THE GENUS CORETHROGYNE IN SOUTHERN CALIFORNIA

By MARGARET L. CANBY

This paper, presenting a revised classification of the genus Corethrogyne in Southern California, was worked out under the direction of Dr. Philip A. Munz of Pomona College. Many of the suggestions incorporated are his and to him are due thanks for obtaining reference material.

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Abbreviations used in citing specimens are:

Pomona College Herbarium.....(PC)
Gray Herbarium .....(G)
University of California Herbarium.....(UC)
Peirson Herbarium .....(FP)
Davidson Herbarium .....(AD)
California Academy Herbarium .....(CA)

Many specimens from outside our limits have been looked over in the preparation of this paper and the following general conclusions have been made. Two strictly northern species seem worthy of recognition: *C. californica* DC. and *C. leucophylla* (Lindl). I have seen authentic material of *C. obovata* Benth., *C. spathulata* Gray, and *C. caespitosa* Greene, and these appear to be synonomous with *C. californica*, having the same broad leaves, large heads and decumbent habit. Original material of *C. leucophylla* has not been available but the herbarium material labelled *C. leucophylla* seems to agree with the description in DC., Prodr. 5:278, 1836. It has very small, hoary, obovate, rather thick leaves and tomentose involucres and is low and spreading. *C. tomentella* (H. and A.) T. & G. is synomous with *C. leucophylla*. All other plants in the genus fall into *C. filaginifolia* of which the var. *typica* is a coastal form extending southward from Monterey to Santa Barbara. *Rigida* as a varietal name has been referred to Bentham, Pl. Hartweg., 316, 1849 (*C. incana* var.? rigida), but his use of the word "rigida" was as a descriptive adjective (as Heller Muhlenbergia 2:256. 1906, points out), so that the name *virgata* applies to the glandular coastal form of *C. filaginifolia*, as the oldest name for that concept. *C. viscidula* Greene is a synonym of *C. filaginifolia* var. *virgata*. *Rigida* was made by Gray to include also the common mountain form, but since this is quite distinct from the coastal plant, Greene's name *brevicula* must be used.

Tomentum of uppermost parts deciduous by time of flowering.

Inflorescence glandular.

Involucres under 9 mm. high, glands short stipitate.

Plant short, generally under 4 dm.

Tomentose only around basal portion, not more than half way up the stem, the glandular portion bright green; San Antonio Mts.....5. *C. filaginifolia* var. *pinetorum.*

Tomentose at least half way up stem.

Involucres 7-9 mm. high; stems very stout, not erect; San Miguel Island.....6. *C. filaginifolia* var. *robusta.*

Involucres 6-7 mm. high; stems fairly slender, quite erect; mountain plants.....4. *C. filaginifolia* var. *brevicula.*

Plants tall, usually over 4 dm.

Tomentum extending up to involucre; inland valleys. .....3. *C. filaginifolia* var. *bernardina.*

Tomentum not extending to involucre but upper parts glandular.

Involucres turbinate to hemispheric; coastal.... ....2. *C. filaginifolia* var. *virgata.*

Involucres cylindrical, bracts squarrose, in 6 or more ranks; San Fernando to Saugus region. .....7. *C. filaginifolia* var. *Peirsoni.*

Involucres over 9 mm. high, with long stalked glands; heads numerous, hemispheric; coast of San Diego Co..... 8. *C. filaginifolia* var. *incana.*

Inflorescence scarcely if at all glandular; coastal.....1. *C. filaginifolia* var. *typica.*

Tomentum not deciduous at time of flowering.

Leaves linear; San Diego region.....9. *C. filaginifolia* var. *linifolia.*

Leaves not linear.

