

Current Status

This project is completed and the paper published in December 2008

- McCormack, R.B. & Coughran, J. 2008. *Euastacus maccai*, a new freshwater crayfish from the Great Dividing Range, New South Wales. *Fishes of Sahul*, Vol 22, (4).

Project: 100004

***Euastacus maccai* n. sp., a new freshwater crayfish from the Great Dividing Range, New South Wales.**

Research Brief

Aims

This new species, *Euastacus maccai* n. sp., was first collected by the senior author in 1997. At that time, initial investigations could not clarify the taxonomic status of the species. No further investigation followed until a new specimen was captured in 2005, as part of the privately funded Australian Crayfish Project, from the area of Retreat (60 km north of Tamworth). The strong burrowing ability of this species was recognized during this collection. Six hours of digging by a three-man team resulted in the capture of this single specimen (ACP 100305) from the entire area inhabited (estimated at approximately three acres). No other inhabited areas have been found near that site.

However, continued collecting revealed further sites approximately 100 kilometres south, near Hanging Rock. Although burrows were observed and attempts at excavation were undertaken in 2005, no new specimens were captured until 2006. At this time, another 10 apparent sites were discovered in this southern section of the species' range, and greater effort was placed into attempting to capture specimens for DNA analysis and description. However, despite this increased effort only two further specimens were captured, both from the most southern site of record near Hanging Rock. Increasingly dry drought conditions in 2006 appeared to drive this species to depths of over 1.2 m in their burrow systems, beyond our reach.

Following an isolated storm late in 2006, three new apparent sites were located in Riamukka State Forest. By applying the knowledge and experience gained over the previous years with this species, we were able to capture 15 specimens over a 12 hour period. Similarly, the wet conditions of late 2007 and early 2008 have facilitated the collection of further specimens, and there is now sufficient material to describe this species.

The following description is based on established morphological characters from the most recent revision of the genus (Morgan 1986, 1988, 1989, 1997) and subsequent works (Short and Davie 1993; Coughran 2002, 2005; Coughran and Leckie 2007). DNA samples from the Riamukka specimens were sent to the Carnegie Museum of Natural History in Pittsburgh, USA, for genetic analysis.

Outline

The MS paper is a joint works between Robert B McCormack - Australian Aquatic Biological (aabio@skymesh.com.au) & Dr Jason Coughran, Southern Cross University (jason.coughran@scu.edu.au)

Abstract

A new species of freshwater crayfish genus *Euastacus*, *E. maccai* n.sp., is described from the Nandewar, Macdonald and Great Dividing Ranges in central eastern New South Wales, Australia. This new species most closely resembles *E. simplex* Riek 1956, to which it differs in spination of the rostrum, abdomen and chelae, in the morphology and orientation of the chelae and in colouration. *Euastacus maccai* n.sp. has been recorded from sites across a relatively large area, roughly bounded by Nowendoc, Nundle and Retreat. Unusually, the species occurs along the tops of mountain ridges, and therefore could be considered to inhabit catchments on either side of these ridges. Furthermore, the species occurs on both eastern and western sides of the Great Dividing Range, a major biogeographic boundary for the genus generally. The species exhibits an unusual biology, inhabiting elaborate burrows in terrestrial habitats away from water bodies. Aspects of its morphology and ectosymbiotic fauna are discussed with regard to its unusual biology.

For Further Information

Refer Project No.:100004

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