

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

**Invertebrate Abstract**

**Element Code:** ILARA38020

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Archeolarca cavicola*

**COMMON NAME:** Grand Canyon Cave Pseudoscorpion

**SYNONYMS:**

**FAMILY:** Garypidae

**AUTHOR, PLACE OF PUBLICATION:** Muchmore, 1981.

**TYPE LOCALITY:** Cave of the Domes, Grand Canyon National Park, Arizona.

**TYPE SPECIMEN:** Holotype: No number given, female specimen (males are unknown):  
Welbourn, W. Calvin: 15 April 1978. Florida State Collection of Arthropods, Gainesville.

**TAXONOMIC UNIQUENESS:**

**DESCRIPTION:** Scorpion-like appearance; they bear relatively large chelae on the pedipalps, but they do not have a telson or stinger. Pseudoscorpion pedipalps are similar to those of scorpions except that usually each has a poison gland located in one or both "fingers" of the hand. Females are about 3 mm long with well sclerotized and colored palps and reddish-brown carapace, other parts light brown. Distinguished from congeners by being larger with longer appendages, and more reduced posterior eyes. Males are unknown.

**AIDS TO IDENTIFICATION:** Distinguished from congeners by being larger with longer appendages, and more reduced posterior eyes.

**ILLUSTRATIONS:**

**TOTAL RANGE:** Cave of the Domes, Grand Canyon National Park, Arizona, only known location.

**RANGE WITHIN ARIZONA:** See "**Total Range.**"

**SPECIES BIOLOGY AND POPULATION TRENDS**

**BIOLOGY:** All species typically have highly localized distributions, low dispersal and cannot survive outside the cave. Pseudoscorpions do not fluoresce under ultraviolet light.

**REPRODUCTION:** In general male pseudoscorpions deposit a spermatophore on the substrate, and the female is attracted to it by scent, or in some advanced species, the male who aids her in the uptake actively maneuvers the female to the spermatophore. After insemination, the female builds a silk lined nest. After the 2-50 eggs are laid, they remain in a sac that is attached to the underside of the female's body. Development takes place within the sac. The young undergo one molt before hatching and one during hatching before emerging from the sac. They molt twice more before becoming adults, usually a year later, and individuals may live 2-3 years.

**FOOD HABITS:** *Archeolarca* spp. primarily eats arthropods that are associated with other mammals in the cave. Pseudoscorpion pedipalps are similar to those of scorpions except that usually each has a poison gland located in one or both "fingers" of the hand. A duct issues from the poison gland and opens at the end of a tooth at the tip of the finger. Prey is caught by the pedipalps and subdued by the venom.

**HABITAT:** Subterranean cave habitat probably associated with bats and rodents. Individuals occur on or very near the soil surface and can be collected by direct capture or by sieving through the dirt. Johnson (1992) reports "Genus *Archeolarca* Hoff and Clawson is comprised of species that inhabit rodent nests and caves, largely only those that are inhabited by vertebrates such as bats and especially rodents."

**ELEVATION:** 4,000 ft (1,219 m) according to AGFD HDMS unpublished records accessed 2003.

**PLANT COMMUNITY:** Unknown

**POPULATION TRENDS:** Unknown

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None (USDI, FWS 1996)  
[C2 USDI, FWS 1994]  
[C2 USDI, FWS 1991]

**STATE STATUS:**  
**OTHER STATUS:**

**MANAGEMENT FACTORS:** Threats include groundwater pollution and recreational impacts. "Cave of the Domes is the only cave in Grand Canyon National Park for which visitation is not regulated."

**PROTECTIVE MEASURES TAKEN:** Unknown

**SUGGESTED PROJECTS:** "*A. cavicola* protected in that all known habitat occurs within the Park. The National Park Service may regulate recreational use if it is shown that

such use would adversely impact this species. More survey work should be done on this species as well as others that may inhabit the cave.”

**LAND MANAGEMENT/OWNERSHIP:** NPS - Grand Canyon National Park

## **SOURCES OF FURTHER INFORMATION**

### **REFERENCES:**

- BISON. Available: [http://www.cnr.vt.edu/fishex/nmex\\_main/species/321160.htm](http://www.cnr.vt.edu/fishex/nmex_main/species/321160.htm).
- Johnson, R. 1992. Unpublished status report for USDI, Fish and Wildlife Service.
- NatureServe Explorer: An online encyclopedia of life [web application]. 2002. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: <http://www.natureserve.org/explorer>. (Accessed: June 19, 2003).
- Smith, R.L. 1982. Venomous Animals of Arizona. The University of Arizona. Available: <http://www.ag.arizona.edu/urbanipm/scorpions/pseudoscorpions.html>.
- USDI, Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 56(225): 5883.
- USDI, Fish and Wildlife Service. 1994. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. Federal Register 59(219): 59025.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species. Federal Register 61(40): 7596-7613.

### **MAJOR KNOWLEDGEABLE INDIVIDUALS:**

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### **ADDITIONAL INFORMATION:**

**Revised:** 1992-06-08 (DBI)  
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