



Four new infaunal decapod crustaceans (Caridea: Alpheidae and Gebiidea: Axianassidae) from Lizard Island, Australia, one of them also occurring in Moorea, French Polynesia

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Abstract

Four new species of marine infaunal decapod crustaceans are described from Lizard Island, Great Barrier Reef, Australia. Three of them belong to the caridean shrimp family Alpheidae, viz. *Athanas shawnsmithi* n. sp., *Athanas daviei* n. sp., and *Athanopsis saurus* n. sp.; all three were collected from burrows of unknown hosts. The fourth species, *Axianassa heardi* n. sp. from the burrowing mud-shrimp family Axianassidae, is described based on a male holotype from Lizard Island and an additional female specimen from Moorea, Society Islands, French Polynesia. The presence of a toothed diaeresis on the uropodal exopod and a well-developed epipod on the second maxilliped in *A. heardi* n. sp. are new characters for the genus *Axianassa*.

Key words: Decapoda, Caridea, Alpheidae, Gebiidea, Axianassidae, shrimp, mud-shrimp, Australia, French Polynesia

Introduction

The infaunal decapod crustaceans of Australia's vast Great Barrier Reef remain relatively poorly unknown. For instance, McNeill (1968) reported only two callianassid ghost-shrimps and a few burrowing crabs, mostly from Low Isles. Poore & Griffin (1979) reported 40 species of Axiidea and Gebiidea from Australia, but only a few of them were from the Great Barrier Reef. Banner & Banner (1973, 1975, 1982) reported over 140 species of alpheid shrimps from Australia, including the Great Barrier Reef. Among them were at least 15 species of *Alpheus* Fabricius, 1798 excavating burrows in soft sediments; however, not a single species was associated "commensally" with other burrowing animals. To the author's knowledge, the first commensal infaunal alpheid described from Australia was *Salmones seticheles* Anker, 2003, from Northern Territory (Anker 2003).

In February 2009, the author collected several specimens of burrow-associated alpheid shrimps and a specimen of mud-shrimp in the vicinity of Lizard Island Research Station on Lizard Island, located in the northern section of Great Barrier Reef, Australia, as part of a CReefs survey (see acknowledgements). The alpheids belonged to two genera, *Athanas* Leach 1814 and *Athanopsis* Coutière, 1897, with two morphologically very distinct species in the former genus and one species in the latter genus. The mud-shrimp was identified as a somewhat unusual member of *Axianassa* Schmitt, 1924, presently the only genus recognised in the family Axianassidae (De Grave *et al.* 2009). All four species were recognised as new to science and are described and illustrated below. The description of the new species of *Axianassa* includes an additional specimen collected by the author during the Biocode survey of Moorea, French Polynesia, in November 2009 (see acknowledgments).

All type material is deposited in the Crustacea collection of Queensland Museum, Brisbane, Australia (QM); non-type material is deposited in the collections of Florida Museum of Natural History, University of Florida, Gainesville, FL, USA (FLMNH UF). Carapace length (CL, in mm) was measured along the mediodorsal line from the tip of the rostrum to the posterior margin of the carapace. All specimens were photographed alive by the author. Abbreviations used in the text: fcn, field collection number; P, pereopod.