

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDLOA03290

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Mentzelia memorabilis* N.H. Holmgren & P.K. Holmgren

COMMON NAME: September 11 stickleaf, 9/11 blazingstar

SYNONYMS:

FAMILY: Loasaceae

AUTHOR, PLACE OF PUBLICATION: N.H. Holmgren & P.K. Holmgren, Systematic Botany (2002), 27(4): pp. 747-762. Copyright 2002 by the American Society of Plant Taxonomists.

TYPE LOCALITY: West of Clayhole Wash crossing, N of the Navajo Trail Road, Uinkaret Plateau, Mohave County, Arizona, U.S.A. 1480 m elevation.

TYPE SPECIMEN: HT: NY-688614. N.H. Holmgren 14580 & P.K. Holmgren, 17 Sep 2001. IT: ASC, ASU, BRY, CAS, COLO, RM, RSA, UTC.

TAXONOMIC UNIQUENESS: *Mentzelia memorabilis* is part of the section *Bartonia* Torr. & A. Gray, which consist of about 40 species that differ from nearly all other *Mentzelia* species in having lenticular, usually winged seeds that are horizontally aligned in the capsule. In the Intermountain Region, 29 species of *Mentzelia* are recognized; of which 17 belong to section *Bartonia*. The remaining 12 species belong to four distinctly different sections. The five new taxa described by Holmgren and Holmgren (2002), belong to the long-lived perennial suffrutescent members of section *Bartonia*, which in the Intermountain Region are mostly narrow endemics restricted to specific geological formations or soil types. (Holmgren & Holmgren 2002).

DESCRIPTION: Based on the original description: A multistemmed subshrub, 1.5-4.5 dm (6-18 in) tall, from a subterranean, woody, branched caudex surmounting a woody taproot. The herbage is puberulent with small, ascending-appressed hairs, those of the stems so small as to be almost imperceptible, the leaves are sparsely to evidently pustulate, the pustules seemingly without central hairs, the stems grayish-white, eventually exfoliating at the base of the stems, the leaf base remaining after the blade falls as a short, soft spine. Stems are erect, straight, branched throughout or at least in the upper half, the branches slender, divaricately ascending and entangled with our branches. Cauline leaves are well distributed along the stems, often curved upwards, the principle ones 2-5(6) cm x 0.7-2(3) mm, linear or filiform, subpetiolate, entire or some of the lower ones rarely with a few shallow teeth, revolute and often appearing subterete, early in the season (early June) the lowermost leaves sometimes flat and 2.5-4.6 mm wide, these leaves either early deciduous or appearing narrower as the margins become revolute. Flowers in loose, terminal, corymbosely branched clusters of 2-4, opening about an hour before sunset (Yanskey, personal communication, in Holmgren & Holmgren 2002), the bract filiform. The calyx segments 5-10 mm long, narrowly lanceolate,

becoming subulate and reflexed in fruit; petals 5, pale yellow, 6.5-13 x 4-5.2(5.8) mm, oblanceolate or narrowly spatulate, obtuse apically. Stamens numerous, the outer ones with petaloid filaments, the anthers 0.7-1.1 mm long, becoming twisted at anthesis; style 5-8 mm long. The capsule is bowl-shaped, 4-6(6.5) mm high and 3.5-4.5 mm thick; seeds horizontally set in the capsule, flattened-lenticular, 1.9-2.2 mm long, broadly ovate or elliptic-orbicular, with a narrow wing 0.2-0.4 mm wide, the body about 1.7-1.8 x 1.1-1.2 mm, the surface becoming whitish, the seed coat cells with straight radial walls and with a central cluster of 16-20 papillae on the outer tangential wall. (N.H. Holmgren & P.K. Holmgren 2002).

AIDS TO IDENTIFICATION: *Mentzelia memorabilis* is closely related to *M. polita*, however in *M. polita*, the leaves are flat, not revolute; stems and branches are rather thick and ivory white; seeds prominently winged, the wing 0.5-0.8 mm wide. A similar species, *M. springeri* (from New Mexico), is a finely branched subshrub with linear leaves and at least the upper leaves entire. It differs most noticeably from *M. memorabilis* in having more widely divaricate branches, toothed to shallowly lobed lower leaves, longer petals (13-15 mm), and narrowly cylindrical capsules (9.5-11 mm high, 2.8-4 mm thick). Another similar and probable close relative is *M. multicaulis* var. *multicaulis*, which often has entire leaves, but its flowers are much larger. (Holmgren & Holmgren 2002).

ILLUSTRATIONS:

Line drawing (*in* Holmgren & Holmgren 2002: fig 4, p. 754)

Colored photos of holotype and isotype specimens (NY 864349 & 864345, in NYBG virtual Herbarium).

TOTAL RANGE: Arizona endemic in northern Mohave County, in the Clayhole Wash drainage between Colorado City and Mount Trumbull.

The species of *Mentzelia*, section *Bartonia*, are distributed in western United States and Mexico, with one amphitropical species occurring also in Argentina and Chile. The greatest concentration of species in this section is in Nevada, Utah, Colorado, New Mexico, and Arizona. (Holmgren & Holmgren 2002).

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial subshrub.

PHENOLOGY: Flowers from late June to September, with blooms opening about an hour before sunset.

BIOLOGY: Species of the section *Bartonia* are entirely diploid, so far as known. In this section, aneuploidy rather than polyploidy is a major feature of evolution (Thompson and Lewis 1955). (Holmgren & Holmgren 2002).

HABITAT: Grows on dry gypsum-clay outcrops with sparse vegetation.

ELEVATION: 4,689 – 5,197 (1430–1585 m).

EXPOSURE:

SUBSTRATE: On dry gypsum-clay outcrops.

PLANT COMMUNITY: Grows with sparse vegetation consisting mostly of scattered shrubs of *Atriplex canescens* (four-wing saltbush), *Chrysothamnus Greenei* (Green's rabbitbrush), *Ephedra torreyana* (Torrey's Mormon-tea), *Eriogonum wrightii* (Wright's wild buckwheat), and *Tetradymia canescens* (gray horsebrush). (Holmgren & Holmgren 2002).

POPULATION HISTORY AND TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None

STATE STATUS: None

OTHER STATUS: Bureau of Land Management Sensitive (USDI, BLM, AZ 2005, 2008, 2010).

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS:

LAND MANAGEMENT/OWNERSHIP: BLM – Arizona Strip Field Office.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

According to N.H. Holmgren and P.K. Holmgren (2002), “On 11 September 2001, we were in the final stages of packing for our return to New York following our summer’s fieldwork when we witnessed on television the terrorist attack on the United States and discovered that all flights to New York from Salt Lake City were cancelled. Disbelief at what we had seen left us horrified and devastated, and to keep our equilibrium we turned to the eternal ballast of work, at the moment concerned with *Mentzelia*. In the Stanley L. Welsh Herbarium (BRY) at Brigham Young University, we discovered four specimens of an unnamed species of *Mentzelia*, collected on the Arizona Strip. We now had time to drive to northern Arizona and study it in the field before returning to New York.

There we recollected the *Mentzelia* in one of its four known localities and, along the way, discovered three new sites. We admit we did not enjoy our usual elated frame of mind when we discover something new, but somehow the lovely yellow flowers of the blazingstar, rising from the stark, barren clay Arizona hills, spoke to us of brightness and hope in this otherwise shattering time. To us, their reoccurring beauty in a bleak landscape symbolized the beauty and resiliency of the human spirit.

We have named this species in memory of those who lost their lives in the terrorist attack of September 11, and in tribute to the many heroes of that day and in those days following.”

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