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## A NEW PULVINATE *ERIOGONUM* (POLYGONACEAE) FROM UTAH<sup>1</sup>

James L. Reveal<sup>2</sup>

ABSTRACT.— A new species of pulvinate wild buckwheat, *Eriogonum soredium* (Polygonaceae, Eriogonoideae) is described from near-barren limestone slopes in the Grampian Hill area near Frisco, Beaver County, Utah. The new species is outwardly similar to *E. shockleyi* S. Wats. but may be readily distinguished by its glabrous (not pubescent) flowers and fruits, generally smaller leaves, more numerous involucre per head, turbinate (not campanulate) involucre with 5, rarely 4 (not 5 to 10) teeth, and the smaller flowers.

Botanical explorations in the Intermountain Region as part of the general survey for rare and restricted vascular plants continue to reveal new, localized species heretofore unknown. The present discovery represents one of many new species to be found by Dr. Stanley L. Welsh of Brigham Young University and those associated with his investigations of the endangered and threatened flora of Utah.

*Eriogonum soredium* Reveal, sp. nov. A *E. shockleyi* floribus et fructibus glabris differt.

Low, matted herbaceous perennial with numerous dense rosettes of leaves forming a dense, compact mat 1–3 dm across, the caudex with numerous branches, the upper portion densely matted with persistent leaves and petiole-bases, arising from a stout, woody taproot; leaves clustered, persistent, forming tight, compact rosettes of numerous leaves, the leaf-blade narrowly elliptic to narrowly oblong, (2) 2.5–4.5 (5) mm long, (0.7) 1–1.8 (2) mm wide, densely whitish-tomentose on both surfaces, the apex blunt and rounded or sometimes broadly acute, the base cuneate, the margin entire, rolled and thickened but not revolute, the petiole short, 0.5–2 (3) mm long, densely white-tomentose, the petiole-base narrowly elongated, (0.5) 1–3 mm long, 0.4–0.5 mm wide, densely white-tomentose without, glabrous and tannish within; *flowering stems* erect or nearly so, scapose, 2–8 mm long, tomentose in anthesis but becoming less so at maturity; *inflorescences* capitate, the head 4–8 mm across; *bracts* 6–8, lanceolate

to narrowly triangular, 1.3–1.6 (1.8) mm long, tomentose without, glabrous within, distinct and not at all fused basally; *involucres* 4–6 per head, turbinate, 2 mm long, 1.3–1.5 mm wide, densely tomentose without with long tangled white hairs especially along the teeth and margin of the tube, glabrous within except for along the very margin, the (4) 5 erect, triangular and acute teeth 0.5–0.6 mm long, with a well-defined hyaline but pubescent membrane between each tooth, the bractlet linear-oblongate, 2–2.5 mm long, densely pubescent, especially apically, with long tangled hairs, less pubescent and with shorter gland-tipped hairs below, the pedicel long, 2–2.5 (3) mm long, glabrous; *flowers* white with reddish bases and midribs, (1.5) 2–2.5 mm long, glabrous without, sparsely glandular especially along the midrib within, the tepals slightly dimorphic, those of the outer whorl broadly obovate, 2.5–3 mm long and 1.6–2 mm wide when flattened, mostly spreading to recurved in anthesis and fruit, the apex broadly rounded and often emarginate, those of the inner whorl narrowly obovate, 2 mm long and 1.5 mm wide when flattened, mostly spreading in anthesis and fruit, the apex broadly rounded to truncate and often emarginate, united up to ¼ their length, the base rounded or nearly so, the lower portion of the midrib keeled in late anthesis and fruit; *stamens* slightly included, the filament 2.5–3 mm long, very sparsely pubescent basally, the anther reddish, oval, 0.4–0.5 mm long; *achenes* light brown, glabrous, 2–2.5

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mm long, the narrowly globose base tapering to a long, 3-angled beak (Fig. 1).

TYPE.—UTAH: Beaver Co., Grampian Hill, San Francisco Mts., near Frisco, on limestone hill S of rd just past turnoff to pass, sec. 23, T.27S., R.13W., 6600 ft elev., 29 Aug 1980, *Welsh, Chatterley & Anderson 20192*. Holotype, US. Isotypes, BRY, MARY, and 9 to be distributed from BRY.

ADDITIONAL SPECIMENS EXAMINED.—UTAH: Beaver Co., Frisco, sec. 23, T.27S., R.13W., 7300 ft elev., 6 Jun 1978, *Ostler & Anderson 1261* (BRY); San Francisco Mts., sec. 33, T.26S., R.13W., 14 June 1978, *Ostler & Anderson 1350* (BRY); Grampian Hill, sec. 23, T.27S., R.13W., 6740 ft elev., 25 June 1980, *Welsh & Chatterley 19653* (BRY, MARY).

*Eriogonum soredium* (from the Greek *soredium* meaning "small heap" alluding to the mat-forming habit of the plant) is most closely related to *E. shockleyi* S. Wats., a widespread Intermountain Region species which ranges from eastern California to western Colorado and northwestern New Mexico, and from the Snake River Plains of southern Idaho to northern Arizona. The new species differs from *E. shockleyi* most markedly in its glabrous flowers and fruits, but in addition the new species may be recognized by its smaller and generally narrower leaves (2–5 mm long in *E. soredium* versus 2–12 mm long in *E. shockleyi*), more numerous involucre (4 to 6 instead of 2 to 4) per head, its turbinate (not campanulate) involucre with 4 or 5 teeth rather than 5 to 10 as in *E. shockleyi*, and the



Fig. 1. *Eriogonum soredium*: A, habit of growth; B, involucre; C, leaves and involucre; D, flowers.

smaller flowers (up to 2.5 mm long in *E. soredium*, up to 4 mm long in *E. shockleyi*). In terms of habit the two are similar: both form rather compact mats of numerous, densely leaved rosettes. The flower color of *E. shockleyi* is more a creamy-white than the pure white of *E. soredium*, although the former may have yellowish flowers as well.

In my treatment of *Eriogonum* for Utah (Reveal, 1972), *E. soredium* will key (page 175) to *E. panguicense*. Here the dichotomy may be changed accordingly:

- EE. Flowers white.
  - F. Stems glabrous, 0.2–30 cm long; involucre glabrous; mountains of Sevier Co. southward to Kane and Washington cos. ....  
..... 37. *E. panguicense*
  - FF. Stems tomentose, up to 0.8 cm long; involucre tomentose; low hills near Frisco, Beaver Co. ....  
..... 39a. *E. soredium*

The new species is local and rare and occurs near populations of *Eriogonum shockleyi*. The Frisco area is noted for its historic mining operations, and for this reason *E. soredium* must be regarded as a potentially threatened species of flowering plants.

ACKNOWLEDGMENTS

I am grateful to Stanley L. Welsh for obtaining specimens of this new species so that it might be characterized. The illustration is by Kaye H. Thorne of Brigham Young University's Herbarium; I appreciate her efforts.

LITERATURE CITED

REVEAL, J. L. 1972. *Eriogonum* (Polygonaceae) of Utah. *Phytologia* 25: 169–217.