



## Two new *Aliciella* species and a new subspecies in *Ipomopsis* (Polemoniaceae) from the western United States of America

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### Abstract

Two new species of *Aliciella*, one from California and Nevada, the other from northeastern Arizona, and a new subspecies of *Ipomopsis congesta* from the Four Corners region of Arizona, Colorado, New Mexico, and Utah are described and illustrated. From the interface of the Great Basin and Mojave deserts, *Aliciella monoensis* has long been confused with *Aliciella (Gilia) subacaulis*, but is distinct morphologically and cytogenetically. In badlands areas of Beautiful Mountain in the Chuska Mountain Range of Arizona, *Aliciella cliffordii* represents an ethnologically unique relative of *Aliciella haydenii*. *Ipomopsis congesta* subsp. *matthewii* has long been confused with *I. c.* subsp. *congesta*, *crebrifolia* and *frutescens*, but is morphologically and geographically unique.

**Key words:** taxonomy, Arizona, California, Colorado, New Mexico, Utah

### Introduction

Investigations into the diversity of Polemoniaceae in California and the San Juan River basin of Arizona, Colorado, New Mexico and Utah (Four Corners region) have revealed three undescribed taxa. The first is a species considered by previous authors (e.g., Day 1993) to be conspecific with *Aliciella subacaulis* (Rydberg 1903: 261) J.M.Porter in Porter & Johnson (2000: 70), but has been found to be morphologically, phylogenetically, cytogenetically and geographically distinct. The second species is also a member of *Aliciella*. It is a very local species that has been collected infrequently and only within the last approximately twenty years. While morphologically similar to *A. haydenii* (A. Gray 1876: 85) J.M.Porter (1998: 31), it is ethnologically and morphologically distinct. The final taxon is widely distributed, but uncommon throughout the southern Colorado Plateau (Four Corners region), and has a long history of collection; however, it has consistently and variously been misidentified. This misunderstood taxon belongs to the *Ipomopsis congesta* (Hooker 1835: 75) V.E.Grant (1956: 361) complex. While two new races have recently been named from Utah (Welsh *et al.* 2003), this subspecies of *I. congesta* has gone unrecognized and unnamed. Here I describe these taxa.

### Materials and Methods

Herbarium specimens (RSA/POM, CAS, UC/JEPS, and SJNM) were compared with field collected plant material. An evolutionary species concept (Simpson 1967, see also Wiley 1977) is employed, using enlightenment from molecular phylogenetic analyses, reproductive biology, and comparative morphology.