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A REVISION OF THE UTAH SPECIES OF TOWNSENDIA (COMPOSITAE)

James L. Reveal[1]

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BULLETIN OF THE TORREY BOTANICAL CLUB

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A new *Frasera* from southern Nevada (Gentianaceae)

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REVEAL, J. L. (Dept. Bot., Univ. Maryland, College Park and U.S. Natl. Herb., Smithsonian Inst., Washington, D.C.). A new *Frasera* from southern Nevada (Gentianaceae). Bull. Torrey Bot. Club 98: 107–108. 1971.—*Frasera pahutensis* is described from Pahute Mesa, Nye Co., Nevada on the Nevada Test Site. It is easily distinguished from all other species in the genus, and in particular from *F. puberulenta*, by its numerous stems, short inflorescences, greenish-white corollas, narrowly oblong glands with a cover only at the very base, and small crown scales.

During the spring of 1970 a local population of a new *Frasera* (Gentianaceae) was discovered and is here named.

Frasera **pahutensis** Reveal, spec. nov.

A *F. puberulenta* caulibus pluribus et gracilibus, paniculis quam caulibus brevioribus, calycibus 5–7 mm longis, corollis quam calycibus longioribus, (6) 7–9 mm longis, lobis late ellipticis, glandibus (foveis) anguste oblongis, 3–4 mm longis et 0.6–0.8 mm latis, non tectis nisi basi, squamis praesentibus, 1 mm longis, capsulis 0.9–1.3 (1.6) cm longis includentibus 3–4 mm longis rostris differt.

Plantae herbaceae perennes cum (1) 5–10 compacta vel leviter expansa, ligneis caudicibus ex lutea lignea radice; caules plures et graciles, 1–3 dm longi, puberulenti; folia basalia, oblanceolata, 5–10 (20) cm long, (4) 5–12 (15) mm lata, plerumque conduplicata, puberulenta, albomarginata 0.2–0.3 mm lata, minute crenata, petioli basi lutea vel brunneola, ± membranacea, 5–12 mm lata; folia caulina anguste oblanceolata, opposita, 1–7 cm longa; inflorescentiae paniculatae, 2–10 (15) cm longae, caulibus breviores; pedicelli graciles, 5–35 (70) mm longi; calyces lanceolati, 5–7 mm longi, corollis breviores; corollae virdi-albae, purpureomaculatae, lobis quatuor, (6) 7–9 mm longis, late ellipticis, apice contractis vel acuminatis, cucullatis, leviter pubescentibus extra, intus glabris; glandes (fovea) anguste oblongae, 3–4 mm longae et 0.6–0.8 mm latae, non tectae nisi basi, fimbriatae; squamae 1 mm longae, bifurcatae; capsulae oblongae, 0.9–1.3 (1.6) cm longae includentibus 3–4 mm longis rostris seminibus 3–4, (3.5) 4.5–5.5 mm longis; n = 13.

Low spreading herbaceous perennials with a rather compact to somewhat spreading woody caudex system of (1) 5–10 branches arising from a yellowish woody taproot, each caudex bearing a single stem just above and to the side of the previous year's stem; herbage puberulent; stems slender, 1–3 dm long, more densely puberulent below than above; basal leaves oblanceolate, 5–10 (20) cm long, (4) 5–12 (15) mm wide, conduplicate, the larger ones becoming flat in age, densely puberulent on both surfaces, green except for a white margin 0.2–0.3 mm wide, entire but with minutely wavy-margins or somewhat crenate, the blade tapering gradually to an expanded petiole-base, this pale yellow to light brown, ± membranous, 5–12 mm wide, sparsely pubescent to nearly glabrous without, pubescent within; cauline leaves narrowly oblanceolate, opposite, 1–7 cm long, similar to the basal leaves; inflorescences narrow, open panicles with 2–7 whorls of flowers, 2–10 (15) cm long or about one-third or less the height of the plant; pedicels slender, 5–35 mm long at anthesis, becoming up to 70 mm long in fruit; calyx divided nearly to the base, the lanceolate lobes 5–7 mm long, acute, sparsely pubescent without, glabrous within, green except for a thin hyaline margin; corolla rotate, greenish-white with a mottling of dark purple spots above the gland, the spots becoming less pronounced along the edge and at the base of the gland, 4-merous, divided nearly to the base, the broadly elliptic lobes (6) 7–9 mm long, tapering to an acuminate, cucullate tip, slightly pubescent without, glabrous within; glands (fovea) narrowly oblong, 3–4 mm long, 0.6–0.8 mm wide, with a closed covered base present only at the very base of the gland, otherwise open and merely fringed with slender overlapping, viscid, white hairs on a slightly raised rim, the hairs becoming reduced in number to-

[1] Work on this study was conducted under Contract No. AT (04-1) Gen-12 between the University of California and the Division of Biology and Medicine, United States Atomic Energy Commission, Laboratory of Nuclear Medicine and Radiation Biology, University of California, Los Angeles, California 90024, and supported in part by a National Science Foundation Grant, GB-22645.

