cate, sides sharply margined, back usually convex; groove open or closed above but below expanded broadly into a shallow open triangular areola; gynobase subulate, about equalling length of nutlets; style clearly surpassing the nutlets.—Anal. Univ. Chile cxxi. 821 (1908) and Fl. Chile v. 226 (1910). *Eritrichium diplotrichum* Pl. Cat. Pl. Itin. Tarapaca 57 (1891). *E. diplotrichum*, var. *humilis* Ph. l. c. *C. diplotricha*, var. *humilis* Reiche, l. c. *E. axillare* Ph. l. c. *C. axillaris* Reiche, l. c. *C. modesta* Brand in Fedde, Repert. xx. 48 (1924).

ARGENTINA. Los Andes: between Antofagasta and Calalaste, 3600 m. alt., Jan. 1885, *F. Philippi* (MS, type of *E. diplotrichum;* G, photo); Breas, Jan. 1885, *F. Philippi* (MS, type of *E. diplotrichum*, var. *humilis;* G, photo.); between Breas and Salar, Jan. 1885, *F. Philippi* (MS, type of *E. axillare;* G, photo.). La Rioja: Tambillos, 1600 m. alt., *Hosseus 1711* (G, part of type of *C. modesta*).

Most related to *C. albida* but clearly different, particularly as to fruit. Both Brand and Reiche have placed the species in the section *Eucryptantha*, accrediting it with cleistogamic flowers. I have searched for closed-flowers but have been quite unable to find any. The corollas are small and tubular, however, and perhaps might be mistaken for cleistogamic ones if not examined under high magnification.

7. **C. parviflora** (Ph.) Reiche. Slender annual, 3–20 cm. tall; stems commonly one, usually loosely branched from near base, very leafy, more or less abundantly appressed chalky-hispid and frequently also somewhat spreading short-hirsute; leaves linear, 5–40(–50) mm. long, 1–2 mm. broad, appressed-hispid or spreading short-hirsute, somewhat pustulate beneath, weakly reduced up the stem and in plants beginning to fruit somewhat obscuring the spikes; spikes solitary or geminate, 1–5(–7) cm. long, numerous, bractless except for a leafy bract at base; fruiting calyx ovate or oblong-ovate, 1.5–2 mm. long, sessile, readily deciduous; mature calyx-lobes lanceolate or lance-oblong, connivent, densely short-hirsute; corolla minute, subtubular, 0.3–0.5 mm. broad, white; fruit 4-ovulate; nutlets usually 4, heteromorphous, ovate or triangular-ovate, dark with pale tuberculations or broad murications, apex acute, base rounded, back convex, edges sharply margined, groove usually closed above but below dilated into a shallow triangular areola; odd-nutlet abaxial, largest and most persistent, ca. 1 mm. long; consimilar nutlets 0.6–0.8 mm. long, readily deciduous; gynobase ca. $\frac{2}{3}$ height of odd-nutlet; style much surpassing odd nutlet, a little shorter than the gynobase.—Anal. Univ. Chile cxxi. 821 (1908) and Fl. Chile v. 226 (1910). *Eritrichum parviflorum* Ph. Fl. Atac. 39 (1860) and Viage Des. Atac. 10 and 213 (1860). *E. microphyllum* Ph. Cat. Pl. Itin. Tarapaca 57 (1891). *C. micro-*

phylla Reiche, l. c. 828 and l. c. 233. *C. piscoensis* Brand in Fedde, Repert. xx. 49 (1924). *C. umbelliformis* Brand, l. c. 317. *C. Seleri* Brand, l. c. 317.

CHILE. ATACAMA: Chañarcillo, Sept. 1876, *no collector given* (MS; G, photo.); Bandurrias, *Geisse* (MS); Desert of Atacama [? *Bandurrias*], *Geisse 58B* (NY); Atacama Desert, 1884, *San Roman* (MS; G, photo.); gravel, hills north of Copiapó, 800 m. alt., *Johnston 5026* (G); Caldera, Dec. 1853, *Philippi* (MS, TYPE of *E. parviflorum;* G, photo.); coastal dunes, Caldera, *Johnston 5059* (G); gravelly bench near Caleta Pan de Azucar, *Johnston 5837* (G). ANTOFAGASTA: dry slope, Sierra Esmeralda, *Johnston 5681* (G). TARAPACÁ: Chismisia, March, 1885, *Rahmer* (MS, TYPE of *E. microphyllum;* G, photo.).

PERU. MOQUEGUA: hills southeast of Moquegua, 1500–1600 m. alt., *Weberbauer 7398A* (G, FM). AREQUIPA: open sandy and rocky slopes, Tingo, 2100–2300 m. alt., *Pennell 13112* (G, FM); open gravelly slope above Arequipa, 2500 m. alt., *Pennell 13177* (G, FM); Yura, 1884, *Borm* (G). ICA: slopes above Pisco, 1200–1300 m. alt., *Weberbauer 5375* (G, part of TYPE of *C. piscoensis*). LIMA: open rocky slope, Quive, 800–1000 m. alt., *Pennell 14300* (G); mountains near Chosica, 1500 m. alt., *Weberbauer 5337* (FM, ISOTYPE of *C. umbelliformis*).

