ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** ILARA40020
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Pseudogarypus hypogeus* Muchmore
COMMON NAME: A Cave Obligate Pseudoscorpion
SYNONYMS:
FAMILY: Pseudogarypidae

AUTHOR, PLACE OF PUBLICATION: W.B. Muchmore, J. of Arachnology 9: 47-60. 1981.

TYPE LOCALITY: Doney Fissure, Wupatki National Monument, Coconino County, Arizona, USA. Paratypes collected from Dangling Flake Crack, also in the Wupatki N.M.

TYPE SPECIMEN: HT: FSU, Gainesville (WM 4452.01001), female. W.C. Welbourn, 27 Sept 1975. Paratype: FSU, total of 4 collections (1 male, 2 females, 1 tritonymph) made on 31 January and 2 October 1976, also by W.C. Welbourn.

TAXONOMIC UNIQUENESS: In North America, there are 18 known families, roughly 100 identified genera, and about 350 described species. It is estimated that in North America there are 500 undescribed species of pseudoscorpions, and probably 75% of the North American genera need revision. (Read *in* http://www.sff.net/people/windrummer/ReadWebSite/psdoscrp.html).

DESCRIPTION: Males and females are similar but the female is a little larger. The carapace is about 1.25 times as long as posterior width; anterior margin with a rather deep notch between anterolateral and median protuberances. The eyes are well developed. The abdomen is typical; pleural membranes are without obvious sclerites, but with occasional, tiny, thickened plaques. For a more detailed description see Muchmore 1981.

AIDS TO IDENTIFICATION: This species has longer and more attenuated appendages than the local epigean form of *P. bicornis*; length of palpal femur about 1.3 mm, 1/w about 5.2, and femur about 1.9 times as long as carapace.

ILLUSTRATIONS: Line drawing (Muchmore 1981: Fig. 15, 16).

TOTAL RANGE: Known only from the Type locality in Coconino County, Arizona.

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Pseudoscorpions in general have silk glands, but unlike spiders, which have them at the tip of the abdomen, the duct openings are located on the jaws or chelicerae. They use this silk to spin cocoons, in which they over winter and molt. They can maneuver with great ease, moving forward, backward, and sideways. 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, female pseudoscorpions build a silk lined nest after insemination. 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. They feed on a milk like liquid from the female's ovaries. The young undergo one molt before hatching and one during hatching before emerging from the sac. Newly hatched nymphs may cling to the sides of their mother. They molt twice more before becoming adults, usually a year later, and individuals may live 2-3 years.

FOOD HABITS: Invertivores

HABITAT: Subterranean obligate. Habitat is beneath the surface, in earth cracks.

ELEVATION: 4,000 - 6,000 ft (1219-1829 m). The approximate elevation, that occurs throughout the Wupatki National Monument, where the type localities are from.

PLANT COMMUNITY:

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: None

MANAGEMENT FACTORS: Restricted locations may be a factor that affects this species.

PROTECTIVE MEASURES TAKEN: None

SUGGESTED PROJECTS: Studies to determine life history factors, population status and range need to be performed.

LAND MANAGEMENT/OWNERSHIP: NPS - Wupatki National Monument.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Http://www.sff.net/people/windrummer/ReadWebSite/psdoscrp.html

McGavin, G.C. 2002. Smithsonian Handbooks Insects Spiders and Other Terrestrial Arthropods. DK. New York, New York. Pp: 215.

Milne, L. & M. Milne. 1980. National Audubon Society Field Guide to North American Insects and Spiders. Alfred. A. Knopf. New York, New York. Pp: 917-918.

Muchmore, W.B. 1981. Cavernicolous species of *Larca, Archeolarca,* and *Pseudogarypus* with notes on the genera, (Pseudoscorpionida, Garypidae, and Pseudogarypidae). Journal of Arachnology 9: 47-60.

NatureServe. 2005. An online encyclopedia of life [web application]. Version 4.2. Arlington, Virginia, USA: NatureServe. Available: http://www.natureserve.org/explorer. (Accessed: January 27, 2005).

Preston-Mafham, R. & K. Preston-Mafham. 1993. The Encyclopedia of Land Invertebrate Behaviour. The MIT Press. Cambridge, Massachusetts. Pp: 58.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

The species name *hypogeus* is in recognition of its habitat beneath the surface, in earth cracks.

Revised: 2005-03-25 (AMS)