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SPARGANIUM SIMPLEX HUDS., A SUPERFLUOUS NAME

James L. Reveal *

Summary

Sparganium simplex Hudson (1778) is a superflous name; the correct name for the simple-stemmed Bur-reed is *Sparganium emersum* Rehmann (1871).

The Simple-stemmed Bur-reed in North America is typically called *Sparganium simplex* Huds. or given a provincial epithet *S. multipedunculatum* (Morong) Rydb. In recent years some American authors have recognized that both entities occur on this continent, and have preferred to distinguish the two at the varietal level, as var. *simplex* and var. *multipedunculatum* Morong. While preparing the treatment of *Sparganium* for a flora of the Intermountain Region of the western United States, a careful re-examination of this problem was initiated. As much of the material along both coasts of the United States and across Alaska and Canada resembles specimens of *S. simplex* of western Europe and England, a review of the nomenclatural history of the species was started, as the plants in the Intermountain Region (var. *multipedunculatum*) can not be specifically maintained from *S. simplex*. This review revealed that *S. simplex* was a superfluous name.

William Hudson, in his second edition of *Flora Anglica* (1778), proposed *Sparganium simplex* as follows:

2. SPARGANIUM foliis ensiformibus planis, caule simplici — *simplex*
   Sparganium non ramosum. *B. pin.* 15. *Park.* 1205. *R. syn.* 437. sive latifolium. *Ger. em.* 45.
β. Sparganium foliis decumbentibus planis. *Sp. pl.* 1378. *Fl. dan.* 260. — natans
   Sparganium foliis planis mollibus decumbentibus. *Hall. hist.* 1304.
   Sparganium minimum. *R. syn.* 437. *hist.* 1910. *Anglis*, lesser Bur-reed.
   Habitat *in palustribus et ad ripas stagnorum et lacuum* β *in stagnis, lacubus et fluviis leniter fluentibus; circa* Norwich. D. Rose. *Circa* Llanberris, *et in comitatibus* Eboracensi, Westmorlandico *passim.* VII.

That Hudson was including Linnaeus' species *natans* in his *S. simplex* can not be denied. In Linnaeus' *Species Plantarum* (1753), the diagnosis reads:

2. SPARGANIUM foliis decumbentibus planis. — *natans*
   Sparganium foliis natantibus plano-convexis. *Fl. lapp.* 345. *Fl. Suec.* 771.
   Sparganium non ramosum minus. *Dill. giff.* 130. *Spec.* 58.
   Sparganium minimum. *Raj. hist.* 1910. *angl.* 3. p. 437.
   Habitat in Europae *borealis lacubus, paludibus.*

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BULLETIN OF THE TORREY BOTANICAL CLUB
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Machaeranthera ammophila (Compositae, Astereae), a new species from southern Nevada

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REVEAL, J. L. (Dept. Bot., Univ. Md., College Park, Md., and U. S. Natl. Herb., Smithsonian Inst., Washington, D.C.). *Machaeranthera ammophila* (Compositae, Astereae), a new species from southern Nevada. Bull. Torrey Bot. Club 97: 171–173. 1970.
—A new species of *Machaeranthera* is described from Ash Meadows, Nye County, Nevada. It is most closely related to *M. leucanthemifolia* (Greene) Greene, but differs in being a strict winter annual with numerous morphological discontinuities separating the two species. So far as known, the new species is endemic to sand dune areas along the western margin of Ash Meadows.

The Ash Meadows region of southwestern Nye County, Nevada, has proved to be an exciting area for new and unusual plants. To date, a total of six new taxa of flowering plants have been found. Most of these fall into groups under study by colleagues of mine, and two, *Nitrophila mohavensis*

[1] Work on this study was conducted under Contract No. AT (04-1) Gen-12 between the University of California and the Division of Biology and Medicine, United States Atomic Energy Commission while stationed at the Laboratory of Nuclear Medicine and Radiation Biology, University of California, Los Angeles, California 90024.