Involucres 8-12 mm. high, campanulate; leaves ovate to oblong to spatulate; San Bernardino Mts.....10. *C. filaginifolia* var. *sessilis.*

Involucres 7-8 mm. high, turbinate; leaves mostly broadly oblong; coast of Ventura Co.....11. *C. filaginifolia* var. *latifolia.*

TREATMENT OF VARIETIES*

1. Corethrogyne filaginifolia var. typica n. nom.

Aster filaginifolius H. and A., Bot. Beechey, 146, 1833. *C. filaginifolia* (H. and A.) Nutt., Trans. Am. Philos. Soc. ser. 2, 7:290. 1841. Torrey and Gray, Fl. N. Amer. 2:98. 1841. Gray in Bot. Calif., 1:320, 1876. Gray, Syn. Fl. 1, pt. 2:170, 1884. Hall, U. C. Pub. Bot. 3:70. 1907. Davidson and Moxley, Fl. So. Calif., 383 1923. Jepson, Man. Calif., 1042. 1925. *C. californica* D. C. var. *filaginifolia* Kuntze, Rev. Gen. Pl. 1:330. 1891.

Suffrutescent, slender, erect or ascending, 5-8 dm. high; tomentum tardily deciduous, upper parts scarcely if at all glandular; leaves lanceolate to ob-lanceolate, acute to obtuse, entire or toothed, upper ones sessile, 1-5 cm. long, 5-15 mm. wide; inflorescence paniculate with relatively few heads, each on a slender branch; involucre, broadly turbinate 7-9 mm. high, glabrate, bracts rarely recurved; rays violet, 8-10 mm. long.

Coastal, entering our region from the north. Abundant material seen from San Luis Obispo and Monterey Counties including a fragment of the type collection (G). From Santa Barbara County: Santa Barbara, *Brandegee in* 1889 (UC).

2. Corethrogyne filaginifolia var. virgata (Benth.) Gray in Bot. Calif. 1:321. 1876, Syn. Fl. N. Am. 1 pt. 2:170. 1884. Hall, U. C. Pub. Bot. 3:71. 1907. Davidson and Moxley, Fl. So. Calif., 383. 1923.

C. virgata Benth., Bot. Sulph., 23. 1844. Abrams, Fl. L. A. and Vic., 401. 1904 and 367. 1917. *C. filaginifolia* var. *rigida* of Jepson, Man. Calif. 1043, 1925 in part. *C. flagellaris* Greene, Leaflets Bot. Obs. 2:27. 1910. *C. floccosa* Greene, Leaflets Bot. Obs. 2:25. 1910. *C. californica* DC, var. *virgata* of Kuntze, Rev. Gen. Pl. 1:330. 1891. *C. lavandulacea* Greene, Leaflets Bot. Obs. 2:27. 1910. *C. filaginifolia* of Millspaugh and Nuttall, Field Mus. Bot. Ser. 5:267. 1923. *C. scabra* Greene, Leaflets Bot. Obs. 2:25. 1910.

Suffrutescent, stems slender, erect, 6-10 dm. high, tomentose below, usually shedding the tomentum above and becoming green and with short stipitate glands in whole upper portion; leaves linear-lanceolate, entire to oblong and serrate near tips, sessile with more or less clasping base or lowermost petioled, 1-6 cm. long, 2-20 mm. wide; inflorescence a diffuse panicle with numerous heads; involucre variable, generally turbinate (occasionally campanulate or hemispherical), 5-8 mm. high, bracts usually recurved, green, with numerous short stipitate glands; rays apparently violet, 6-9 mm. long.

*The collections referred to in the following references were not available for study and it was therefore impossible to determine just what varieties of *C. filaginifolia* are involved.

From Santa Cruz Island:

C. filaginifolia of Greene, Bull. Calif. Acad. Sci. 2:401. 1887.
Santa Rosa Island:

C. filaginifolia of Brandegee, Proc. Calif. Acad. Sci. ser. 2, 1:211. 1888.
Santa Cruz, Santa Rosa and San Miguel Islands:

