Western North American Naturalist 70(3), © 2010, pp. 415–417

A NEW SPECIES OF *FRASERA* (GENTIANACEAE) FROM UINTA BASIN, UTAH

Clayton Newberry[1] and Sherel Goodrich[2]

ABSTRACT.—***Frasera ackermanae*, sp. nov.** is described based on specimens collected from the Brush Creek drainage, Uinta Basin in Uintah County, Utah. The short stem, compact inflorescence, and longer calyx lobes separate this species from the similar *Frasera pahutensis* Reveal.

Key words: Frasera, *Gentianaceae, Brush Creek, Uintah County, Uinta Basin, Utah.*

DESCRIPTION, COMPARISON, AND KEY

***Frasera ackermanae* C. Newberry & Goodrich, sp.nov.** Similis *F. pahutensis* Reveal sed inflorescentia compactiore, internodio inflorescentiae plerumque nonelongato, et lobis calycis longioribus differt.

Perennial herb, 5–25 cm tall, shoots one to several, arising from a multicipital, marcescent caudex and long yellowish taproot, finely puberulent; leaves epetiolate, keeled, mostly glabrous or finely puberulent towards the base, marginally white; basal leaves narrowly oblanceolate, 1.5–14 cm long, 2–7 mm wide, the larger ones sometimes 3-nerved; cauline leaves opposite, usually 1 or 2 pairs per stem, narrowly oblanceolate to sublinear, 3–9 cm long, 1.3–5 mm wide; inflorescence a dichasium with 4–6 nodes, often half or slightly more than half the height of the entire plant (Fig. 1), (2) 3–11 cm long, 1.5–2.5 cm wide, the inflorescence arising within the basal leaves; pedicels ascending, minutely puberulent, 4–20 mm long; calyx lobes 4, lanceolate, marginally scarious, (4) 5–8 mm long, ± 1 mm wide, persistent in fruit; corolla (Fig. 2) white, flecked with blue, the lobes 4, with green mid-strip on lower side, lanceolate, 6–9 mm long, 3–4 mm wide; fovea 1 on each corolla lobe, oblong, 2–3 mm long, the rim fimbriate, more densely so proximally, the fimbriae equal to or longer than the foveal width; crown scales about 2 mm long, distally white, proximally bluish, deeply lacerate, the lacerations exceeding the length of the undivided base and acropetally filiform; stamens 5 mm long, the filiments dilated basipetally, the anthers ca. 2 mm long; capsule ca 8–9 mm long, ± equal with the calyx lobes; seeds 3–4.5 mm long, 1.5–2 mm wide, sulcate, surficially cerebriform.

The fovea and fimbriae of *F. ackermanae* are more like those of *F. pahutensis* Reveal than they are in other species of the genus in the Intermountain area. The leaves and size of the plant are also similar to *F. pahutensis.* The following key distinguishes *F. ackermanae* from *F. pahutensis.*

1. Inflorescence with lower nodes often not elevated above the basal leaves at anthesis and in fruit, with the lowest internode commonly not much if at all exceeding the associated flowers; stems commonly not exceeding the basal leaves; calyx (4) 5–8 mm long. . . . . *F. ackermanae*

1′. Inflorescence often well elevated above the basal leaves at anthesis and in fruit, with the lowest internode often elongate and much exceeding the associated flowers; stems equaling or more commonly 1.5 or more times longer than the basal leaves; calyx 3.5–4.5 mm long . . . . . *F. pahutensis*

TYPE MATERIAL

HOLOTYPE to BRY; ISOTYPES to ASU, MO, NY, RM, UC, UI, UNLV, USUUB, UT, UTC:

USA, Utah, Uintah County: Brush Creek Drainage, Coyote Gulch, 0.5 mile west of pull-off from U.S. Route 191. T3N, R22E, Sec. 5 NW1/4; 40°35′15.7″N, 109°28′32.2″W; UTM Zone 12T, 4494099 N, 068841 E (NAD83). Elevation 1786 m (5860 ft). Yellowish clay with