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A NEW SPECIES OF *LATHYRUS* (FABACEAE) FROM THE DEATH VALLEY REGION OF CALIFORNIA AND NEVADA

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In a summary discussion of *Lathyrus lanswertii* Kell. ssp. *aridus* (Piper) Brads., C. L. Hitchcock (1952, p. 28) mentioned a probably undescribed species of the genus collected by botanists of the Death Valley Expedition at Wood Canyon in the Grapevine Mountains, Inyo County, California. Hitchcock evaluated the entity as "more or less intermediate in character" between *L. lanswertii, L. pauciflorus* Fern. ssp. *brownii* (Eastw.) Piper, and *L. graminifolius* (Wats.) White, but having only one example (*Coville & Funston 1760*, listed by Coville 1893, p. 88, as *L. paluster* L.), he postponed describing it until more material became available. This desideratum is now fulfilled by rediscovery of the plant in southern Nye County, Nevada, in two low mountain ranges immediately east of the Grapevines, the further not more than 40 miles distant from Wood Canyon. These modern gatherings provide a clear picture of the species described below, which we take pleasure in dedicating to Dr. C. Leo Hitchcock of the University of Washington, Seattle, the foremost student of North American *Lathyrus*.

The characters of *Lathyrus hitchcockianus* that we find taxonomically significant in the context of its group are the weak, scattered pubescence of the stems and leaves, the relatively few (2–8) narrow leaflets, the well-developed prehensile tendrils surpassing the last pair of leaflets, and the small purplish flowers borne in almost always 2-flowered racemes on short individual pedicels.

Of the three entities mentioned by Hitchcock as akin to the Death Valley species, *L. graminifolius* is the most easily distinguished, its greatly elongated leaflets combined with well-furnished racemes of 4–several flowers being decisively different. This species is fully allopatric, an element of the Sierra Madrean flora that extends northward into the summer-rainfall areas

ALISO

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A NEW ANNUAL *ERIOGONUM* (POLYGONACEAE) FROM SOUTHERN NEVADA AND ADJACENT CALIFORNIA

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The *Eriogonum deflexum* complex has been the object of intensive field study on my part, and the subject of a major revision in my series of papers on the genus (Reveal, 1968a). Since that revision appeared, one additional species, *E. scabrellum* Reveal has been reported (Reveal, 1968b). Now, another may be described:

Eriogonum bifurcatum Reveal, sp. nov.

A *E. insigne* S. Wats. (subgeneris Ganysmae) plantis (0.5–)1–4 dm altis et 3–15 dm latis, caulibus 0.3–0.8(–3) cm longis, inflorescentiis apartis, involucris paucis et late separatis differt. Herba annua, (0.5–)1–4 dm alta et 3–15 dm lata, glabra; caules basi (raro caulina), laminis rotundo-cordatis, (0.5–)1–3 cm longis et latis, interdum reniformis et 1–4 cm latis, albotomentosis subter, floccosis et viridis supra, petiolis 1–4 cm longis; caules breves, 0.3–0.8(–3) cm longi; bracteae 1–2(–3) mm longae; inflorescentiae apertae et late effusae, 1–4 dm altae et 3–15 dm latae, ramis inferne trichotomis, superne dichotomis; pedunculi erecti, 0–5 mm longi; involucra turbinata, 2–2.5 mm longa, 1.3–2 mm lata, 5-lobata, bracteolis linearioblanceolatis, 2–2.5 mm longis, pedicellis 2–2.5(–3) mm longis; perianthia alba, 1.5–2 mm longa, tepalis dissimilibus, extimis tepalis obovatis cum cordatis basi, 0.9–1.1 mm latis, intimis tepalis lanceolatis, 0.5–0.7 mm latis; stamina 2–3 mm longa, filamentis pilosis basi, antheris roseis vel purpureis, 0.5–0.6 mm longis; achaenia infuscata, 2–2.3 mm longa; $n=20$.