C. filaginifolia of Brandegee, Zoe 1:138. 1890.
Catalina Island:

C. filaginifolia of Davidson, Erythea 2:30. 1894.

The variety was adequately distinguished from var. *typica* by Hall (U. C. Pub. Bot. 3:70. 1907) on the basis of stipitate glands in the inflorescence. It is the common plant along the coast from San Diego to Monterey and exhibits many variations but none clearly enough marked for nomenclatorial recognition. Material studied: San Diego Co.: Vicinity of San Diego, *Spencer* 12 (G, UC), *Wright* 123 (UC), *Reynolds in* 1897 (UC); San Diego, *K. Brandegee in* 1906 (UC), *Purpus in* 1898 (Po, UC), *Herre in* 1902 (Po); Canyon above Old Mission, *Spencer* 1342 (G); Ramona, *K. Brandegee in* 1903 (UC); North Island, San Diego, *Herre in* 1902 (Po); Linda Vista, *Macbride and Payson* 782 (G); Julian, *Dunn in* 1888 (UC); Palomar Mt., *Schellenger in* 1901 (UC). Orange Co.: Laguna Beach, *Crawford in* 1916 (Po); Balboa, *Peirson* 5087 (FP), *Johnston in* 1924 (Po). Los Angeles Co.: Ballona Harbor, *Abrams* 2177 (Po); Playa del Rey, *Abrams* 2981 (G, Po, UC); Santa Monica Exp't. Station, *Barber* 291 (UC); Santa Monica Mts., *Engelmann* 13 (G); Malibu, *Barber in* 1898 (UC); Los Angeles near Soldier's Home, *Adams in* 1905 (UC); Los Angeles, *Miss Palmer* (UC), *Braunton* 646 (UC); Elysian Park, Los Angeles, *Abrams* 4123 (G, Po), 4170 (G); Eagle Rock Canyon, *Peirson* (FP); San Gabriel Mts., Toll Road, *Peirson* 257 (FP); Lukens Peak, *Peirson* 229 (FP); Rubio reservoir, *Peirson* 126 (FP); Eaton Canyon, San Gabriel Mts., *Moxley* 514 (UC); Pomona, *Reed in* 1895 (Po); without locality, *Hasse in* 1890, type of *scabra* (US). Riverside Co.: Riverside, *Zumbro* 363 (UC). Santa Barbara Co.: San Ysidro, *Newell in* 1913 (G); Santa Barbara, *Elmer* 3856 (G, Po); Ellwood, *Eastwood* 217, type of *C. filaginifolia* var. *floccosa* (CA).

Under *C. filaginifolia* var. *virgata* also are to be cited specimens referred by Greene to *flagellaris*, since these specimens all seem to be off-season growth. Those taken latest in the season most nearly approach ordinary *virgata* and the locality is in the range of *virgata*. Los Angeles Co.: Redondo, *Braunton* 280, type of *C. flagellaris* (US), *Davy* 7772 (UC); Near Redondo, *Hall* 6723 (UC); Manhattan Beach, *Spalding* in 1924 (Po).

Extremes of variation in *virgata* are shown by: *Eastwood* 135 (G), which has linear leaves and tomentose stems and leaves up to the involucre, and the Peirson specimen from Eagle Rock, which lacks tomentum and has broad obovate leaves. The former approaches var. *linifolia*. *MacBride and Payson* 782 (G) from Linda Vista lacks tomentum, leaving the inflorescence a sticky green. *Abrams* 298 (UC) from Playa del Rey and *Abrams* 2177 (Po) from Ballona Harbor approach *C. filaginifolia* var. *pacifica* in size and shape of heads and stoutness of growth, but have not the very long stipitate involucral glands that characterize var. *pacifica*. *Moxley* 514 (UC) from Eaton Canyon represents a local variation, with broad oblong cauline leaves and very slender flowering branches with small heads. *Lyon* 7, in 1885 (G) from Eaton Canyon is the same.

Plants from Catalina Island seem best referred to var. *virgata*, although some are rather peculiar. *Eastwood* 6517 (CA) from the Isthmus has the involucres quite wooly, but with the narrow bracts of *virgata* rather than *linifolia*. Another *Eastwood* collection from the same place, *June* 10, 1918, (CA) is quite definitely *virgata*, as are: Avalon, *Trask in* 1901 (AD), *in* 1900 (US), *in* 1898, type of *C. lavandulacea* (US).

