LIVING WORLD
Journal of the Trinidad and Tobago Field Naturalists' Club
admin@ttfnc.org

ISSN 1029-3299

TRINIDAD AND TOBAGO
FIELD NATURALISTS' CLUB

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Bass, D. 2012. The Status of Four Aquatic Crustaceans from Grand Cayman, West Indies. *Living World, Journal of The Trinidad and Tobago Field Naturalists' Club*, 2012, 77-78.

The Status of Four Aquatic Crustaceans from Grand Cayman, West Indies

The status of four species of aquatic crustaceans from Grand Cayman is being reported. These include: *Anopsilana crenata* (Cirolanidae), *Macrobrachium heterochirus* (Palaemonidae), *Procambarus alleni* (Cambaridae), and *Stygiomysis* sp. (Stygiomysidae).

Anopsilana crenata is an endemic, troglobitic isopod found in caves of Grand Cayman. This unpigmented, blind species was first reported and described by Bowman and Franz (1982) from West Bay Cave (known locally as "Blue Hole"). A detailed description of this anchialine cave was also provided in the 1982 manuscript. R. Franz collected additional specimens from McLaughlin Well Cave and reported observing this species in Dolphin Cave during 1986 (Smithsonian Institution 2007). West Bay Cave was visited on 30 May, 2011 and sampling revealed the population of *A. crenata* remains abundant with both juveniles and adults being present.

A single dead specimen of the prawn *Macrobrachium* was collected from a seasonal wetland pond near Red Bay by T. Galvin on 12 April, 2007. Although the specimen was damaged, it could still be identified as *M. heterochirus*. This species of palaemonid shrimp has been reported from throughout the Caribbean Basin (Chace and Hobbs 1969; Bass 2003), but this specimen represents the first report of any taxon of Palaemonidae from the Cayman Islands. Further collections in nearby similar habitats have failed to yield additional specimens, so the population status of *M. heterochirus* on Grand Cayman is unknown.

Numerous specimens of *Procambarus alleni,* commonly known as the blue crayfish, have been collected in the vicinity of the Queen Elizabeth II Botanic Park. Several individuals were first observed in a low-lying area of the botanic park by J. Marotta during late 2008. This species was absent from invertebrate samples collected in that area prior to mid 2008 (Bass 2009), so it is presumed the blue crayfish was introduced during the later half of 2008. Since that time, this species has spread to similar habitats and ponds throughout the park and nearby properties. The native range of *P. alleni* is limited to south-central Florida (Hobbs 1976). Hobbs *et al*. (1989) suggested invasive species of crayfish disrupt the balance of aquatic ecosystems when they are introduced into places where they previously have been absent. Studies to detect possible deviations in community structure continue, but no measurable changes that may be linked to *P. alleni* have been observed.

A single specimen of the mysid *Stygiomysis* was collected from West Bay Cave on 30 May, 2011. K. Meland (pers. comm.) has examined the *Stygiomysis* and narrowed it down to be either *S. clarkei* or *S. holthuisi*. In terms of morphology, these two species are very similar, with differences being mostly in characters related to size. *S. holthuisi* reaches lengths up to 10 mm, while *S. clarkei* only grows to 6 mm. The Cayman specimen is 9 mm, which leans towards *S. holthuisi*. Furthermore, *S. holthuisi* has a wide distribution in the Caribbean region, while *S. clarkei* is only known from the Turks and Caicos Islands (Iliffe 2011). Based on these observations, this specimen is probably *S. holthuisi*. However, additional study is required to be certain of its identification and determine the population status of this species on Grand Cayman.

Biodiversity investigations continue on Grand Cayman to monitor the status of all four species of these aquatic crustaceans.

ACKNOWLEDGEMENTS

I wish to thank The Cayman Department of Environment and Cayman Turtle Farm for providing access to the sites and permission to collect specimens of aquatic invertebrates. In addition, Kenneth Meland and Tom Iliffe provided taxonomic assistance identifying the stygiomysid and H. Hobbs, III confirmed identification of the crayfish.

REFERENCES

Anonymous. 2007. *Anopsilana crenata.* Smithsonian Search Center, Smithsonian Institution, Washington, D.C. http://collections.si.edu/search/results.jsp?q=record_ID:nmnhizweb_183157

Bass, D. 2003. Comparison of freshwater macroinvertebrate communities from small Caribbean islands. *BioScience*, 53: 1094-1100.

Bass, D. 2009. A comparison of macroinvertebrate communities and their freshwater habitats in the Cayman Islands. *Living World, Journal of The Trinidad and Tobago Field Naturalists' Club,* 2009: 1-10.

Bowman, T. E. and **Franz, J.** 1982. *Anopsilana crenata,* a new troglobitic cirolanid isopod from Grand Cayman Island, Caribbean Sea. *Proceedings of the Biological Society of Washington* 95 (3): 522-529.

Chace Jr., F. A. and **Hobbs Jr., H. H.** 1969. Bredin-Archbold-Smithsonian Biological Survey of Dominica. The freshwater and terrestrial decapod crustaceans of the West Indies with special reference to Dominica. *United States National Museum Bulletin*, 292. 258 p.

Hobbs Jr., H. H. 1976. Crayfishes (Astacidae) of North America. Water Pollution Control Research Series 18050 ELDO7/72. U.S. Environmental Protection Agency. Cinncinatti, OH. 173 p.

Hobbs, H. H., III, Jass, J. P. and **Hunter, J. V.** 1989. A re-

view of crayfish introductions with particular emphasis on two North American species (Decapoda: Cambaridae). *Crustaceana*, 56: 299-316.

Iliffe, T. M. 2011. Anchialine Caves and Cave Fauna of the World, Texas A&M University, Galveston, TX. http://www.tamug.edu/cavebiology/fauna/mysids/S_holthuisi html

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