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## Rediagnosis of Callianideidae and its genera (Crustacea: Decapoda: Axiidea), and description of a new species of *Heardaxius* Sakai, 2011

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### Abstract

Callianideidae and Thomassiniidae, two families of Axiidea, are synonymised and Callianideidae diagnosed. The six genera, *Callianidea* H. Milne Edwards, 1837, *Crosniera* Kensley & Heard, 1991, *Mictaxius* Kensley & Heard, 1991, *Heardaxius* Sakai, 2011, *Paracallianidea* Sakai, 1992 and *Thomassinia* de Saint Laurent, 1979 are diagnosed and all species listed. *Garyia* Sakai, 2011 is synonymised with *Thomassinia*. A key to genera is provided. A new species *Heardaxius rogerbamberi* is described from Papua New Guinea. *Thomassinia aimsae* Poore, 1997 is newly recorded from Papua New Guinea.

**Key words:** Crustacea, Decapoda, Axiidea, Callianideidae, Thomassiniidae, *Callianidea*, *Crosniera*, *Mictaxius*, *Heardaxius*, *Paracallianidea*, *Thomassinia*, *Garyia*, synonymy, new species

### Introduction

The status of Callianideidae Kossman, 1880 and Thomassiniidae de Saint Laurent, 1979, two families of burrowing axiidean shrimps, is complicated. Some view them as separate, others as synonymous. Both were erected as subfamilies of Callianassidae based on a single species, Callianideidae for *Callianidea typa* H. Milne Edwards, 1937 and Thomassiniidae for *Thomassinia gebioides* de Saint Laurent, 1979. In a significant revision Kensley & Heard (1991) treated *Marcusiarius* Rodrigues & Carvalho, 1972 (not Carvalho & Rodrigues, 1973 as stated by Sakai, 2011), *Meticonaxius* De Man, 1905, *Thomassinia* de Saint Laurent, 1979 and three new genera, *Crosniera*, *Michelea* and *Mictaxius*, as members of Callianideidae. Sakai (1992) allocated the genera to four families, Callianideidae (*Callianidea*), Meticonaxiidae Sakai, 1992 (*Marcusiarius*, *Meticonaxius*), Micheleidae Sakai, 1992 (*Michelea*) and Thomassiniidae (*Crosniera*, *Mictaxius*, *Thomassinia*). Poore (1994) found Micheleidae and Meticonaxiidae synonymous, and Thomassiniidae (three genera) and Callianideidae to be sister taxa each with numerous synapomorphies on the basis of a cladistic analysis of morphological data. Poore (1997) diagnosed and reviewed all families and genera in detail while adding new species.

Robles *et al.* (2009) found *Callianidea typa* embedded in a clade between *T. gebioides* and ‘Thomassiniidae n. gen.’ in a Bayesian analysis of 16S and 18S rDNA data. Dworschak *et al.* (2012) concluded on the basis of this evidence that the monophyly of Thomassiniidae was doubtful but provisionally diagnosed the family nevertheless. Callianideidae and Thomassiniidae were recognised in the comprehensive but flawed review of ‘Axiioidea’ by Sakai (2011) and he assigned some existing species to two new thomassiniid genera, *Garyia* Sakai, 2011 and *Heardaxius* Sakai, 2011.

In this contribution dedicated to friend and colleague the later Roger Bamber, morphological support for separation of Callianideidae and Thomassiniidae is reassessed and found wanting. Micheleidae/Meticonaxiidae are not the subject of this work. All genera are reviewed and rediagnosed. A new species is described and others noted. Material is deposited in the Muséum nationale d’Histoire naturelle, Paris (MNHN), Senckenberg Museum, Frankfurt (SMF), Florida Museum of Natural History, Gainesville (FMNH) and Museum Victoria, Melbourne (NMV). Dimensions are given as carapace length (cl.) from tip of the rostrum to middorsal posterior margin of the carapace.