3. **Corethrogyne filaginifolia** var. **bernardina** (Abrams) Hall, U. C. Pub. Bot. 3:71. 1907. Parish, Pl. World 20:257. 1917. Davidson and Moxley, Fl. So. Calif., 383. 1923.

C. filaginifolia of Reed, Muhlenbergia 5:97, 1909. *C. virgata* var. *bernardina* Abrams Fl. L. A. and vic., 401. 1904 and 368. 1917. *C. filaginifolia* var. *rigida* of Jepson, Man. Calif., 1043. 1925, in part.

Suffrutescent, stems slender 5-9dm. high, rather persistently white tomentose except on involucres and upper parts of peduncles, "the exposed parts then glandular;" leaves oblong to lanceolate or oblanceolate, usually entire or serrate on upper half, blades 1-5 cm. long, 0.5-2cm wide; inflorescence a loose panicle or raceme with slender, rather long divaricate branches terminating frequently in single heads and rather conspicuously leafy bracted; involucres turbinate, 5-7mm. long with squarrose bracts; rays lavender, 7-9mm. long.

Material studied: CALIFORNIA, without locality, *Brandegee* (G), Los Angeles Co.; Los Angeles, *Miss Palmer* (UC), *Nevin in* 1880 (G); Pasadena, *Jones in* 1882 (Po), *McClatchie in* 1892 (UC). San Bernardino Co.: without locality, *Pringle in* 1881 (G), *Parish in* 1893 (UC); San Antonio Canyon, *Crawford in* 1915 (Po); near Claremont, *Munz & Harwood* 4380 (Po); Etiwanda, *Abrams* 2174 (Po); Lytle Creek Canyon, *Peirson* 4609 (FP); Mentone, *Abrams* 2931, type collection (G). Riverside Co.: Riverside, *Reed* 1980 (Po), *Hall in* 1899 (UC); Reche Canyon, *Zumbro* 31 (Po); Banning, *Toumey in* 1894 (UC).

4. **Corethrogyne filaginifolia** var. **brevicula.** (Greene) n. comb.

C. brevicula Greene, Leaflets Bot. Obs. 2:26. 1910. *C. filaginifolia* var. *rigida* Gray, Syn. Fl. 1, pt. 2:170. 1884 for plants from So. Calif. Hall, U. C. Pub. Bot. 3:72. 1907, in part. Parish, Pl. World 20:257. 1917, in part. Davidson and Moxley, Fl. So. Calif., 383. 1923, in part. Jepson, Man. Calif., 1043. 1925, in part. Not *C. rigida* (Gray) Heller, Muhl. 2:256. 1906. Not *C. incana* Nutt. var.? Benth., Pl. Hartweg., 316. 1849. *C. filaginifolia* Nutt. of Hall, U. C. Pub. Bot. 1:126. 1902. *C. filaginifolia* var. *glomerata* Hall, U. C. Pub. Bot. 3:72. 1907. Parish, Pl. World 20:257. 1917. Jepson, Man. Calif., 1043. 1925. *C. racemosa* Greene, Leaflets Bot. Obs. 2:26. 1910.

Stems stiff, erect, 2-4 dm. (6) high, ligneous only at very base; tomentum close, deciduous from inflorescence and upper part of stem at time of blooming, leaving the involucre and the bare or sparsely bracted peduncles glandular; leaves spatulate to obovate with clasping base, characterized by a yellow green color made somewhat gray by the tomentose investiture, upper leaves sessile 1-5cm. long, 4-15mm. wide, lower narrowed into petioles and somewhat longer; inflorescence generally a corymbose panicle, relatively few flowered; involucres 6-7mm. high, broadly turbinate, generally with recurved bracts; rays 10-12mm. long, violet to purplish.

