



6-30-1972

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Recommended Citation

Reveal, James L. (1972) "Five new varieties of *Eriogonum* (Polygonaceae)," *Great Basin Naturalist*: Vol. 32 : No. 2 , Article 8.
Available at: <https://scholarsarchive.byu.edu/gbn/vol32/iss2/8>

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FIVE NEW VARIETIES OF *ERIOGONUM* (POLYGONACEAE)

James L. Reveal¹

As the first volume of Intermountain Flora: The Vascular Plants of the Intermountain West, by A. Cronquist, A.H. Holmgren, N.H. Holmgren, and J.L. Reveal, nears completion, a number of minor nomenclatural changes are needed for the introductory material in the first volume. Here, five new varieties of *Eriogonum* (Polygonaceae) are proposed, described, and discussed.

Eriogonum brevicaule Nutt. var. *cottamii* (S. Stokes) Reveal, COMB. NOV., based on *E. tenellum* Torr. ssp. *cottamii* S. Stokes, Gen. Eriog. 70. 1936.

Plants 1-3.5 dm tall; *leaves* narrowly oblanceolate to narrowly elliptic, the leaf-blade 3-7 cm long, 3-5 mm wide, densely tomentose on both surfaces, the margin plane or with thickened edges, not revolute; *flowering stems* erect, 0.5-2 dm long, tomentose, the tomentum grayish when young, becoming tannish- to reddish-brown at maturity; *inflorescences* cymose, open, 3-7 cm long, tomentose; *peduncles* lacking; *involucres* turbinate, 2-3 mm long, 1.5-2 (2.5) mm wide, tomentose; *flowers* yellow, 3-4 mm long.

TYPE.— Canyons in bottoms of the slopes on West Mountain, Utah Co., Utah, at 4500 feet elevation, 20 August 1925 (misquoted as 1924 in the original description), *Cottam* 411. Holotype, BRY! Isotype, UT!

DISTRIBUTION.— Infrequent on dry gravelly limestone slopes and clay hills in central Utah from eastern Tooele and Juab cos. to western Utah Co. Flowering from June to September.

The var. *cottamii* is an easily distinguished entity in the Utah Buckwheat flora. It differs from var. *brevicaule* in having densely tomentose stems, and from var. *laxifolium* (Torr. & Gray) Reveal in having a cymose inflorescence instead of a capitate or subcapitate one. The southwestern Wyoming phase of the species, var. *micranthum* (Nutt.) Reveal perhaps is most closely related to var. *cottamii*, the two differing in the color of their tomentum, flower size, and distribution.

Eriogonum brevicaule Nutt. var. *wasatchense* (M. E. Jones) Reveal, COMB. NOV., based on *E. wasatchense* M. E. Jones, Contr. W. Bot. 11:11. 1903.

Plants 3-5 dm tall; *leaves* narrowly elliptic, 1.5-4 cm long, (3) 4-7 mm wide, densely white-tomentose below, floccose above, the margin crenulate in most; *flowering stems* erect, 1-3 dm long, glabrous; *inflorescences* cymose, (8) 10-15 cm long, glabrous; *peduncles* rarely present; *involucres* turbinate, 3-4 mm long, 2-2.5 mm wide, glabrous; *flowers* white, 2-2.5 mm long.

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TYPE.— American Fork Canyon, Utah Co., 27 July 1880, *M.E. Jones* 1877. Lectotype, POM! Duplicates of the lectotype, BM, CAS, GH, MICH, POM, US, UTC!

DISTRIBUTION.— Infrequent on dry talus slopes and limestone outcrops along the western flank of the Wasatch Mountains from Davis Co. south to Utah Co., Utah. Flowering from June to September.

The var. *wasatchense* is perhaps the most distinct of the several variants within *Eriogonum brevicaulis*. It is quickly recognized by its cymose, glabrous inflorescence, glabrous stems and crenulate leaves sheathing up the lower portions of the stems, and the white flowers.

Eriogonum shockleyi S. Wats. var. *longilobum* (M.E. Jones) Reveal, COMB. NOV., based on *E. longilobum* M.E. Jones, Proc. Calif. Acad. Sci. II, 5:720. 1895.

Low, pulvinate, matted herbaceous perennials forming a dense mat (1) 2-4 dm across; *leaves* in rather loose rosettes, the leaf-blade oblanceolate to spatulate, (3) 5-8 (12) mm long, (2) 3-6 mm wide; *flowering stems* up to 3 cm long, tomentose; *involucres* (3) 4-6 (7) mm long, the lobes (1) 2-3 (3.5) mm long; *flowers* white, 3-4 mm long; *achenes* mostly densely pubescent.

TYPE.— Near Price, Carbon Co., Utah, 4 July 1894, *M.E. Jones* 5590j. Holotype, POM! Isotype, US!

DISTRIBUTION.— Dry clay flats and lower slopes in eastern Utah from Duchesne and Uintah cos. southward to northern Arizona in Coconino, Navajo and Apache cos., and in western Colorado from Moffatt and Mesa cos. south to San Juan Co., New Mexico. Flowering from May to July.

In the past, three forms within *Eriogonum shockleyi* have been maintained. However, as additional material has been collected and field studies made on the species since 1965, the distinction between var. *shockleyi* and the form named *candidum* by Stokes (1936) became less clear. It now appears impossible to maintain the yellow-flowered phase (*candidum*) as a separate entity from the white-flowered phase (*shockleyi*) due to a series of pale-yellow populations across central Nevada. The third element, var. *longilobum*, can still be recognized, based on the characteristics outlined below.

