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James L. Reveal

*University of Maryland, College Park, and Smithsonian Institution, Washington, D.C.*

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NEW NEVADA ENTITIES AND COMBINATIONS IN ERIOGONUM (POLYGONACEAE)

James L. Reveal

ABSTRACT.—New species and varieties of the plant genus *Eriogonum* (Polygonaceae) that occur in Nevada are proposed. *Eriogonum tienii* and *E. ochrocephalum* var. *alexanderae* are endemic to Nevada, and *E. lewisii* is restricted to extreme northeastern Nevada and adjacent Utah. These entities belong to the subgenus Encyca. Two varieties of *E. umbellatum* (of the subgenus Oligogonum) are proposed. The first, var. *juniporinum*, is found in eastern Nevada and in the desert ranges of southeastern California. The second is var. *furcosum*, which is restricted to the Sierra Nevada. One new combination is also proposed: *E. nudum* var. *gramineum*.

The following new entities are validated for a treatment of *Eriogonum* in a companion article (Reveal 1985).

*Eriogonum ochrocephalum* S. Wats. var. *alexanderae* Reveal, var. nov.

A var. *ochrocephalo* caulibus pubescentibus differ. Low, rounded to spreading cespitose perennial herbs forming open to compact mats 1-8 dm across and up to 2 dm high, with a much branched, woody candeix arising from a stout, gnarled, woody taproot; *leaves* erect to spreading, numerous, the leaf-blades lanceolate to narrowly ovate, 1-2 cm long, 0.5-1.5 cm wide, white-tomentose on both surfaces, the petiole 2-5 cm long, tomentose; *stems* erect, 3-10 cm long, tomentose; *involucres* turbinate, (3.5) 4-5 mm long, 2-2.5 mm wide, rigid and tubular, tomentose without, the 5-6 lobes 0.3-0.5 mm long and erect; *flowers* yellow with yellowish green midribs, 2-3 mm long, the tepals oblong, united about ⅓ to ½ their length; *stamens* exserted, the filaments 3-4 mm long, pilose basally, the anthers yellow, 0.4-0.5 mm long, oblong; *achenes* light brown, 3-3.5 mm long, the narrow base tapering to a long, 3-angled beak.


Additional specimens examined.—NEVADA. Lyon Co.: SW slope of Wassuk Range, 13 Jun 1947, Alexander & Kellogg 5314 (OKL, UC); 0.5 mi NW on Nevada Highway 22 from rd E along the East Walker River, 6 Jun 1981, Tiehm 6527 (MARY); Aldrich Grade along Nevada Highway 3C N of Fletcher Springs, 6 Jun 1981, Tiehm 6558 (MARY). Pershing Co.: 2.8 air mi N of Trinity Peak, Trinity Range, 28 Jun 1980, Tiehm 6133 (MARY); W of Cooper Valley, SE end of Sahwave Mts., 29 May 1983, Tiehm & Tucker 7758 (MARY). Washoe Co.: NE side of Hungry Valley near Hungry Spring, 31 May 1980, Tiehm et al. 5769 (MARY); W of site of Leadville, Granite Range, 30 Jun 1983, Tiehm 8017 (MARY); 1.5 air mi NE of Grass Valley Range, NW end of Granite Range, 6 Jul 1983, Tiehm 8075 (MARY).

The var. *alexanderae* is named for Annie M. Alexander (1867-1950) who discovered this plant during her last botanical expedition to Nevada with Louise Kellogg in 1947. Miss Alexander was then 80 years old. It is a pleasure to remember this fine Nevada collector by naming this variant in her honor.

The var. *alexanderae* is generally found on the eastern edge of the distribution of var.
Eriogonum lewissii Reveal, sp. nov.

A *E. desertor* (Maguire) R. J. Davis foliis brevioribus et angustioribus cum caulibus floccosis nec tomentosis, involucris floccosis apice.