A practically herbaceous variety of the pine belt, ascending to about 8000 ft. altitude and fairly frequent in all the mountains from the Southern Sierras to the Lagunas of San Diego County, except in the eastern part of the San Gabriel range where it is apparently replaced by var. *pinetorum*, and from which it differs in being tomentose higher in the plant. It is further characterized by its peculiar grayish green tinge, sometimes accompanied by a touch of olive, and by its rather closely placed obovate or spatulate lower leaves. It frequents dry slopes and benches under pines.

The following material has been studied:

San Diego Co.: Mountains near U. S. boundary, *Orcutt* 624 (G), *Orcutt in* 1889, apparently types of *C. brevicula* and *C. racemosa* (US); Campo, *Palmer* 140 (UC); Laguna Mts., *Munz* 8354 (Po), *Spencer* 936 (Po, G); Cuyamaca Peak, *T. S. Brandegee in* 1894 (UC); Palomar Mt., *Spencer* 935 (G), *Spencer* 992 (G, Po); Pine Hills, *Spencer* 296 (G, Po). Orange Co.: Santiago Peak, *Munz* 7739 (Po). Riverside Co.: San Jacinto Mts., Pine Flats, *Peirson* 5017 (FP), *Munz and Johnston* 8718 (Po); Poppet Flat, *Munz and Johnston* 8858 (Po); Strawberry Valley, *Hall* 2530 (UC); Idyldwild, *Jones in* 1924 (Po). San Bernardino Co.: Forest Home. *Robertson* 110, (UC), *Robertson* 121 (UC); Mill Creek, *Munz* 7584 (Po), *Peirson* 4736 (FP); Santa Ana River, *Munz* 6245 (Po, UC); South Fork Santa Ana River, *Munz* 6245 (Po, UC), *Peirson* 3268 (FP); San Bernardino Mts., *Jones in* 1923 (Po); San Antonio Canyon, *Peirson* 2751 (FP). Los Angeles Co.: Mt. Wilson, *Davidson* 1995 (AD). Ventura Co.: Seymour Creek, Mt. Pinos, *Baldwin* 107 (UC). Kern Co.: Tehachapi, *Eastwood in* 1894 (G, UC).

The following material is more or less intermediate between *C. filaginifolia* var. *brevicula* of higher altitudes and *C. filaginifolia* var. *bernardina* of the valleys: San Bernardino Co.: Spring Hill, San Antonio Mts., *Munz* 6419 (Po). Riverside Co.: San Gorgonio Pass, *Wright* 6 (G); Banning, *Gilman* 34 (UC), *Munz and Johnston* 8713 (Po).

5. **Corethrogyne filaginifolia** var. **pinetorum** Johnston, Bull. So. Calif. Acad. 18:21. 1919. Pl. World 22:119. 1919.

Herbaceous with several short, slender, sub-erect stems, 1-4.5 dm. high; lower leaves and ca. 1 dm. of base of stem densely permanently tomentose, whole upper portion bright oily green with dense stipitate glands; leaves obovate to oblanceolate, petioled or with clasping base, generally entire or serrate near tip, blades 0.5-3 cm. long, 3-8 mm. wide; inflorescence relatively simple, corymbose with few heads, the branching divaricate and monocephalous; involucres turbinate, 5-7 mm. high, bracts squarrose, rays purplish, 8 mm. long.

This local and sometimes ill-defined variety has been collected at elevations ranging from 4,300 to 5,500 ft. and largely replaces var. *brevicula* in its region. Material studied: Los Angeles Co.: Browns Flats, *Johnston* 2137, type collection (Po, UC); Upper San Antonio Canyon, *Johnston* 1644 (Po, UC); 1 mi. So. of Sunset Peak, *Johnston in* 1924 (Po, UC).

6. **Corethrogyne filaginifolia** var. **robusta** Greene, Pittonia 1:89. 1887. Hall U. C. Pub. Bot. 3:72. 1907. Davidson and Moxley, Fl. So. Calif., 383. 1923.

