

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sonorella waltoni* W.B. Miller, 1968

COMMON NAME: Doubtful Canyon talussnail

SYNONYMS:

FAMILY: Helminthoglyptidae

AUTHOR, PLACE OF PUBLICATION: W.B. Miller, 1968, Nautilus 82(2): 50-52 and 59-63.

TYPE LOCALITY: Bequaert & Miller (1973) report that it is “known only from T.L. “Peloncillo Mts, NE facing side of West Doubtful Canyon, in N part of Range, at 4,800 ft, Cochise Co. (collected in 1967).”” However, the Paratype in The Nat. Hist. Mus. of Los Angeles (LACM) was collected in 1966 “0.5 mi. S canyon mouth W side of wash, West Doubtful Canyon, Peloncillo Mountains, Cochise Co., Arizona.”

FMNH (The Field Museum 2007, accessed 2008) and ANSP (accessed 2008) both report Holotype and Paratype respectively from S side of Gardner Canyon, Santa Rita Mts., Santa Cruz Co., Arizona, USA (may be Mis-Id’s).

TYPE SPECIMEN: Paratype: LACM 1247. W.B. Miller, J.C. Bequaert, & M.L. Walton, 23 Oct 1966, 4 dry specimens collected.

The report for the Santa Rita Mountains: HT - FMNH 107201. Alan Solem Walton, 03/04/1961, Station #AS-107201, 1 dry specimen. Paratypes: ANSP 347247 (7 dry), M.L. Walton, 18 Mar 1960, Original number C-9249/8025/S-7.

TAXONOMIC UNIQUENESS: Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three common with Sonora), 3 in New Mexico, 1 in trans-Pecos Texas (in common with New Mexico), 8 in Sonora (3 in common with Arizona), and 3 in Chihuahua. *Sonorella waltoni* is 1 of 26 species in the *S. hachitana* Complex.

DESCRIPTION: Snails in the genus *Sonorella* have a “depressed globose, helicoids shell, 12 to 30 mm in diameter, umbilicate or perforate, with a wide, unobstructed mouth and a thin, barely expanded peristome, smoothish or slightly sculptured with growth-lines, occasionally with fine oblique or spiral granulation and short hairs (mainly on the early whorls), lightly colored, and normally with a dark peripheral band. Its most characteristic features are, however, in the genitalia, which lack a dart sac and mucus glands.” (Bequaert and Miller,

1973). For species in the *S. hachitana* Complex: the penis is a usually long, slender, narrowly pointed verge; and in extreme forms, the verge is thick and club-shaped. Shells are relatively large and capacious, with a smooth, silky-lustrous periostracum; usually with apical spirally descending threads. (Bequaert and Miller, 1973).

AIDS TO IDENTIFICATION: The most characteristic features of the genus *Sonorella* are, in the genitalia, which lack a dart sac and mucus glands (Bequaert and Miller 1972).

ILLUSTRATIONS:

TOTAL RANGE: In Arizona from the Peloncillo Mountains in Cochise County. The report of the Paratype and holotype for Gardner Canyon in the Santa Rita Mts of Santa Cruz County, may be a Mis-ID. (ANSP accessed 2008; Bequaert and Miller 1973; FMNH accessed 2008).

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Terrestrial gastropods do not move much, usually only to find food or reproduce. Olfaction is the primary sensory behavior utilized to find and move toward a food item (on the scale of centimeters to meters). A moving terrestrial gastropod lays down water-laden mucus on which it moves, exposing its integument to a potentially drying atmosphere, and increasing its water losses through the pallial cavity because of the necessity for gas exchange. A roosting terrestrial gastropod deploys a variety of passive mechanisms for water conservation, including the direct protection of its wet surfaces from drying conditions, avoidance of temperature extremes, the creation of more favorable microclimates and decreases in gas exchange. (A. Cook, *in* Barker 2001).

REPRODUCTION:

FOOD HABITS: Probably omnivorous, feeding on plant material (including algae, mosses, lichens, and possibly roots, shoots, leaves, flowers, anthers, pollen, fruit, seeds and rotting wood), and microorganisms associated with live and decaying vegetation; followed to a lesser extent by fungi and soil. (Speiser, *in* Barker, 2001).

HABITAT: Collected on NE facing slides along right bank (SBNMH 74931, accessed 2008), and west side of wash in mouth of canyon. The talussnail is a rock snail usually found in taluses or "slides" of coarse broken rock, generally found in crevices one to several feet below the surface, sealed to stones by their mucus. (SDCP 2005).

ELEVATION: In N part of Range of Cochise County at 4,800 feet (1464 m). (Bequaert & Miller, 1973). Elevation ranges between 4,400 and 5,400 feet (1341-1646 m), (ANSP accessed 2008, LACM accessed 2008, SBMNH accessed 2008).

PLANT COMMUNITY:

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: 3 (AZGFD, AWCS 2022)
[1C (AGFD SWAP 2012)]
OTHER STATUS: None

MANAGEMENT FACTORS: Threats include destruction or disturbance of talus slopes.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Validity of the informal *Sonorella* “species-groups” (or “complexes”) has been brought into question by Naranjo-García (1988) and Roth (1996). Further research, including the use of molecular techniques, is needed to help clarify the relationships of these informal taxa. (Gilbertson and Radke 2005).

LAND MANAGEMENT/OWNERSHIP: BLM – Safford Field Office; Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Phoenix, AZ.
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MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

The genus *Sonorella* occurs over most of Arizona (except a strip north of the Grand Canyon, an extensive northeast corner, and the small southwest *Eremarionta* area), the southwest corner of New Mexico, trans-Pecos Texas, northeast Sonora, and the northwest corner of Chihuahua, Mexico. (Bequaert and Miller, 1973).

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