Low, rounded perennial herbs forming a compact to slightly spreading mat 1–4 dm across and up to 1 dm high, with a much branched, woody caudex arising from a stout, gnarled, woody taproot; leaves erect to spreading, numerous, the leaf-blades elliptic to ovate, 1–1.5 cm long, 4–6 (7) mm wide, grayish tomentose on both surfaces, becoming less so and greenish beneath the tomentum with age on the upper surface, the petiole 0.8–1.8 (2) cm long, tomentose; stems erect, 4–8 (10) cm long, floccose; involucres turbinate-campanulate, 2.5–3 mm long, 2–2.5 mm wide, rigid, floccose without the hairs restricted (by late anthesis) to the 5 spreading, 1–1.5 mm long, lobes; flowers yellow with reddish yellow midribs, (2) 2.5–3 mm long, the tepals oblong, united about ¼ of their length; *stamens* exserted, the filaments 3–4 mm long, pilose basally, the anthers yellow, 0.4–0.5 mm long, oblong; *achenes* light brown, 3–3.5 mm long, the narrow base tapering to a long, 3-angled, minutely bristled beak.


This new species of *Eriogonum* is named in honor of Mont E. Lewis, long a major collector of intermountain plants for the United States Forest Service and an authority on the genus *Carex*. It was on the basis of a collection he made that I searched the White Elephant Butte area for this unusual buckwheat. It, like *E. ochrocephalum* var. *alexandreae* proposed above, belongs to the subgenus *Eucla* (Nutt.) Kuntze.

In Nevada, Lewis's buckwheat may be distinguished by its floccose stems and involucres, small leaves, and high elevation habitat. It differs from the lower elevation and more southern *Eriogonum desertorum* by these features and others, notably the well-defined yet somewhat papery involucral tube that retains its rigid characteristics. In Utah and Idaho the capitate forms of *Eriogonum brevicaule* var. *laxifolium* (Torr. & Gray) Reveal most closely resemble *E. lewissii*. The variety tends to be restricted to the Wasatch Ranges of Idaho and Utah, ranging eastward to southwestern Wyoming. Like *E. desertorum*, the var. *laxifolium* has a well-defined and densely tomentose involucre. In addition, the leaves of this more eastern expression are decidedly longer and narrower than those of *E. lewissii*.

**Eriogonum tiehmii** Reveal, sp. nov.

A *E. anemophilo* Greene involucris longioribus et floribus sparse glandulosis differt.

Low, spreading perennial herbs forming a dense compact mat up to 3 dm across and to 1.6 dm high, with a much branched woody caudex arising from a stout, gnarled taproot; leaves erect to spreading, numerous, persistent, with a bluish gray hue, the leaf-blades elliptic to oblong, (0.8) 1–2 (2.5) cm long, 5–8 (10) mm wide, entire, grayish to whitish tomentose on both surfaces, often slightly greenish under the tomentum with age on the upper surface, the petiole 0.5–1.6 (2) cm long, tomentose without, glabrous within, with an expanded petiole base 3–5 mm long and 1–2 mm wide; stems erect, (0.6) 1–1.3 (1.5) dm long, floccose, greenish or reddish under the hairs; involucres turbinate-campanulate, 4–5 mm long, 3–4 mm wide, rigid, floccose and reddish without, glabrous within except for a few hairs at the very tip in some, with 5–6 erect to slightly spreading, 1.5–2 mm long, narrowly triangular lobes, the
bractlets linear, 2–4 mm long, minutely glandular and toothed, the pedicels exerted, 4–7 mm long, glandular throughout and especially so near the apex; flowers yellowish white or whitish to cream with reddish midribs and apices or merely reddish to reddish green midribs, often with a greenish yellow base, 2.5–3.5 mm long at anthesis, up to 4 mm long in early fruit, the tepals oblong, the outer slightly broader than inner, both with out-rolled margins, the apices truncate with a slightly emarginate apex in the outer series of tepals, stipitate glandular along the midrib and base without, sparsely glandular within, united 1/5 to 1/4 of the length; stamens exerted, the filaments 3–4 (4.5) mm long, pilose basally, the anthers pale yellow, 0.4–0.5 mm long, oval to oblong; achenes light brown, 3–4 mm long, the subglobose base tapering to a long, 3-angled beak about 1/3 the length of the fruit, the stigma 1–1.2 mm long.