Stems stout, suffrutescent, somewhat depressed or ascending; floccose tomentum of stem and leaves deciduous only from inflorescence, peduncles then glandular; leaves numerous along entire length of stem, becoming rather conspicuous bracts in the inflorescence, sessile or more commonly petioled, broadly obovate to spatulate, entire or serrate at the tip, length 2-4 cm., width 0.5-1.7 cm., inflorescence a dense corymbose panicle; involucres hemispheric, involucral bracts linear, acuminate, 7-9 mm. long, 0.7-1 mm. wide, recurved, scarcely if at all glandular; rays 8-10 mm. long.

Material studied: Santa Barbara County: San Miguel Island, *Greene in* 1886, type collection (CA). The one specimen examined seems worthy of the varietal recognition Greene gives it on account of its stockiness, depressed habit, numerous broad leaves and recurring linear bracts that distinguish it from the mainland coastal form the var. *virgata* which it most nearly resembles.

7. Corethrogyne filaginifolia var. Peirsoni n. var.

Stems herbaceous, ligneous at base only, varying considerably in stoutness usually quite stout and spreading, 4-9 dm. high; tomentum deciduous only from upper parts or from more of the plant; leaves oblanceolate to obovate, serrate on upper half, 1-5 cm. long, 8-20 mm. wide; cauline leaves sessile, lower ones petioled and longer; inflorescence paniculate to virgate the non tomentose portions a dark green; involucres cylindric, diffusely glandular and somewhat scabrous, 7-8 mm. high; bracts squarrose, imbricated in about 6 or more ranks, viscid, glandular with stout stipitate glands; rays 9-11 mm. long, red violet in color.

Apparently a rather local variety of San Fernando Valley and vicinity. Amply characterized as a variety by the peculiar dark green color of the involucres and upper parts and by the red violet rays and the numerous squarrose bracts of the cylindrical involucres. The bracts have a tendency to continue on to the peduncle, as in *Munz* 7785 and *Pierson* 270.

Material studied: Los Angeles County: South side of Newhall Grade, *Canby* 13, (Po); Newhall, *Munz* 7785, Oct. 7, 1923; (type Pomona College Herbarium no. 18,222), *Peirson* 4159 (FP); 4 mi. n. of Saugus, *Canby* 11, (Po), 10 (Po); Ravenna, *K. Brandegee* (UC); San Gabriel Mts., Pacoima Canyon, *Peirson* 270 (FP); Bouquet Canyon, *Munz* 7788 (Po). *Munz* 7788, a peculiarly narrow leaved plant from Bouquet Canyon, has the inflorescence, etc. of *Peironi* and for want of more material is referred here. *Peirson* 270 of Pacoima Canyon does not look typical and is probably a shade plant.

8. Corethrogyne filaginifolia var. incana (Nutt.) n. comb.

C. incana Nutt., Trans. Amer. Philos. Soc., ser. 2, 7:290. 1841. Torrey and Gray, Fl. N. Amer., 2:98. 1841. Gray Syn. Fl. N. Amer., 1, pt. 2 170. 1884. *C. californica* DC var. *incana* Kuntze, Rev. Gen. Pl. 1:130. 1891. *C. filaginifolia* var. *tomentella* Gray in Bot. Calif. 1:321. 1876, for plants from So. Calif. *C. californica* of Gray, Syn. Fl. N. Amer. 1 pt. 2:70. 1884, for plants from So. Calif. *C. filaginifolia* var. *pacifica* Hall, U. C. Pub. Bot. 3:73. 1907; Davidson and Moxley, Fl. So. Calif, 383. 1923; Jepson, Man. Calif., 1043. 1925.

Plant stout, erect, much branched above, 5-8 dm. high, "tomentum floccose, deciduous from the branchlets and involucres at time of flowering;" leaves linear to narrowly lanceolate or oblanceolate, acute, entire or with few teeth, 2-5 cm. long, 2-8 mm. wide; inflorescence an open panicle with numerous large heads, peduncles and involucres conspicuously glandular with long-stalked glands; involucres, hemispheric 10-12 mm. high; bracts imbricated, linear, acuminate, scarcely if at all recurved, "greenish except at chartaceous and strongly nerved base;" rays violet or purple, 11-12 mm. long.

