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A DISTINCTIVE NEW TAXON: *GILIA KARENÆ* (POLEMONACEAE)

Stanley L. Welsh^{1,2} and Ronald Kass¹

ABSTRACT.—Described is *Gilia karenæ* Kass & S.L. Welsh from Emery County, Utah.

RESUMEN.—Se describe a *Gilia karenæ* Kass & S.L. Welsh del condado de Emery, Utah.

While engaged in a survey for narrowly restricted plant species in the vicinity of a gypsum mining operation in Emery County, on 21 May 2013, Ron Kass and Karen Ann Preston Kass were exploring some low bluffs in outcrops of the Jurassic Carmel Formation when they discovered a small population of a very distinctive plant. It is a mound-forming, long-lived perennial with leaves of conformation unusual for the genus *Gilia*, and with lavender flowers, whose floral size places the plant with a small group of evidently allied species (see key below). Voucher material was collected, pressed, and dried in standard format for herbarium specimens. That collection (the holotype and a solitary isotype) was sufficiently different that the site was revisited on 28 May 2013 by Ron and Karen Kass accompanied by S.L. Welsh. Solitary caudex branches with flowering shoots were selected from several of the clumps to serve as paratypes (thus the plants were not removed and were left alive and in full flower).

The population of the plant is remote from the gypsum mine by several hundred yards, and there are other similar outcrops of the Carmel Formation trending southwest from the site that will serve as type locality for the new proposal. The entire exposure of similar low bluff margins requires investigation to determine the extent of the species beyond the initial discovery.

The following key is adapted from *A Utah Flora* (Welsh et al. 2008:554).

- 1. Plants annual or biennial, from a taproot, a caudex not developed; flowers variously colored; distribution various 2
- Plants perennial from a branching caudex 3
- 2(1). Basal leaves obovate-spatulate, merely dentate; corollas usually carmine or less commonly

- vermilion, the tube 11–19 mm long; plants of SE Utah *G. subnuda*
- Basal leaves variously shaped, definitely pinnatifid; flowers lavender to blue purple, funnelform, the tube 13–16 mm long; plants of San Juan Co., Utah *G. haydenii*
- 3(2). Leaves with blades rotund, oval, or ovate, the short petiole flattened and wing-margined; flowers lavender; plants from N Emery Co., Utah *G. karenæ*
- Leaves oblanceolate to linear, or spatulate to narrowly oblanceolate or obovate, and toothed or pinnately lobed to entire 4
- 4(3). Flowers red; plants from W Wayne Co., Utah *G. caespitosa*
- Flowers pale blue; plants from W Emery Co. and E Sevier Co., Utah *G. tenuis*

Gilia karenæ Kass & S.L. Welsh, sp. nov.

Similis *Gilia caespitosa* et *G. tenuis* in perenni sed e *caespitosa* in floribus coloribus et e *tenuis* in foliis simplisibus et floribus coloribus, et in ambo in corollis limbis latioribus et foliis ovatis vel rotundatis differt.

[USA. Utah, Emery Co., north end of San Rafael Swell, Chalk Hills, ca. 3 mi N of Wedge Overlook, on shaly outcrop in gypsiferous Jurassic Carmel Formation, at ca. 5910 ft (1750 m), T19S, R10E, S27, Ron & Karen Ann Preston Kass 5458, 21 May 2013, holotype BRY! Paratypes, same locality, shaly outcrop in gypsiferous Carmel Formation, S.L. Welsh and Ron and Karen Preston Kass 29173, 28 May 2013, BRY! and others to be distributed.]

Long-lived perennial herbs from taproots and basal rosettes, forming ultimate hemispheric mounds, the caudex branched, terminated by rosettes of clustered leaves, clothed with few to several years accumulated marcescent leaf

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Fig. 1. *Gilia karenae* Kass & S.L. Welsh (photo by Ron Kass).

bases; stems 0.9–1.5 dm tall; herbage sparingly to densely glandular-viscid, typically with adhering sand grains, becoming shortly stipitate-glandular above; basal leaves (0.8) 1.1–2.5 cm long, 0.5–0.8 cm wide, the blades oval-ovate to orbicular, spatulate or oblanceolate, entire or sparingly crenately to serrately toothed, rounded to obtuse apically abruptly contracted or attenuate at the base to a broad petiole to 5–10 mm long; cauline leaves much reduced and bracteate upward; inflorescence paniculately cymose, rather inconspicuously bracteate, the flowers typically clustered near branch ends; calyx 5–7 mm long, the triangular lobes shorter than the tube (hyaline between the green veins); corolla lavender, fading blue-purple, the tube 8–12 mm long, the limb 12–17 mm wide; stamens equally inserted, the anthers included; capsules and seeds currently unknown.

Sparse galleta and needle-grass with scattered juniper community at ca. 5900 ft (ca.

1750 m) elevation, on a sandy, shaly outcrop of the gypsiferous, Jurassic Carmel Formation; Navajo Basin endemic; 2 (i).

Gilia karenae (Karen's gilia) differs both in leaf conformation and flower color from the other 2 perennial members of the group of allied species. It is a striking plant with its ultimately hemispheric clumps of long-persisting leaves that shelter the branching caudex, whose branches bear persistent leaf bases for some years. Leaves are small, with short, flattened petioles and with rotund to ovate or some spatulate to oblanceolate, entire or sparingly crenate to serrate leaf blades. The blades ultimately fall away, but the petiolar bases persist as a marcescent thatch. The comparison of this plant with specimens of the other 2 perennial species demonstrates rather remarkable differences. Leaves of *G. caespitosa* are oblanceolate to linear and quite narrow (1–3 mm wide); those of *G. tenuis* are spatulate to narrowly oblanceolate or obovate, and toothed or

pinnately lobed to entire. Flower color is lavender (Fig. 1) in *G. karenae*, differing from the red flowers of *G. caespitosa* and the pale blue ones of *G. tenuis*.

Initially discovered on 21 May by Karen Ann Preston Kass and Ron Kass during a search for narrowly restricted plants, the site harboring *G. karenae* was revisited again on 28 May, when the plants were still in full flower. The clumps stand out on the otherwise barren substrate. This most remarkable species is named in honor of the co-discoverer. Its find was a function of serendipity coupled with the noted biological certainty that persistent looking will yield finding. Not everything has yet been discovered, and there are sites without number that have not been investigated for their novelties.

Differing from the other *Gilia* species, as noted in the above key, in overall corolla length (tube and lobes measured together), *G. karenae* shares the lavender flower color with the remotely disjunct biennial (winter annual) *G. haydenii*. Those 2 taxa differ markedly in total floral length and in duration, and a close affinity is not necessarily indicated by

flower color alone. *Gilia haydenii* is currently known from southeastern San Juan County, Utah, and adjacent Colorado.

The segregate genus *Aliciella* stands on the glandular hairs on calyx, pedicels and upper leaves being colorless to yellowish, and basal and lower leaves being glabrous or mostly glandular, and seeds not conspicuously gelatinous when wet; versus the glandular hairs on calyx, pedicels and leaves, if present, dark or reddish, and basal and lower leaves with short curled hairs or cobwebby hairs, and seeds gelatinous when wet (fide Fl. Four Corners Reg., 2013;817). Such variation fits neatly within the concept of the genus *Gilia*, a course followed herein.

LITERATURE CITED

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