

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Invertebrate Abstract

Element Code: IMGASC9430

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sonorella mustang* Pilsbry and Ferriss, 1919

COMMON NAME: Mustang talussnail

SYNONYMS: *Sonorella huachucana mustang* Pilsbry, 1939

FAMILY: Helminthoglyptidae

AUTHOR, PLACE OF PUBLICATION: H.A. Pilsbry and J.H. Ferriss, 1919, Nautilus 33(1): 19-21.

TYPE LOCALITY: Originally given as "Mustang Mts; more precisely in 1923:102 (for Pl. 1, fig. 2 of holotype), as Station 153, which is defined on p. 56 as "N side tower, East Peak) of Range, placing it in Cochise Co." (Bequaert & Miller, 1973). Although they were collected in the same Range in Cochise and Santa Cruz counties, they were not found in Pima County.

TYPE SPECIMEN: HT: ANSP 130992. J.H. Ferriss, 1918, 1 dry specimen, station 153. Paratype: AMNH 88142.

TAXONOMIC UNIQUENESS: Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three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 mustang* 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: Mustang Mountains, Cochise and Santa Cruz counties, Arizona.

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 north face, in rock crevices and bushes (FMNH 2008); also collected on east-facing peak (ANSP 2008). 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).

ELEVATION: Collected around 5,400 feet (1647 m). (Bequaert & Miller, 1973).

PLANT COMMUNITY:

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
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 – Tucson Field Office; State Land Department; Private.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- Bequaert, J.C., and W.B. Miller. 1973. The Mollusks of the Arid Southwest. The University of Arizona Press. Tucson, Arizona. Pp. 111, 115.
<http://www.co.pima.az.us/cmo/sdcp/sdcp2/fsheets/vuln/ts.html>. Fact-sheet: Talussnail, *Sonorella*. Accessed: 11/23/2005.
- Integrated Taxonomic Information System (ITIS). Retrieved 4/2/2008 from ITIS, <http://www.itis.usda.gov>.
- MCZ Malacology Collection. Accessed: 4/2/2008.
<http://collections.oeb.harvard.edu/Mollusks/MolluskDetail.cfm>.
- NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: April 2, 2008).
- Santa Barbara Museum of Natural History. 2008. SBMNH: Invertebrate Zoology Online Database Collection. <http://www.sbcollections.org/iz/recordview.php>. Accessed: 4/2/2008.
- The Academy of Natural Sciences. ANSP Malacology Search Details. Accessed: 2 April 2008. <http://clade.ansp.org/malacology/collections/index.php>.
- The American Museum of Natural History. 2002-2005. IZ Type Specimens Database. http://research.amnh.org/invertzoo/types_db/details.php. Accessed: 4/2/2008.
- The Field Museum. 2007. Department of Zoology Invertebrates Collections. Accessed 4/2/2008. <http://emuweb.fieldmuseum.org/iz/MolluscDisplay.php>.

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).

Revised: 2008-04-10 (SMS)

To the user of this abstract: you may use the entire abstract or any part of it. We do request, however, that if you make use of this abstract in plans, reports, publications, etc. that you credit the Arizona Game and Fish Department. Please use the following citation:

Arizona Game and Fish Department. 20XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.