

coloradoensis); Kaibab Plateau near Jacob's Lake, *Eastwood & Howell 6413* (CAS); Cliff Spring near Cape Royal, *F. W. Peirson 7430* (CAS).

NEW MEXICO. McKinley Co.: Manuelito, *Ripley & Barneby in 1943* (RB, sterile, but apparently referable here rather than to var. *neomexicanus*).

The var. *elatus* is characterized by its bushy habit, with developed, rigid, annual stems arising from a branched suffruticose caudex. Often the central stems of a plant will be erect and the outer ascending or reclining, but occasionally, on steep gravel slides, all may become diffuse and trailing. In these cases, and when the pod is lacking, specimens are not easy to distinguish from var. *Jessiae*, although the long internodes commonly betray their identity. It is almost never misidentified in herbaria.

The type of var. *coloradoensis* is remarkable, indeed unique in my experience, for its large pod, about 1 cm. long. It may perhaps represent a distinct race from low elevations along the canyons of the Colorado, but other material that I have seen from the region has all been in flower only. The stipules are not all "free," as claimed by Jones; indeed are no different from the normal state in fruiting var. *elatus*.

The recurrence of the variety in the Columbia Basin, at points over 400 miles northwest of the nearest station in Nevada, is surprising. One might expect here a distinct race, and a better acquaintance with these northerly plants will be required before their status can be established. The Douglas plant that I have seen from "Oregon" is only the tip of a branch, but bears a lance-acuminate and slightly arched pod quite like that of var. *elatus*. See also St. John, Fl. S. E. Wash. 219 (1937); and Howell, Leaflet West. Bot. 2: 75 (1938).

CRYPTANTHA CIRCUMSCISSA IN THE SIERRA NEVADA

BY JOHN THOMAS HOWELL

Cryptantha circumscissa (H. & A.) Jtn., like some other widespread species and species-groups in western North America, is relatively uniform in its morphology over a vast area until it reaches and ascends the Sierra Nevada. This species, which is readily distinguished from other species of *Cryptantha* by its circumscissile fruiting calyx, occurs from "southern British Columbia and Idaho, southward to Arizona and northern Lower

California" (Johnston, Contrib. Gray Herb. n. ser. 74: 41), and, although it is somewhat variable in habit, flowers, and fruits, the variations mostly lack correlation and geographic alignment and so seem to have little or no taxonomic significance. Along the east side of the Sierra Nevada and on its southerly slopes, however, *C. circumscissa* develops two minor variants that have distributional significance and should be recognized by name.

One of these, var. *hispidula* (Macbr.) Jtn., is characterized by conspicuous bristly hairs on the stems and leaves, the hairs on the typical form of the species being more appressed. This plant was originally described from western Nevada as a species, *Krynitzkia dichotoma* Greene, but as Johnston has remarked (op. cit. p. 42), "this hirsute form is best treated as a geographical variety." It occurs from the region northeast of Lake Tahoe in Nevada, south in California to Tulare and Kern counties, with outlying stations in the Mohave Desert (acc. Jepson, Fl. Calif. 3: 332, under *Greeneocharis*) and on the west slope of the Sierra Nevada in Fresno County. Several years ago, I wrote a brief note establishing an altitudinal limit of 10,400 feet for this variety (Leaflet West. Bot. 4: 169,—1945), but in July, 1950, P. A. Munz and I found it growing on the summit ridge of Olancho Peak above timberline at 12,000 feet.

The second variant appears to be undescribed. It is a diminutive plant of sandy slopes and flats from timberline forests to alpine summits, and as it is now known it is restricted to the southern Sierran crest from Army Pass south to Olancho Peak in Inyo and Tulare counties. It was first discovered by Dr. Munz and me on the Sierra Club Base Camp outing in 1949, and we found it again in 1950 on Olancho Peak where it grew only a short distance from var. *hispidula*. The new variety is distinguished by its small size, dense habit, oblanceolate leaves, and short style. In the character of its pubescence, it is like typical *C. circumscissa*, the hairs on the stems and leaves being more or less appressed.

Typical *C. circumscissa*, with relatively open somewhat spreading or erect habit and subappressed pubescence, is a rare plant in the Sierra Nevada, being known from only a half dozen Sierran stations from Sierra County on the north to Inyo and Tulare counties on the south. According to Jepson, the species reaches an altitude of 7500 feet, but on the 1950 Sierra Club Base Camp outing, the plant was found by G. Ledyard

Stebbins, Jr., and Peter Raven on the slope of Table Mt. near Lake Sabrina, Inyo County, at 9500 feet.

The taxonomic and distributional details relating to these plants are summarized in the following synopsis. The Sierran specimens cited are in the Herbarium of the California Academy of Sciences. For synonymy, see Johnston, *Contrib. Gray Herb.* n. ser. 74: 41, 42.

KEY TO THE VARIETIES OF *CRYPTANTHA CIRCUMSCISSA*

1. Pubescence substrigose, the hairs on stems and leaves more or less appressed 2
1. Pubescence subhirsute, the hairs (or many of them) on stems and leaves spreading 1c. var. *hispida*
2. Plants larger and more loosely branched, stems usually more than 2 cm. long; leaves narrowly oblongish or linear; styles nearly as long as the nutlets or equaling them 1a. var. *circumscissa*
2. Plants small and compact, stems 2 cm. long or less; leaves oblong-ob lanceolate; styles $\frac{2}{3}$ – $\frac{3}{4}$ as long as the nutlets 1b. var. *rosulata*

1a. *CRYPTANTHA CIRCUMSCISSA* (H. & A.) Jtn. var. *CIRCUMSCISSA*. Rare in the Sierra Nevada where plants occur on arid slopes, generally east of the crest, 5000–9500 ft.; north to British Columbia (acc. Johnston), south to Lower California, east to Idaho, Utah, and Arizona; Argentina (acc. Jepson).