**Type.—** NEVADA, Esmeralda Co.: Silver Peak Range just N of the road from Silverpeak to Fish Lake Valley, 1.2 air mi NNW of Cave Springs, sec. 27, T1S, R37E, 1830 m (6000 ft) elevation, 31 May 1984, Tiehm, Reve−, Williams and Reve− 8534. Holotype, US! Isotypes, BRY! CAS! MARY! NY! RENO! RSA! UTC! and elsewhere.

**Additional specimens examined.—** NEVADA: Esmeralda Co.: Silver Peak Range, 1.2 air mi NNW of Cave Springs, 18 May 1983, Tiehm 7707 (BRY, CAS, MARY, NY, RSA, UTC).

This remarkable species, named for Arnold ("Jerry") Tiehm, may be immediately recognized by its large, distinctly lobed involucres, cream-colored flowers, and stipitate-glandular tepals. In this latter feature, *Eriogonum tiehmii* is unique. Minute glands are common on the inner surface of tepals in many species of cespitose buckwheats belonging to the subgenus Eucycla. Tiehm's buckwheat is the only species with well-defined stipitate glands on the outer surface. In Nevada, *E. tiehmii* is morphologically most similar to *E. anemophilum* Greene and the cream-colored phase of *E. beatleyae* Reve−. The scapes of the latter are glandular, not floccose as in *E. tiehmii*, and the involucre of both established species does not approach the size of *E. tiehmii*.

*Eriogonum nudum* Bent. var. *gramineum* (S. Stokes) Reve−, comb. nov.


The concept of *Eriogonum nudum* var. *pubiflorum* Bent. in DC. has become increasingly restricted in its definition so that now the plant is defined as a northern element ranging from the central Sierra Nevada of California northward to south central Oregon. In Nevada, var. *pubiflorum* is found only in the extreme northwestern portion of the state, and then it is infrequent. In southern California, the long recognized var. *pau−* *ficiflorum* S. Wats. of the Transverse ranges (and southward to northern Baja California Norte) has not been confused with var. *pub-iflorum*, but in the southern portion of the Sierra Nevada the distinction is not always readily apparent. Howell (1976) proposed var. *westonii* (S. Stokes) J. T. Howell for the plants of the Tehachapi region and the western slope of the Sierra Nevada. The definition of that variety, as noted by Howell, cannot be expanded to include the plants of the desert range and eastern slope of Sierra Nevada common to Inyo and Mono counties, California. Thus, the var. *gramineum* is proposed. At present, var. *gramineum*, characterized by its yellow pubescent flowers and inflated stems, is not known from Nevada. It is to be sought in the Death Valley region of the state.

*Eriogonum umbellatum* Torr. var. *furcosum* Reve−, var. nov.

A var. *elliptico foliiis subglabris vel glabris supra.*

Low, rounded subshrubs up to 4.5 dm high and 8 dm across, infrequently forming a spreading mat to 5 dm across at higher elevations; leaves in loose rosettes, the leaf-blade elliptic to oblong, (0.7) 1–2.5 (3.5) cm long, 3–8 (13) mm wide, densely white tomentose below, thinly floccose or more commonly glabrous and bright green above, the petiole 3–10 (12) mm long; flowering stems erect, slender, 0.5–2 dm long, thinly floccose; inflorescences compoundly umbellate, 0.5–1.5
dm long, the branches floccose; involucres with tubes 2–3 (4.5) mm long, the usually reflexed lobes shorter to as long as the tube, floccose without; flowers bright yellow, (5) 6–8 mm long including the stipe.