Low spreading herbaceous annual (0.5–)1.5–4 dm high, 3–15 dm across, the plants nearly glabrous throughout, arising from a slender, tan, woody taproot; leaves strictly basal (rarely with reduced leaves at the first node in the larger plants), the leaf-blade round-cordate, (0.5–)1–3 cm long and wide, occasionally reniform and 1–4 cm wide, densely white-tomentose below, less so to floccose and green above, the margin entire, plane or infrequently with a wavy margin in some, the apex rounded, the base mostly cordate, the petiole 1–4 cm long, tomentose, the petiole-base triangular, 4–6 mm long, tomentose without, glabrous within; flowering stems short, often concealed by the leaves, green, glabrous and glaucous, not fistulose, 0.3–0.8(–3) cm long; bracts scale-like, ternate, 1–2(–3) mm long, tan,

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A NEW COMBINATION IN TOFIELDIA GLUTINOSA (LILIACEAE)

JAMES L. REVEAL

While reviewing the genus *Tofieldia* for the Intermountain Region of the western United States, I consulted the numerous specimens of the *T. glutinosa* complex deposited at the United States National Herbarium. Although none of the varieties of this complex is known to occur in the Intermountain Region, I did encounter a nomenclatural problem which ought to be resolved.

When Hitchcock (1944) reviewed *Tofieldia glutinosa* for western North America, he reduced *T. intermedia* to synonymy under his "ssp. *typica*," or what would now be called var. or ssp. *glutinosa*. In doing so, Hitchcock stated (page 494) : "Rydberg cited, as the type of *T. intermedia*, a specimen from Sheh-Shock [sic] Lake, Alaska, collected in 1895, *M. W. Gorman* 78 (Type at the New York Botanical Garden). This specimen is in flower rather than fruit and it therefore cannot be ascertained whether or not the seeds would have a tight or loose testa — the only diagnostic character that will serve to distinguish ssp. *typica* from ssp. *brevistyla* in all cases. Nearly all collections from northern British Columbia have the testa characteristic of [*T.*] *glutinosa* [ssp.] *typica*, so it seems reasonable to assume that Rydberg's type may belong with that entity."

What seemed reasonable to assume with the limited material then available to Hitchcock now does not seem so, as all Alaskan specimens reviewed so far belong to Hitchcock's ssp. *brevistyla*. Likewise, fruiting specimens from near the type area of *Tofieldia intermedia* all exhibit the loose testa typical of ssp. *brevistyla*. Other specimens which range far to the north in Alaska (then unavailable to Hitchcock, due mainly to the Second World War) all belong to the latter taxon, a point apparently accepted by Hultén (1968) in his latest revision of the Alaskan flora.

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p. 479

Plant Variation and Evolution. David Briggs and Stuart M. Walters. 256 pp. illus. McGraw-Hill Book Company, New York, 1969. $2.45.

The old saying "Never judge a book by its cover" can be equally well applied to the title. In the case of this book and influenced by the title, one is hard pressed not to envision a three volume *magnum opus*. However, the title goes with a small paperback book specifically aimed at the beginning science reader. Nevertheless, Briggs and Walters, two English scholars, do a marvelous job in providing the more advanced person with a succinct and concise summary of the historical and practical development of the field of plant evolution.

The first half of this volume is devoted to a short history of the development of and the struggle to understand plant variation and evolution. In a day when the average student is left without a prospectus of the past, he is rarely able to appreciate the mood of the time or the amount of available data present when the concepts of Linnaeus, Buffon, Lamarck, and especially Darwin were formulated. Likewise, the painful and bitter struggle to put the theories of Darwin and Mendel together to form our modern ideas of evolution are not understood by most of the new generation. In this book it is possible to obtain a feeling of those past times.

The second half of the book is devoted to an appraisal of plant variation and evolution in light of our modern theories. Here again the authors give the reader a feeling of where we stand in the overall understanding of the subject. They are quick to point out that the ideas and concepts presented by some as "gospel" must be used carefully and only in certain cases. They do not find fault with anyone's work —perhaps a gesture that is difficult for American readers fully to appreciate—but quietly pointed out the areas where additional studies may be helpful in the future.

For the American audience, the authors present a balanced book in that they draw examples from North America as well as Europe. Consequently, the reader is able to review the well-known examples of his area and at the same time become familiar with ones of the other parts of the world. Often Briggs and Walters select works which expand and go beyond those studies made either in the New World or the Old World and thus extend our knowledge of variation and evolution a bit more.

As with all books, some minor problems exist. The authors use the "-deme terminology" instead of the more familiarly ecotype terminology, but their favorable presentation of the -deme concept may renew interest in its use. Still, the reader is advised by the authors to be aware of the fact that this concept is not in vogue and that anyone using the book in class will have to introduce his students to the ecotype concepts in order for them fully to appreciate the works of other authors. I object to the constant referral of the reader to different parts of the book. This is an extremely handy device if one is simply reading, but it is often difficult to recall what point was made several chapters ago when a similar subject is discussed again. One may go back and forth and find these points of reference, but they are often difficult to find as no pages are cited. Also, the paperback copy is poorly bound—by review copy has already fallen apart.

