single, subsimple, stiffly erect stem, or several widely spreading branches that produce many long, strict, subsimple branches, or one or two repeatedly and loosely branched bushy stems. The growth is usually irregular and the appearance decidedly unkempt. It is commonly 3-6 dm. high, but occasionally the virgate branches become close to a meter in length. The collections are very constant and check closely with typical material. The only notable atypical development is that in number 4204 where the calyces are almost bare of spreading hirsute bristles.

This species is usually said to be perennial, but observations do not bear out that statement. It seems probable that it is merely a persistent annual that flowers continuously throughout the year and becomes more or less suffruticose. No plants were seen that produced shoots from the year-old indurated base. It is a notable fact that dead wood is conspicuously rare even in large thriving plants of *C. racemosa*, close observation showing that all growth on the plant is less than a year old and that when part dies all usually dies. The condition in *C. holoptera* is probably the same. If the persistence of these two species is to be emphasized it is best stated by terming them "long-lived" annuals. The more evanescent species, which form the bulk of the genus *Cryptantha*, may be termed "short-lived" annuals.

338. *Heliotropium inundatum* Swartz

Heliotropium inundatum Swartz, Prodr. Veg. Ind. Occ. 40. 1788.—*Type locality*: West Indies.

Collected in an empty tinaja in the mountains back of Agua Verde Bay (3883) and in moist sand near a spring in the hills back of San Pedro Bay (4327).

LXXVI. LABIATÆ

339. *Hyptis emoryi* Torr.

Hyptis emoryi Torr., Bot. Ives Rep. 20. 1860.—*Mesosphaerum emoryi* Kuntze, Rev. Gen. Pl. 2:526. 1891.—*Type locality*: "Upper Colorado" River, Arizona.

Referred to this species are the collections from Tepoca Bay (3304), Tiburon Island (3257, 4253), San Esteban Island (3165), and South San Lorenzo Island (3539). These specimens all agree in having the foliage about 2 cm. long, ovate, and densely tomentose. They are much more tomentose than are average specimens from Arizona and California. The plant usually grows on gravelly cañon floors and is a strictly though openly branched upright shrub 15-25 dm. high. *Hyptis emoryi* is very close to *H. albida* H.B.K., of which it is perhaps only a form.