This species, while evidently distinct, is very closely related to the North American *C. angustifolia* (Torr.) Greene and *C. Grayi* (V. & R.) Macbr., cf. Contr. Gray Herb. lxxiv. 31 and 38–40 (1925). All the material cited above has heteromorphous nutlets with the abaxial one evidently the largest and most persistent. In this fact as well as in general form and appearance of the nutlets, the present species agrees closely with *C. angustifolia*, though in size of parts and general aspect it is much nearer *C. Grayi*.

I have been quite unable to separate specifically the Chilean and Peruvian plants. In a very general way it can be said that the Peruvian specimens are somewhat more strictly branched and more leafy particularly above. These, however, are but vague differences and, perhaps, hardly more than an impression. The type and only known collection of *E. microphyllum* unquestionably belongs here. The specimen is a poor one, with numerous simple flagellate branches and linear leaves ca. 6 mm. long. In habit it very much suggests *C. pusilla* (T. & G.) Greene, of North America. The nutlets are clearly heteromorphous. I have seen no authentic material of *C. Seleri* but assume it to be the hispid plant collected by Pennell and Borm in the vicinity of Arequipa. *Cryptantha umbelliformis* I believe to be merely a young state of the same form. *Cryptantha piscoensis* has an appressed pubescence and is a somewhat coarser form. It has been collected at Quiva by Pennell.

Possibly representing a distinct species in my own collection, no. 6281, from a dryish bench just below the fertile belt in the hills back

of Mollendo, Peru. This plant definitely has homomorphous nutlets. Though the nutlets are all consimilar, the abaxial one is more firmly attached to the gynobase than are the others. In other than the homomorphy of its nutlets the plant is quite like the Peruvian forms of *C. parviflora*. It has the appressed pubescence and the slightly coarse habit of the type of *C. piscoensis*.

8. **C. subamplexicaulis** (Ph.) Reiche. Perennial or persistent annual with a firm branching root, erect and subsimple at first but later with several or many trailing branches from a loose fruticulose caudex and forming a loose prostrate mat 3–12 dm. broad and 1–2 dm. tall, hispid or hispid-villous and usually appressedly so and canescent; leaves linear to linear-lanceolate or oblong-lanceolate, 1–4 (–5) cm. long, 2–4(–5) mm. broad, acutish, sessile by a broad usually cordulate or rounded base, more or less pustulate; spikes solitary or geminate, bractless, 3–12 cm. long, becoming remotely flowered; fruiting calyx ovate or ovate-oblong, 3–5 mm. long, contracted below into a short stout and angled pedicellate base; mature calyx-lobes lanceolate or linear, erect with tips more or less spreading, densely or at times sparsely appressed hispid-villous, the midrib prominent below middle and more or less hirsute; corolla evident, 5–6 mm. broad, white; fruit 4-ovulate; nutlets 4, homomorphous or somewhat heteromorphous with the axial nutlet (always the most persistent) slightly the largest and dullest, 1.5–1.9 mm. long, tuberculate or papillate, obscurely granulate, sometimes sparsely stipitate-glandular, apex acute, base truncate or obtuse, sides angled, back convex or obscurely obtuse; groove narrow or closed, usually with a small areola at the broad basal fork; gynobase $\frac{2}{3}$–$\frac{3}{4}$ height of nutlets; style very much surpassing the nutlets and about twice length of gynobase.—Anal. Univ. Chile cxxi. 826 (1908) and Fl. Chile v. 231 (1910). *Eritrichum subamplexicaule* Ph. Fl. Atac. 39 (1860) and Viage Des. Atac. 25 and 213 (1860).

CHILE. ANTOFAGASTA: dry shrubby hillside, Cerro Peralès near Taltal, *Johnston 5633* (G); Paposo, Dec. 1853, *Philippi* (MS, TYPE; G, photo.); fertile belt on west slope of Cerro Yumbes, Paposo, *Johnston 5562* (G); slopes in fertile belt, El Rincon just north of Paposo, *Johnston 5543* (G); grassy slope in fertile belt above Aguada Panulcito, *Johnston 5475* (G); sheltered places, Aguada Panul, *Johnston 5448* (G); moist bench in quebrada, Aguada de Miguel Diaz, *Johnston 5416* (G); dune slope just southwest of Aguada de Miguel Diaz, *Johnston 5412* (G); dune slope just back of Punta Reyes below Aguada de Miguel Diaz, *Johnston 5411* (G).

A well marked species in its typical form, characterized by its very remarkable habit. The plant grows on the fog-bathed middle slopes of the hills fronting the sea. The long branches trail through the