This book makes a valuable addition to the field of plant evolution and will serve the student and the professional well. It can not stand alone in a classroom, but then it was never intended to. For the teacher who wishes to have his students discover a few of the fascinating facts about plant variation, the study of plant evolution, and the history of the subject, he can turn to no better summary.

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ALISO

Vol. 7, No. 2, pp. 217-230 June 22, 1970

ADDITIONAL NOTES ON THE CALIFORNIA BUCKWHEATS (*ERIOGONUM*, POLYGONACEAE)

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Since the treatment of the genus *Eriogonum* (Polygonaceae) was completed for the *Supplement to A California Flora* by Philip A. Munz and myself (Reveal & Munz, 1968), a number of minor notes and corrections in the taxonomic portions of that paper have come to my attention which seem worthy of comment at this time.

Eriogonum heracleoides Nutt. In our treatment (page 41), I proposed that the California material be referred to the var. *angustifolium* (Nutt.) T. & G. following the recent work by Hitchcock (1964). Since that time, type material associated with this species has been reviewed at the Royal Botanic Garden at Kew, the Academy of Natural Sciences in Philadelphia, and photographs of the types at the British Museum (Natural History) taken for me by Conrad V. Morton of the U. S. National Herbarium in Washington, D.C. This has allowed me to investigate more carefully the exact nature of some of the early Nuttallian names, including both *E. heracleoides* and *E. angustifolium*. In general our previous concepts of var. *heracleoides* were based on a far too limited circumscription of the variety. Actually the typical variety should include those forms of the species which have oblanceolate leaves 4–15 mm wide, while the var. *angustifolium* includes those populations with linear leaves only 1–4 mm wide. As a result of this study, the var. *angustifolium* is now outlined as occurring from northern Oregon northward to southern British Columbia, while the typical variety is found throughout much of the western United States, including northern California.

Eriogonum umbellatum Torr. var. glaberrimum (Gand.) Reveal [*E. g.* Gand.] Leaves glabrous, elliptic, 1–2 cm long; inflorescences compound, bracteate near the middle of the rays; calyx 4–7 mm long, cream-colored; flowers numerous in each involucre, the heads up to 3 cm across.—Dry gravelly places at 4500–6000 ft; Modoc Co. north to Lake and Harney Counties, Ore. July–Aug.

The var. *glaberrimum* was thought to occur in California (page 44), but no specimens were known to me at that time. Since then I have seen several collections from Modoc Co., California.

COMMENTS ON LESQUERELLA HITCHCOCKII

James L. Reveal

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THE MISSING FRÉMONT CANNON—AN ECOLOGICAL SOLUTION?

JACK L. REVEAL AND JAMES L. REVEAL

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A NEW PERENNIAL BUCKWHEAT (*ERIOGONUM*, POLYGONACEAE) FROM SOUTHEASTERN ARIZONA

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While reviewing the *Eriogonum* (Polygonaceae) collection desposited at Arizona State University, specimens of an undescribed perennial species from southeastern Arizona were noted. At my request, Mrs. Elinor Lehto of that institution collected additional specimens of the population throughout the growing season of 1968. The entire collection was sent to me at Brigham Young University for detailed study. Comparison of the materials in question with all known species from Arizona and adjacent areas demonstrated that the entity had not been described previously. At the suggestion of Mrs. Lehto, this new species may be known as:

Eriogonum apachense Reveal, spec. nov.

A *E. heermannii* Dur. & Hilg. differt plantis subfruticosis, ramis viridibus glabris et scabrellis, foliis ellipticis vel oblanceolatis tomentosis, inflorescentiis cymosis, involucris angusti-turbinatis, perianthiis albis, segmentis basi truncatis.