Sierran collections seen or reported: Chilcoot, Sierra Valley, 4995 ft., Plumas Co., *L. S. Rose 34416*; Beckwith Pass, Lassen Co., acc. Jepson; Tioga Road, about 8300 ft., Mono Co., acc. Johnston; Table Mt. near Lake Sabrina, 9500 ft., Inyo Co., *Stebbins & Raven 52*; in pinyon belt above Sage Flat, 6500 ft., Inyo Co., *Howell in 1950*; Volcano Creek and Lloyd Meadows, Tulare Co., acc. Jepson.

1b. *Cryptantha circumscissa* (H. & A.) Jtn. var. *rosulata* J. T. Howell, var. nov. Annuae parvae compactae caulibus foliis floribusque conferte rosulatis vel raro paulum aperte ramosae; caulibus 0.5–2 cm. longis, strigosis pilis subappressis; foliis oblanceolatis vel anguste oblongo-oblanceolatis, strigosis, apice 1 vel 2 trichomatibus magnis; calyce tarde circumscisso; corolla 1.5–2 mm. longa, lobis circa 0.5 mm. longis; nuculis laevibus nitentibusque, 1.5–1.75 mm. longis, stylo $\frac{1}{4}$ – $\frac{1}{3}$ longioribus.

Type: Herb. Calif. Acad. Sci. No. 361616, collected in granitic sand near timberline, Cottonwood Lakes, 11,200 ft. alt., Inyo Co., Aug. 12, 1949, *Howell 26227*.

Other collections, all from California and all except the first from Tulare County: Cottonwood Lakes, 11,200 ft., Inyo Co., *Howell 25471*; above timberline at summit of Army Pass, 12,000 ft., *Howell 26200*; Siberian Pass Creek, 11,000 ft., *Howell 25743*; Whitney Meadows, 9700 ft., *Howell 25830*; Olancho Peak, summit ridge above timberline, 12,000 ft., *Howell 27234*.

1c. *CRYPTANTHA CIRCUMSCISSA* (H. & A.) Jtn. var. *HISPIDA* (Macbr.) Jtn. Sandy or gravelly slopes, 5000–12,000 ft., from Nevada Co., California, and Washoe Co., Nevada, south to Inyo and Tulare counties, California, in the north found only east of the crest, in the south on both slopes of the Sierra Ne-

vada; east to Virginia City, Storey Co., Nevada (*Eastwood 14823*), south in California to Erskine Creek (acc. Johnston, l.c., p. 42) and Mohave Desert (acc. Jepson).

Sierran collections seen. NEVADA: between Boca and Verdi, Washoe Co., *Curran in 1884* (type of *Krynitzkia dichotoma*); Verdi, Washoe Co., *Sonne in 1888*; Glenbrook, Douglas Co., *L. S. Rose in 1930*.

CALIFORNIA. Mono County: pine woods 6 miles south of Crestview, *Howell 25272*; Convict Lake, *L. S. Rose 35361*. Inyo County: Rock Creek Lake Basin, *Peirson 9485*; Coyote Ridge, *Stebbins & Raven 180*; Big Pine Lakes Trail, 9500–10,000 ft., *Howell 24045*; Little Cottonwood Creek, 9800 ft., *Howell 25431*; Jeffrey pine belt, Wonoga Peak, 9000–9500 ft., *Howell 25409*; Summit Creek east of Olancha Pass, 9300 ft., *Howell 26747*. Fresno County: Kaiser Peak, *Pollard in 1943*. Tulare County: trail to Mt. Whitney, 10,000 ft., *Culbertson 4243*; Rock Creek, 10,000–10,400 ft., *Howell 26110*; Whitney Meadows, *Howell 25766*; Monache Meadows, *Howell 27071*; Hessian Meadows, *Howell 27098*; Olancha Peak, on summit ridge above timberline, 12,000 ft., *Howell 27245*.

THE STATUS OF ENCELIA ANGUSTIFOLIA AND E. ALBESCENS

BY S. F. BLAKE

ENCELIA ANGUSTIFOLIA Greenm., Proc. Amer. Acad. 39:110 (1903); Blake, l.c. 49:371 (1913).

This species from the Sierra Madre, Tepic (now Nayarit), Mexico, continues to be known only from the type, collected by Dr. J. N. Rose on 13 Aug. 1897. The characteristically scanty original specimen, consisting of a root bearing 3 stems of the year, 2 of them terminating in solitary heads, was divided between the U. S. National Herbarium and the Gray Herbarium. The heads are in rather young flower, and consequently do not reveal the character of the mature fruit. The young achenes are villous on the margins and slightly pubescent on the side, with a pappus of 2 antrorse-pubescent awns about their own length. They have a thin aliform margin, suggesting the wing that is characteristic of the achenes of the related genus *Verbesina*, but since the same feature can be shown by young achenes of *Encelia* its presence is not of real significance. The style branches, however, instead of being relatively short and with short, deltoid, obtuse to barely acutish appendages, as in *Encelia*, are relatively long and have the appendages drawn out into an acuminate hispidulous tip, precisely as in *Verbesina*. For this reason I have