

of Taltal, but is clearly different in its pulvinate habit, silvery pubescence, smaller corollas and inconspicuously hirsute calyces.

10. *C. chaetocalyx* (Ph.), comb. nov. Annual; stems several, 4–10 cm. long, spreading, loosely branched, with a very short mostly appressed slender hispid pubescence; leaves linear or oblong to lanceolate, obtusish, 1–1.5 cm. long, 1–3(–4) mm. broad, scabrous, short-hirsute, evidently and abundantly pustulate; spikes 1–3 cm. long, bractless, solitary or geminate, becoming loose in age; fruiting calyx ovate, 2–4 mm. long, contracted into a short stout angulate pedicellate base; mature calyx-lobes linear, above middle sparsely hirsute and green and spreading, midrib very prominent and pungent short-hirsute below middle; corolla white, 2.5–5 mm. broad; ovules 4; nutlets usually 4, homomorphous with the axial one most persistent, 1.5–2 mm. long, oblong-ovate, very finely granulate, more or less obscurely rugulose or tuberculate, apex acute, sides sharp, base rounded, back convex without a medial ridge; gynobase ca. $\frac{3}{4}$ height of nutlets; style definitely surpassing the nutlets.—*Eritrichum chaetocalyx* Ph. Fl. Atac. 39 (1860) and Viage Des. Atac. 10 and 213 (1860). *E. divaricatum* Ph. Anal. Univ. Chile xc. 534 (1895). *C. divaricata* Reiche, Anal. Univ. Chile cxxi. 827 (1908) and Fl. Chile v. 232 (1910). *E. pustulosum* Ph. Anal. Univ. Chile xc. 537 (1895).

CHILE. ATACAMA: Bandurrias, *Geisse*, (MS); Desert of Atacama (? Bandurrias), *Geisse 154* (NY); Atacama Desert [Caldera region], *Morong 1235* (G, NY, US, FM); "Caldera ? Copiapó," *no collector given* (MS); Caldera, Dec. 1853, *Philippi* (MS, TYPE of *E. chaetocalyx*; G, photo.); Caldera, Sept. 1879, *no collector given* (MS, TYPE of *E. pustulosum*; G, photo.); Caldera, Sept. 1885, *F. Philippi* (MS, TYPE of *E. divaricatum*; G, photo.); Caldera, 1906, *Gigoux* (G).

Although in the original account of *E. chaetocalyx* the type is given as coming from near Pan de Azucar, lat. 26° 10', I feel certain that in fact it came from Caldera, lat. 27° 5'. There are no specimens in the Philippi herbarium from north of Caldera. I searched for the plant about Caleta de Pan de Azucar and did not find it. In the Philippi herbarium there is but a single collection labeled *E. chaetocalyx* which was collected by Philippi during his travels in the Atacama Desert in 1853–4. This is from Caldera and checks perfectly with the original description. It is notable that in the text of the narrative of his explorations, Philippi does not mention the species in connection with Pan de Azucar although he does so with Caldera. Hence I feel confident that the locality given with the original description is an error and probably a slip of the pen. The type almost certainly came from Caldera. The species is a very distinct one with characteristic coarse spreading stems and more or less obscurely roughened nutlets. Its

relations are with *C. granulosa* and *C. filiformis* though it is quite distinct from both.

11. *C. filiformis* (Ph.) Reiche. Annual, 5-30 cm. tall, usually loosely and ascendingly branched from the base, finely hispid and frequently appressedly so; leaves not numerous, lanceolate to lance-linear or oblanceolate, 1-3 cm. long, 1-5(-9) mm. broad, obtuse or acutish, sessile, pustulate and hirsute; spikes solitary or geminate, 1-10 cm. long, bractless, becoming loosely flowered; fruiting calyces ovate or oblong-ovate, 3-5 mm. long, subsessile; mature calyx-lobes linear or lance-linear, obtusish, hirsute below the middle, above the middle usually herbaceous sparsely appressed short-hispid and spreading; corolla conspicuous, 4-7 mm. broad, white; fruit 4-ovulate; nutlets usually 4, heteromorphous, ovate or ovate-oblong, back obscurely obtuse, base truncate, sides angled, groove opened or closed and broadly forked near base; odd nutlet axial, evidently the largest, 1.5-2 mm. long, most firmly affixed, palest, tuberculate or muriculate or papillate, more or less stipitate-glandular; homomorphous nutlets 1.3-1.5(-1.7) mm. long, tuberculate, brownish; gynobase about $\frac{2}{3}$ length of nutlets; style much surpassing nutlets, about twice length of gynobase.—Anal. Univ. Chile cxxi. 829 (1908) and Fl. Chile v. 234 (1910). *Eritrichum filiforme* Ph. Fl. Atac. 39 (1860) and Viage Des. Atac. 213 (1860). *E. mite* Ph. Anal. Univ. Chile xc. 539 (1895). *C. mitis* Reiche, l. c.

CHILE. ANTOFAGASTA: Hueso Parado, Taltal, 1853, *Philippi* (MS, TYPE of *E. filiforme*; G, photo.); coastal hills, Tocopilla, Sept. 1889, *Vidal* (MS, TYPE of *E. mite*; G, photo.); Tocopilla, no collector given, no. 13 (MS); gravelly fog-bathed slope, Tocopilla, Oct. 1925, *Johnston 3578* (G). TARA-PACÁ: Quebrada Huantaca, Iquique, Sept. 1904, *Martens* (MS); Quebrada Huantajaya, Iquique, 700 m. alt., Sept. 1925, *Werdermann 764* (G).

The type of *C. filiformis* is a very small slender plant given as from Hueso Parado at Taltal. Although with a different gross aspect, it has the fruit-characters, the calyx and pubescence of the Tocopilla and Iquique plants. I made very many collections of *Cryptanthas* in the region about Taltal but did not discover any plants there that could be mistaken for *C. filiformis*. If the plant actually came from the Taltal region it must be rare or very local. The known range of the species is very disrupted. The material at hand shows variation in size and shape of the calyx-lobes and to some extent in the outline of the nutlets also. However, these variations are unimportant since they are all present among the large suite of specimens I collected on a single hillside at Tocopilla.

12. *C. granulosa* (R. & P.) Johnston. Annual, 5-30 cm. tall; stems erect, becoming loosely and ascendingly branched, finely hispid