Fruticulus 2-5 dm altus, lignosus infra, ramis nanis et intricatis; laminae foliorum oblanceolatae vel ellipticae, (5) 7-12 (15) mm longae, 2-5 (6) mm latae, subtus albi-tomentosae, supra subglabrae, petiolis 2-4 mm longis, basi expansa petioli 1.5-3.5 mm longa, 1.5-2 mm lata, tomentosa; caules deorsum tomentosi, sursum glabri, 1-5 cm longi, bracteis 0.4-1 mm longis, triangularibus; inflorescentiae cymosae, 1-2 mm longae; involucra angusti-turbinata, 1-1.8 longa, 0.7-1.3 mm lata, sessilia, glabra extra, intus tomentosa, 5-lobata, bracteolis oblanceolatis, 0.8-1.5 mm longis, pedicellis 2-3.5 mm longis, glabris; perianthia alba, costa viridi vel brunnescente, (2-5) 3-4 mm longa, segment dissimilibus, exterioribus ovatis, 2-3 mm longis, 1.5-2 mm latis, apice rotundo, basi truncata, interioribus anguste lanceolatis, 2.5-3.5 mm longis, 0.7-1 mm latis; stamina 2-5 mm longa, filamentis basi pilosis, antheris 0.3-0.5 mm longis, oblongis; achaenia brunnea, 2.5-3 mm longa.

Low shrubby perennials 2-5 dm high, 3-6 dm across, forming rather dense, branched, spreading crowns of few to several herbaceous stems from branching woody caudices; plants woody at the base, 1-3 dm long, grayish with shredding bark in some, the herbaceous crown 1-2 dm long, green, glabrous, and scabrellous nearly throughout; leaves on the lower herbaceous stems, the leaf-blades oblanceolate to elliptic, (5) 7-12 (15) mm long, 2-5 (6) mm wide, densely white-tomentose below, sparsely tomentose above, the leaf-margins thickened in some, not revolute, petioles 2-4 mm long, sparsely tomentose, leaves sheathing up the stems 1-5 cm, deciduous, the plants essentially leafless in anthesis, the petiole-bases 1.5-3.5 mm long, 1.5-2 mm wide, persistent, tomentose, the tomentum often persistent on the dried woody stems; stems tomentose among the leaves, glabrous above, the stems and branches terete, not or only slightly angled on the uppermost internodes; inflorescences cymose, ± densely branched, 3-4 (6) rayed at the first node, trichotomous or dichotomous above, the internodes short, 2-10 mm long, becoming ever increasingly shorter above; bracts ternate, scale-like and triangular, 0.4-1 mm long, widening from acute apices to connate bases, tomentose within, less so to glabrous without, dark reddish-brown to nearly black; involucres sessile, solitary, narrowly turbinate, 1-1.8 mm long, 0.7-1.3 mm wide, glabrous without, sparsely tomentose within, 5-lobed, the lobes ca. 0.5 mm long, with membranceous margins, the involucral tube green, the lobes green to golden-orange, bractlets oblanceolate, thickish, white except for reddish tips in some, 0.8-1.5 mm long, with long hyaline marginal cells, pedicels glabrous, 2-3.5 mm long, exserting the 2-6 flowers 1-1.5 mm beyond the involucral throat; perianth white with greenish midribs and bases, becoming reddish to rustic in age, (2.5) 3-4 mm long, glabrous without, glabrous within except for minute glands along the midribs and perianth bases; calyx-segments dissimilar, the outer whorl of segments ovate, 2-3 mm long, 1.5-2 mm wide, the apices rounded, the bases truncate, the inner whorl of segments narrowly lanceolate, 2.5-3.5 mm long, 0.7-1 mm wide, the apices rounded; stamens slightly to long exserted, the filaments 2-5 mm long, sparsely pilose basally, the anthers oblong, 0.3-0.5 mm long, reddish; achenes light brown, 2.5-3 mm long, the subglobose bases tapering to long 3-angled beaks.

TYPE. — On gypsum outcrops along U. S. Highway 70, 11 miles northwest of Bylas, Graham Co., Arizona, 7 Sept. 1968, *Pinkava, Keil & Lehto 13400*. Holotype deposited at UTC. A total of 29 isotypes will be deposited at ARIZ, ASU, BRY, CAS, GH, MO, NY, OKL, RSA, UC, US, and other herbaria.

Additional specimens examined: ARIZONA, Graham Co.: 9.5 mi N of Bylas, 4 Oct. 1967, *Keil, Pinkava & Lehto 10134* (ASU, BRY); 11.6 mi N of Bylas, 5 May 1968, *Pinkava, Keil & Lehto 13018* (ASU, BRY, CAS, UC, UTC); 9 mi E of Calva turnoff, 16 Aug. 1968, *Pinkava 4903* (ASU, BRY, UTC).

Eriogonum apachense, a member of the subgenus *Eucycla* (Nutt.) Kuntze, is seemingly most closely related to *E. heermannii* Dur. & Hilg. The Heermann

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