

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Tuberochernes ubicki*

COMMON NAME: A Cave Obligate Pseudoscorpion

SYNONYMS:

FAMILY: Chernetidae

AUTHOR, PLACE OF PUBLICATION: W.B. Muchmore, Journal of Arachnology 25: 206-212. 1997.

TYPE LOCALITY: Under stones in Fly Cave, Gardner Canyon, Santa Rita Mountains, Santa Cruz County, Arizona, June 24, 1988.

TYPE SPECIMEN: CAS #17360, adult male, 24 June 1988.

TAXONOMIC UNIQUENESS: Among some pseudoscorpions collected in caves in California and Arizona were some specimens, with striking modifications of the palpal chelae and first legs of males. The combination of these features, unique among pseudoscorpions, warrants the establishment of a new genus *Tuberochernes* and the description of two new species, *T. aalbui* and *T. ubicki*.

DESCRIPTION: The male and female are generally similar, but female a little larger, and palpal chelae and first legs sexually dimorphic. Palps are reddish-brown, carapace is light brown, chelicerae and legs are tan, and other parts are lighter. The carapace is longer than broad with the surface covered with low granules and with two distinct, transverse furrows. They have no eyes. The venom apparatus is developed only in the movable finger. The body length is 3.55-4.12 mm. The carapace is 1.18-1.2 mm long and the chelicerae are 0.30 mm long. For a more detailed description see Muchmore, 1997.

AIDS TO IDENTIFICATION: Much like *T. aalbui*, but a little smaller, with palp and leg 4 a little stouter, and leg 1 of male apparently raptorial, the segments being distinctly modified.

ILLUSTRATIONS: Line drawing (Muchmore 1997)

TOTAL RANGE: Arizona.

RANGE WITHIN ARIZONA: Sawmill Canyon, Santa Rita Mountains, Santa Cruz County.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: The first legs of the male look as though they might be very useful in seizing or holding prey, but there is no direct evidence that this is so. They might, rather, be used in grasping the female during courtship and sperm transfer, which, in some chernetid pseudoscorpions, can involve rather complex maneuvers. 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 overwinter 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 this family males and females engage in a courtship dance, gripping each other with their pedipalps. In general, female pseudoscorpions build a silk lined nest after insemination. After the 2-50 eggs are laid, the young remain in a sac that is attached to the underside of the female's body. Development takes place within the sac, where 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: Only known from caves at moderately high elevations.

ELEVATION: 5,249 ft (1,600 m)

PLANT COMMUNITY: Unknown

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: USFS-Coronado National Forest.

SOURCES OF FURTHER INFORMATION

REFERENCES:

- [Http://www.calacademy.org/research/entomology/typesdb/details.asp?species=&genus...](http://www.calacademy.org/research/entomology/typesdb/details.asp?species=&genus...)
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. 1997. *Tuberochernes* (Pseudoscorpionida, Chernetidae), A New Genus with Species in Caves in California and Arizona.
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 widely separated and restricted localities of the two species in this genus *T. aalbui* in California and *T. ubicki* in Arizona strongly suggest that these species are relicts of a formerly widespread ancestral population, fragmented by desertification in the intervening areas. It will not be surprising if additional representatives of this genus are found in other montane or subterranean refugia in California and Arizona. (Muchmore, 1997).

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