

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

Invertebrate Abstract

Element Code: IMGASC9260

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sonorella franciscana* Pilsbry and Ferriss, 1919
COMMON NAME: St. Francis Talussnail
SYNONYMS: *Sonorella binneyi franciscana* Pilsbry and Ferriss, 1919
FAMILY: Helminthoglyptidae

AUTHOR, PLACE OF PUBLICATION: Pilsbry and Ferris, 1919, Proc. Acad. Nat. Sci. Philadelphia 70 (for 1918):318-319; Pl. 6, figs. 5-5b.

TYPE LOCALITY: As reported by Bequaert and Miller (1973), "E bank of San Francisco Riv, at Station 92, opposite Sardine Creek, in Blue Mts, Greenlee Co.; elevation not given. Also elsewhere on same river. All Stations said by Pilsbry (1939) to be ca 4,000 ft."

TYPE SPECIMEN: HT: ANSP 119052. Ferriss & Daniels; collection date unknown.

TAXONOMIC UNIQUENESS: Based on an unpublished revision by W.B. Miller (1968a, in Bequaert and Miller 1973), he recognized 68 valid species of *Sonorella* (with 19 subspecies), 57 of them in Arizona (three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 franciscana* is 1 of 15 species in the *S. binneyi* Complex. NatureServe (2008) reports *Sonorella franciscana* as a synonym of *S. binneyi*. There are collections in ANSP under both names for the same area. The collection in the Field Museum (FMNH 158026) and Integrated Taxonomic Information System (ITIS, accessed 2008) both go by *S. franciscana*. *Sonorella franciscana* is known from the San Francisco River area of the Blue Mountains where as *S. binneyi* is known from the Peloncillo Mountains. Thus the HDMS is following ITIS and FMNH and going by *S. franciscana* for this talussnail.

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. binneyi* Complex: the usually short penis is more or less thick, with a bluntly rounded verge. The shell is relatively small and globose, occasionally depressed, 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: San Francisco River in the Blue Mountains of Greenlee County, Arizona, USA.

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: 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: 3,600 – 4,000 feet (1098-1220 m).

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:

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, 119.
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- NatureServe. 2008. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer>. (Accessed: March 19, 2008).
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- The Field Museum. 2007. Department of Zoology Invertebrate Collections Database. Accessed 3/19/2008. <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).

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