[1]12875 E. Wethersfield Road, Scottsdale, AZ 85259.
[2]Corresponding author. Ashley National Forest, 355 North Vernal Avenue, Vernal, UT 84078. E-mail: skgoodrich@fs.fed.us

Fig. 1. Habit of *Frasera ackermanae.*

paleosol inclusions and selenite gypsum fragments, derived from an as-yet-unnamed member of the upper Chinle Formation or Bell Springs Member of the Nugget Formation. Associated species: *Amelanchier utahensis, Arenaria fendleri, Asclepias cryptoceras, Atriplex confertifolia, Caulanthus crassicaulis, Cercocarpus montanus, Cirsium calcareum, Cryptantha brevifolia, Ephedra viridis, Euphorbia brachycera, Forsellesia meionandra, Haplopappus armerioides, Helianthella microcephala, Hymenopappus filifolius, Juniperus osteosperma, Machaeranthera grindelioides, Oryzopsis hymenoides, Penstemon pachyphyllus, Stanleya pinnata,* and *Wyethia scabra.* Légérunt Clayton Newberry 15000, Diane Ackerman, Tom Elder, Sherel Goodrich, 08 June 2007.

PARATYPE to BRY, NY, RM:

USA, Utah, Uintah County: Brush Creek Drainage, Coyote Gulch; 40°35′16.5″N, 109° 28′44.1″W (western edge of population of the new species). Elevation 1778 m (5832 ft). Semibarrens of Chinle Formation with *Cryptantha breviflora* and scattered *Juniperus osteosperma.* S. Goodrich, C. Newberry, T. Elder, and D. Ackerman 27252, 08 June 2007.

PARATYPE to BRY:

USA, Utah, Uintah County: Brush Creek Drainage, Coyote Gulch, 40°35′23.6″N, 109° 28′29.2″W (northeastern edge of the population of the new species). Elevation 1778 m (5832 ft). Semibarrens of Chinle Formation with *Cryptantha breviflora* and scattered *Juniperus osteosperma.* S. Goodrich, C. Newberry, T. Elder, and D. Ackerman 27253, 08 June 2007.

Distribution and Ecology

Frasera ackermanae is known only from the type locality, where it is locally common on the semibarren clay hillsides of the formation described above and sparing in adjacent alluvial wash bottoms. The population of *F. ackermanae* is disjunct from *F. pahutensis* by about 600 km. The similar but larger *F. albomarginata* S. Watson is known in Emery County, Utah, from which *F. ackermanae* is disjunct by about 300 km. As suggested for other narrow endemics (Welsh 1979, Shultz and Shultz 1985),

Fig. 2. Corolla of *Frasera ackermanae.*

the low level of competition from other plant species may be a strong factor in the narrow endemism of *F. ackermanae.*

ACKNOWLEDGMENTS

This species is named in honor of Diane Ackerman, who first spotted this plant, brought it to our attention, and enthusiastically pursued its identification. As a charter member, Diane helped establish an eastern Washington chapter of the Washington Native Plant Society. She has a degree in geology from University of North Carolina, Wilmington, and she worked for the National Park Service at Fossil Butte National Monument near Kemmerer, Wyoming. Currently Diane lives in Vernal, Utah, where her continued enthusiasm for plants led to the discovery of *Frasera ackermanae.*

We thank Dr. Loran Squires of Utah State University–Uintah Basin campus for the use of campus laboratory facilities.

LITERATURE CITED

SHULTZ, L.M., AND J.S. SHULTZ. 1985. *Penstemon pinorum* (Scrophulariaceae), a new species from Utah. Great Basin Naturalist 37:98–101.

WELSH, S.L. 1979. Endangered and threatened plants of Utah: a case study. Great Basin Naturalist Memoirs 3:69–80.

Received 11 December 2009
Accepted 30 April 2010