Known from but few collections along the coast in San Diego County. At first glance the large hemispheric heads of this plant seem indicative of specific rank but study of a number of specimens soon reveals intergrades with *virgata* and *linifolia*. To this variety the

following material may be referred: Pacific Beach, *Purpus in* 1899, (1898?), type collection of *pacifica* (G, Po, UC); Del Mar, *K. Brandegee in* 1906 (UC); southern part of San Diego County, *Palmer in* 1875 (G); San Diego, *Parry* 1850 (G). The following specimens probably represent spring collections and are not typical of *incana* in the lack of branching in the inflorescence and in the presence of some tomentum in the involucre but by virtue of their large hemispherical heads and peculiar stalked glands they must be referred here; San Diego, *Nuttall*, type collection of *incana* (G), *Cooper in* 1860-61 (G).

Since Nuttall's specimen of *incana* without doubt applies to the same concept as Hall's *pacifica*, and since *incana* was used as a varietal name long before *pacifica*, it must be used.

9. **Corethrogyne filaginifolia** var. **linifolia** Hall, U. C. Pub. Bot. 3:71. 1907. Davidson and Moxley, Fl. So. Calif., 383. 1923. Apparently Jepson, Man. Calif., 1042. 1925, in part.

Herbaceous or apparently suffrutescent, erect, 2-4 dm. high; permanently hoary tomentose throughout including involucres; leaves, "crowded below, more scattered above, all narrowly linear, 2-5 cm. long," 1-2 (5) mm. wide; inflorescence with heads solitary on simple stems or on spreading branches; involucres broadly turbinate, 8-10 mm. high; bracts with spreading tips, imbricated in 5 ranks; rays violet, 6-8 mm. long.

Material studied: San Diego Co.: San Diego, *Spencer* 35 (G, UC); Del Mar, *K. Brandegee in* 1906 (G, UC); Torrey Pines, *Collins and Kempton* 211 (US); Encinitas, *T. S. Brandegee in* 1894 (UC). A collection from Point Loma, *Hall* 8324 (G, Po, UC) has the narrow woolly leaves of *linifolia* but involucres and upper parts of stem are as green and glandular as in any *virgata;* it is quite intermediate between the two varieties.

10. **Corethrogyne filaginifolia** var. **sessilis** (Greene) n. comb.

C. sessilis Greene, Leaflets Bot. Obs. 2:25. 1910. *C. filaginifolia* var. *rigida* of Parish, Pl. World 20:257. 1917, in part. *C. filaginifolia* var. *latifolia* of Jepson, Man. Calif., 1042. 1925 for San Bernardino Mts.

Herbaceous, scarcely if at all suffrutescent, frequently rather stout especially in exposed positions; densely and rather permanently tomentose on stems and involucres; height 1.5-7 dm.; leaves ovate to oblong-ovate to spatulate, entire or serrate at tip, grayish green to almost whitish in color, sessile (sometimes by broad clasping base) or lowermost petioled; blades 1-4 cm. long, 0.5-2 cm. wide; inflorescence varying from virgate on rather stout axis to open and spreading on a slender axis; peduncles when evident, commonly monocephalous and sparingly leafy-bracted; involucres campanulate, 8-12 mm. high, its bracts closely imbricated in about five series, with somewhat spreading tips and invested with a permanent somewhat floccose tomentum; rays violet, 10-12 mm. long.

