ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** IICOL5U010
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Cymbiodyta arizonica*
COMMON NAME: Chiricahua Water Scavenger Beetle, Arizona Cymbiodytan Water Scavenger Beetle. Chiracahua Cymbiodytan Water Scavenger Beetle
SYNONYMS:
FAMILY: Hydrophilidae

AUTHOR, PLACE OF PUBLICATION: A. Smetana, Revision of the genus *Cymbiodyta* Bed. (Coeloptera: Hydrophilidae). Mem. Ent. Soc. Canada. No. 93. 1974.

TYPE LOCALITY: Chiricahua Mountains (no exact locale given).

TYPE SPECIMEN: Holotype, CAS no number. Leech, H.B. 4 August 1908.

TAXONOMIC UNIQUENESS: One of 29 species in the genus *Cymbiodyta*.

DESCRIPTION: Scutellar stria present, elytral striae very deeply impressed; clypeus without distinct yellow spot in front of eyes. Form rather narrowly oval, moderately convex. Piccous-black, anterior margin of labrum and lateral margins of clypeus feebly and narrowly paler; pronotum and elytra changing to rufous laterally (clytra apically as well). Underside piccous; palpi, antennae and legs rufotestaceous, pubescent portions of femora darkened. Head with distinct, posteriorly somewhat widened ocular furrows furnished with a few coarse punctures; punctation dense rather than coarse, becoming gradually finer towards the clypeal margin. Pronotum moderately narrowed in front, lateral punctures coarse and distinct; punctation sparser than that of head. Elytra with sutural stria continuing as a row of close punctures right to base of elytra; with nine rather deep punctate striae, which become gradually deeper laterally and apically distinct scutellar stria between sutural and first stria in basal fourth of elytra; strial punctures becoming much coarser laterally; clytral punctation distinctly finer than on pronotum, gradually becoming finer and sparser towards the apical part where it is almost completely disappears. Mesosternum with middle portion very strongly elevated, forming a rather elongate, obtuse triangular tooth. Fifth sternite not emarginated apically. Legs moderately long, nonpubescent portion of metafemora confined to about apical third. Aedocagus rather small and wide with comparatively wide parameres, which are only feebly, sinuate medially before apices. Length 3.8 mm and width 1.9 mm.

AIDS TO IDENTIFICATION: *C. arizonica* is quite distinctive among the species with a strongly elevated mesosternum because of its rather deep elytral striae and the presence of a

scutellar stria and a sutural stria prolonged right to the base of the elytra. It only somewhat resembles *howdeni*, but the previously mentioned characters will readily distinguish it.

ILLUSTRATIONS: Line drawing of holotype (male) (Smetana 1974)
Line drawing comparisons of *Hydrophilus* with two closely related (and easily confused) water scavenger beetles, the hister beetle and an *Hydrochara* (Borror and White 1970:157)
B&W photograph, dorsal view of typical Hydrophilid (Elzinger 1987)
B&W photograph, Hydrophilid larva (Elzinger 1987)

TOTAL RANGE: Chiracahua Mountains, Cochise County, Arizona.

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

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: They rarely hang their head downward from the surface of the water. They also carry air with them below the water in a silvery film over the ventral side of the body. In swimming, they move their legs alternately. The larvae only have a single tarsal claw and the mandibles are usually toothed. They break the surface of the water with an antennae when renewing their air supply.

REPRODUCTION: Eggs are usually laid in spring, embedded in a loose web in wet places. At time of pupation, larvae leave the water and burrow in moist soil, often under stones or sticks. Pupal skin is ruptured usually in 3-7 days, adult emerges soon thereafter. Life cycle completed in about two months and adults disperse in August and September.

FOOD HABITS: Adults largely herbivorous, feeding mostly on algae and decaying vegetation but will sometimes eat dead animal tissue. Larvae are carnivorous, eating small organisms such as entomostracans, *Tubifex* and leeches with the size of their prey increasing as larvae increase in size. Larvae are sometimes cannibalistic.

HABITAT: Larvae and adults are aquatic, most often along water's edge. Pupation occurs in moist soil along water's edge. According to NatureServe (2002), "habitat is most likely creeks, although several *Cymbiodyta* species occur in other shallow habitats, including shallows of lakes, temporal pools etc. (rarely). Adults of some species tend to prefer wet litter along stream banks and a few larvae may occur there. Since adults are good fliers they may temporarily use habitats other than the preferred ones. Larva, but probably not adults, live in bottom substrates or debris."

ELEVATION: Unknown

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]
[C2 USDI, FWS 1989]

STATE STATUS: None

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)
[Forest Service Sensitive USDA, FS Region 3 1988]
[Bureau of Land Management Sensitive (USDI, BLM AZ 2000, 2005)]

MANAGEMENT FACTORS: Likely threats to this species are primarily those that affect aquatic areas that include water use, grazing, logging habitat modification, erosion, sedimentation, and siltation.

PROTECTIVE MEASURES TAKEN: Unknown

SUGGESTED PROJECTS: Unknown

LAND MANAGEMENT/OWNERSHIP: USFS - Coronado National Forest.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Borror, D.J. and R.E. White. 1970. Insects: Peterson Field Guides. Houghton-Mifflin Co., Boston, Massachusetts: pp. 156-157.

Elzinga, R.J. 1987. Fundamentals of Entomology. Prentice-Hall, Englewood Cliffs, New Jersey. pp.366, 369, 371-372.

Http://www.nearctica.com/nomina/bettle/colg-I.htm.

Johnson, R. 1992. Unpublished status survey report done under contract to United States Fish and Wildlife Service, Arizona Ecological Services, Phoenix, Arizona.

NatureServe Explorer: An online encyclopedia of life [web application]. 2002. Version 1.6. Arlington, Virginia, USA: NatureServe. Available: http://www.natureserve.org/explorer. (Accessed: July 2, 2003).

Smetana, A. 1974. Revision of the genus *Cymbiodyta* Bed. (Coleoptera: Hydrophilidae). Memoirs of the Entomological Society of Canada. Ottawa. pp.1-21; 79-85.

USDA, Forest Service Region 3. 1988. Regional Forester's Sensitive Species List.

USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.

USDI, Bureau of Land Management. 2000. Arizona BLM Sensitive Species List. Instruction Memorandum No. AZ-2000-018.

USDI, Bureau of Land Management. 2005. Arizona BLM Sensitive Species List.

USDI, Fish and Wildlife Service. 1989. Endangered and Threatened Wildlife and Plants; Animal Notice of Review. Federal Register 54(4):571.

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):58826.

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):59014.

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.

Using, R.L. 1956. Aquatic Insects of California. Universtiy of California Press. Berkeley, LA. California. Pp: 334-337.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Robert Johnson, biologist under contract to United States Fish and Wildlife Service.

ADDITIONAL INFORMATION:

To collect these beetles, remove debris which accumulates near shoreline and wash beetles out shaking this debris in deeper water. Beetles will then float to surface. Dispersing adults are also attracted to lights where they are easily captured (Johnson, 1992).

Please see this report for a listing of pertinent literature as well as a list of experts on this taxon.

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