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CRYPTANTHA ATWOODII (BORAGINACEAE)
A NEW SPECIES FROM ARIZONA

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ABSTRACT. *Cryptantha atwoodii* Higgins a smooth-fruited species is described as new. The plant is a rare and local species known only from Coconino County in northern Arizona.

Several years ago Dr. Duane Atwood brought to my attention an unusual cryptantha deposited in the Brigham Young University herbarium, which he had collected in the spring of 1970. It proved to be morphologically distinct from any of the other members of the group and is here described in behalf of Dr. Atwood.

***Cryptantha atwoodii* Higgins sp. nov. (Fig. 1)**

A *C. capitata* (Eastw.) Johnst. differt foliis brevis et latis, corollis 4-4.5 mm longis; calycibus 5-7 mm longis brevis ovatis.

Herba biennis erecta 0.5-3 dm alta; caulibus 1-plures, 0.3-2.5 dm longis, setosis; foliis oblanceolatis plicis obtusis, 0.2-0.6 cm latis, 1-4 cm longis, conspicuo setosis in superficiebus ambabus folii, conspicue pustulatis in infernis paginis; inflorescentiis capitatis 0.1-1.3 dm longis; sepalis sub anthesi 3-4 mm longis fructiferis accrescentibus 5-7 mm longis, setosis; pedicellis 0.5-1 mm longis; corolla alba, tuba 4-4.5 mm longa, cristis ad basi tubi destitutis, fornicibus flavis, rotundis, 0.5 mm longis, limbo 5-8 mm lato; stylus fructo excedens ab 1.5-3 mm; fructibus depressis globifer; nuculae 4 ovatae, 1.9-2.5 mm longae, 1.8-2 mm latae, marginibus acutis, utrinquae laevibus et lucidis.

Biennial or short-lived perennial somewhat caespitose herb, 0.5-3 dm tall; stems usually several arising from the branched caudex, 0.3-2.5 dm long, spreading setose with slender somewhat stiffened hairs; leaves oblanceolate, folded, obtuse, 0.2-0.6 cm wide, 1-4 cm long, setose on both surfaces, conspicuously pustulate on the dorsal surface; inflorescence capitate or with several reduced clusters below, 0.1-1.3 dm long; calyx segments lanceolate, setose, in anthesis 3-4 mm long, in fruit becoming 5-7 mm long; pedicels 0.5-1 mm long; corolla



Fig. 1. Habit of *Cryptantha atwoodii*, from N. D. Atwood 2624 (type).

white, the tube 4–4.5 mm long, crests at the base of tube lacking, fornices yellow, rounded, 0.5 mm long, limb 5–8 mm broad; style exceeding mature fruit 1.5–3 mm; fruit depressed globular, nutlets ovate 1.9–2.5 mm long, 1.8–2 mm broad, usually all 4 maturing, the margins acute not in contact, both surfaces smooth and glossy, opaque, scar straight, closed, extending from the base to near the apex, elevated margin lacking.

TYPE. Arizona: Coconino County, 7 mi N of junction of hwy 89 and 164 on hwy 89, 20 May 1970. N. D. Atwood 2624. Holotype deposited at BRY. Isotype at WTS.

DISTRIBUTION. Apparently confined to the type locality near the Gap in Coconino County, Arizona. Growing on white shaley outcrops of the Moenkopi Formation at about 4,500 feet. Flowering from April to May.

Specimens examined. Arizona: Coconino County. 9 mi N of junction hwy 164–89 along hwy 89, then 1.5 mi W; growing on white shale associated with *Coleogyne-Ephedra-Lycium*. 14 May 1972. Higgins and Atwood 5197 BRY, WTS. Ca 9.3 mi N of junction of US 89–164, ca 1.5 mi W on dirt road. 16 April 1972. N. D. Atwood 3655 BRY, WTS, ASU.

Cryptantha atwoodii is a very rare and local species. While collecting at the type location nearly two hours were spent finding enough material for three herbarium sheets; however, this may have been due to the poor growing season. The area was also heavily grazed by sheep and many of the plants were eaten back nearly to ground level.

Cryptantha atwoodii is apparently most closely related to *C. capitata* (Eastw.) Johnston (an endemic species of the Grand Canyon) and *C. jamesii* (Torr.) Payson a widespread polymorphic species of the southwestern United States. The new species differs from *C. capitata* by its biennial habit, broader leaves, shorter calyx segments, shorter flower and style lengths, and smaller nutlets. From *C. jamesii*, *C. atwoodii* differs in that it is a biennial, with capitate or narrow inflorescence, longer corolla tube which lacks crests at the base; however, the fruit is very similar in appearance.

The species is named in honor of Dr. Nephi Duane Atwood who is a student of the intermountain flora and a zealous collector of the Boraginaceae, and, who was the first to collect this rare and local species.

I would like to acknowledge Mrs. Kaye H. Thorne of Brigham Young University for providing the illustration.