Abundant on dry, open hillsides and under pines in Upper Sonoran and Transition Zones of San Bernardino Mountains from about 4,000 to 7,500 ft. altitude. Apparently taking on two forms, the typical, stout, densely tomentose virgate plant of open places and the more slender loosely branched, rather thinly tomentose one from shade. Amply characterized as a variety by its tomentose involucre, long rays, sparingly bracted peduncles and ovate to spatulate leaves. The following material is referred to this variety: without locality, *Hall* (UC). San Bernardino Co.: "San Bernardino," *S. B. and W. F. Parish* 1015 (UC); San Bernardino Mts., *Parish* 2233, 23rd Oct. 1891,

apparently type collection (UC), *Parish*, Oct. 22, 1891 (Po); Santa Ana River, *Munz* 6333 (Po, UC), *Munz* 6334 (Po, UC); Little Bear (Arrowhead Lake) *Wilder* 390 (Po); Arrowhead Grade, *Canby in* 1925 (Po); City Creek, *Jones in* 1925 (Po); Black Oaks in City Creek, *Jones in* 1925 (Po); Strawberry Flats, *Canby in* 1925 (Po); Bluff Lake, *Williams in* 1902, (UC); Deep Creek, *Johnston in* 1924, (Po); No. Fork Deep Creek, *Johnston* 2913 (Po); Fish Camp, *Johnston in* 1924, (Po); Bear Lake, *Jones in* 1925 (Po); Bear Valley, *Jones in* 1906 (Po); Fredalba, *Johnston in* 1924 (Po).

The two following collections from lower altitudes suggest variety *bernardina* and may be considered as intergrade between *sessilis* and *bernardina*: (1) City Creek at 1800 ft. altitude, *Johnston in* 1924 (Po), with stems, leaves and woolly involucres suggesting *sessilis* and small heads and leafy bracted peduncles suggesting *bernardina*; (2) Arrowhead Hot Springs, *Johnston in* 1924 (Po), suggesting *sessilis* in tomentum on involucres and *bernardina* in general appearance and habit.

11. **Corethrogyne filaginifolia** var. **latifolia** Hall, UC. Pub. Bot. 3:70. 1907. Davidson and Moxley, Fl. So. Calif., 383. 1923. Not of Jepson, Man. Calif., 1042. 1925.

Stems suffrutscent, stout, "5 dm. or more high," tomentose throughout, even on involucres; "lower leaves narrowed to base principal cauline leaves broadly oblong or slightly narrowed to the closely sessile base, shallowly toothed at the very obtuse summit," 1-4 cm. long, 0.5-1 cm. wide; inflorescence paniculate with few heads; involucres turbinate, 7-8 mm. high; bracts with slightly spreading tips; rays conspicuous, 10 mm. long.

Material studied: Ventura Co.; Oxnard, *Davy*, 7813 (UC), *Davy* 7814, (UC). Los Angeles Co.: "Los Angeles," *Nevin in* 1880 (G).

This coastal variety can be distinguished from our other Southern California forms with woolly involucres by its broad oblong leaves and northern coastal distribution. An off season specimen, "Los Angeles," *Gray in* 1885 (G) taken between February and May seems to belong here on basis of leaf shape but the involucre is only partially tomentose.

BOTANICAL FIELD NOTES

DR. A. DAVIDSON

Arenaria californica Brewer. Hills near Tehachapi. *Kessler.*

Sedum pumilum Benth. Abundant on the hills near Keen. *Kessler.*

Draba subsessile Wats. Mountains on S. fork of Bishop Creek, Inyo Co. *Kessler.* Previously collected in the White Mts. and on Mt. Whitney. Identified by Prof. E. B. Payson.

Ivesia Chandleri Rydb. Thomson Mts., Bishop Creek. *Kessler.* Only other known locality Mt. Goddard. Identified by Mr. Rydberg.

Vaccinium ovatum Pursh. San Marcus Pass. *Payne.*

Loiseluria flaviflora Davidson. Colorado Desert. *Mrs. S. Hutchinson.*

Oxtheca luteola Parry. Not uncommon around the dry lakes near Muroc. Hitherto only known from Lancaster.

Orobanche Ludoviciana. Nutt. Mt. Islip. *Burlew.*

Prunella vulgaris lanceolata Fernald. Mt. Islip. *Burlew.*

Zygophyllum Fabago Var. brachycarpa Bois. A native of N. Africa growing freely in an irrigation ditch along with **Centaurea repens** L at a ranch a few miles east of Rosamund. A new introduction in this country.