- A. Leaves 2-5 (6) mm long, 2-4 mm wide; involucres 2-3.5 mm long, the lobes 0.5-1.8 (2) mm long; flowers white or yellow, 2.5-3.5 (4) mm long; Inyo Co., California, eastward across central Nevada to western Utah and southern Idaho var. *shockleyi*
- AA. Leaves (4) 5-12 mm long, 2-6 mm wide; involucre (3.5) 4-6 mm long, the lobes (1.5) 2-3 mm long; flowers white, 3-4 mm long; eastern Utah and western Colorado south to northeastern Arizona and extreme northwestern New Mexico var. *longilobum*

Eriogonum ovalifolium Nutt. var. *caelestinum* Reveal, var. nov. A var. *nivale* (Canby in Cov.) M.E. Jones et var. *depressa* Blank. floribus flavis demum rubro-tinctis, involucris solitariis differt.

Low densely caespitose herbaceous perennials forming a mat 0.5-1 dm across; *leaves* in densely congested basal rosettes, the leaf-blade mostly elliptic, 2-5 mm long, 1.5-3 mm wide, thinly greenish-tomentose on both surfaces with a tannish margin, the petiole 1-3 mm long, thinly pubescent; *scapes* 1-6 cm long, thinly floccose; *involucres* solitary or very rarely in pairs, turbinate-campanulate, 2-2.5 mm long; *flowers* yellow, maturing red or reddish-tinged in most, 2.5-3 mm long.

TYPE.— South fork of Pine Creek on the upper ridges of the Toquima Range, Toiyabe National Forest, Nye Co., Nevada, from 10,900 to 11,800 feet elevation, 23 July 1964, *Reveal* 629. Holotype, US! Isotypes, ARIZ, BRY, CAS, DS, GH, MO, NY, OKL, RM, RSA, UC, UT, UTC, WTU! Distributed as *E. ovalifolium* Nutt. var. *nivale* (Canby in Cov.) M. E. Jones.

ADDITIONAL SPECIMENS EXAMINED.— Head of Pine Creek Canyon, Toquima Range, 11,000 feet elevation, 16 July 1945, *Maguire & Holmgren* 25805 (NY, US, UTC).

This lovely addition to *Eriogonum ovalifolium* has been known to me for several years, but its distinctiveness has not become obvious until the late 1960s. At first, the yellow flowers were considered to be a common feature of the Nevada populations of *E. ovalifolium* var. *nivale*, but the fact was that no other mountain ranges harbored the yellow-flowered phase. This realization came only after most of the high mountain ranges of central Nevada were carefully surveyed as part of the Intermountain Flora Project. Thus, the Toquima Range has another endemic species and can join *Astragalus toquimanus* Barneby, *Draba arida* C. L. Hitchc., *Smelowskia holmgrenii* Roll., and an as yet undescribed *Geranium*.

Eriogonum umbellatum Torr. var. *devestivum* Reveal, var. nov. A var. *stellata* (Benth.) M. E. Jones foliis late ellipticus et omnibus glabris vel marginibus non nisi pubescentis differt.

Plants forming a large open mat up to 6 dm across; *leaves* in loose, \pm basal rosettes, the leaf-blade broadly elliptic, 1.5-2 cm long, glabrous on both surfaces or with the margin slightly pubescent in some, on a long slender petiole; *flowering stems* erect, slender, 1.5-2 dm long, thinly floccose to glabrous; *inflorescences* compoundly umbellate, 5-15 cm long with foliaceous bracts at the base of each division, the branches thinly floccose or more commonly glabrous; *peduncles* slender, 0.5-2 cm long, essentially glabrous, *involucres* with tubes 2-3.5 mm long, the reflexed lobes 1-2.5 mm long, glabrous; *flowers* bright yellow, 4-7 mm long including the stipe.

TYPE.— On sagebrush covered hills 10 miles south of Council along U.S. Highway 95, Adams Co., Idaho, 21 June 1966, *Holmgren & Reveal* 2746. Holotype, US! Isotypes, BRY, CAS, NY, RSA, UTC, WTU!

DISTRIBUTION.— Locally common and sporadic from Adams and Washington cos. eastward to Blaine Co., Idaho. Flowering from June to August.

The var. *devestivum* forms a similar aspect of the species expression as seen between var. *umbellatum* and var. *aureum* (Gand.) Reveal. The leaves are totally glabrous (the margins excepted in some cases). However, unlike the relationship between var. *umbellatum* and var. *aureum* in which the latter simply replaces the former at higher elevations throughout much of the range of var. *umbellatum*, there are a number of minor morphological differences between var. *stellatum* (Benth.) M. E. Jones and var. *devestivum*. The most obvious differences are the highly branched inflorescences of the new variety, the wider leaves, and the longer petioles. While the entire range of the new entity remains to be fully ascertained, it appears that var. *devestivum* occurs a bit to the east of the majority of the populations of var. *stellatum*, although it still forms a pocket within the overall distribution of var. *stellatum*.

ACKNOWLEDGMENT

Fieldwork was conducted under the sponsorship of a National Science Foundation grant to Arthur Cronquist for the Intermountain Flora Project. Herbarium studies were conducted, in part, under the auspices of National Science Foundation grant GB-22645 for studies of the genus *Eriogonum* and of the Intermountain Flora.

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