The var. furcosum has been included under the name of the Pacific Northwest expression, var. stellatum (Benth. in DC.) M. E. Jones, or, as this must now be called due to a recent change in the International Code of Botanical Nomenclature, var. ellipticum (Nutt.) Reveal (Reveal 1983), in recent treatments of the genus in California (Reveal & Munz 1968). This expression is primarily found in the Sierra Nevada, and then mainly along the more gentle western slope. As the elevation of this range decreases to the north, the variety crosses the crest of the Sierra Nevada and enters into the Lake Tahoe Basin of California and onto the eastern foothills in extreme western Nevada.

In southern California, the var. furcosum gives way to var. munzii Reveal in the Transverse Ranges and to var. subaridum S. Stokes on the arid eastern slopes of the Sierra Nevada. The var. chlorothamnus Reveal in Munz is found along the eastern foothills of the Sierra Nevada bordering the Intermountain Region; this variant is isolated from var. furcosum by the Sierran crest. To the north, the new variety is replaced by another compoundly umbellate expression of Eriogonum umbellatum. This northern expression, which extends into the Siskiyou-Trinity region of California and adjacent southern Oregon, is as yet unnamed. Along the Coast Ranges of California is the distinctive var. bahiforme (Torr. & Gray) Jeps. This expression is not found in the Sierra Nevada.

Eriogonum umbellatum Torr. var. juniporinum Reveal, var. nov.

A var. subaridio S. Stokes floribus cremeis differ.

Plants forming low shrubs or subshrubs up to 8 dm high and 10 dm across; leaves in loose rosettes, the leaf-blade elliptic, (0.7) 1–2 cm long, (3) 5–10 (12) mm wide, greenish or whitish floccose to glabrous on both surfaces, becoming greenish floccose above with maturity; flowering stems slender, erect, 1–2.5 dm long, green and floccose to nearly glabrous; inflorescences compound umbellate, 0.5–1.5 (2) dm long, floccose; peduncles slender, 0.5–5 (6) cm long, floccose; involucres with tubes (2.5) 3–3.5 mm long, the reflexed lobes 1–2.5 mm long, thinly floccose; flowers cream colored or whitish, (4) 5–6 mm long.

Type.— NEVADA, White Pine Co.: Along U.S. Highway 50-6 at Sacramento Pass, on the northern end of the Snake Range, about 11 mi northwest of Baker, on sandy soil associated with juniper-pinyon and Artemisia, at about 2180 m (7150 ft) elevation, 13 Aug 1975, Reveal & Reveal 3925. Holotype, US! Isotypes, BRY, CAS, MARY, NY, OKL, TEX.

Representative specimens.— CALIFORNIA. San Bernardino Co.: Upper Cottonwood Canyon, Mid Hills, 30 Aug 1973, Hennickson 12727 (RSA); 2 mi from Kingstone...

The var. *juniporinum* is closely related to var. *subardium* S. Stokes in terms of its habit and habitat but more like var. *dichrocephalum* Gand. and var. *versicolor* S. Stokes as to flower color. The latter two variants are spreading, matted perennials and not at all shrubby, and in general the leaves are tomentose, at least on the lower surface in these expressions. The disjunct distribution of var. *juniporinum* is intriguing not only because the variant occurs in both the Great Basin cold desert habitat in southeastern Nevada and in the warm desert habitat of the Mojave Desert in southeastern California, but also because there is a delay in flowering between the two areas. In Nevada the variety comes into flower in late June and continues to flower into early September. In California, plants begin to flower in July and continue to flower well into late October. It is likely this difference in flowering time is due to the seasonality of rainfall. The var. *juniporinum* is generally a plant of the desert foothills and low passes in Nevada, reaching its upward limits about 2250 m elevation. The var. *dichrocephalum* and var. *versicolor* are found in the mountain ranges across southern Nevada between the two disjunct populations of var. *juniporinum*. These variants generally occur at higher elevations, or at least at points higher on mountain slopes than var. *juniporinum*. In California the new variety is found on the higher slopes, but it may be found as low as 1350 m elevation in the Providence Mountains and on the Kingstone Range.

**Literature Cited**


