



## The ANDEEP Tanaidacea (Crustacea: Peracarida) revisited III: the family Akanthophoreidae

KIM LARSEN<sup>1</sup> & CATARINA L. ARAÚJO-SILVA<sup>1,2</sup>

<sup>1</sup>Aquatic Ecology and Evolution Department, CIIMAR (Centro Interdisciplinar de Investigação Marinha e Ambiental), Rua dos Bragas, 289, 4050–123 Porto, Portugal. <sup>2</sup>Capes Foundation, Ministry of Education of Brazil, Brasília–DF, 70040–020, Brazil. E-mail: [tanaids@hotmail.com](mailto:tanaids@hotmail.com); [katelas@hotmail.com](mailto:katelas@hotmail.com)

### Abstract

A restricted phylogenetic analysis is conducted to test if the family Akanthophoreidae is monophyletic. The family was found to be monophyletic with a Bremer support of 11 and is redefined to include the genera *Akanthophoreus*, *Chaulioleona*, *Mimicarhaphura*, *Parakanthophoreus* **gen. nov.**, *Paraleptognathia*, *Stenotanais*, and *Tumidochelia*, while *Gejavis* is removed. *Akanthophoreus* and *Paraleptognathia* are redefined and now consist of only four and two species respectively. The remaining species previously assigned to these genera are transferred to a new genus *Parakanthophoreus*. A key to the genera of the family is presented. Two new species of *Chaulioleona*, *C. ciimari* and *C. andeepi*, and one of *Parakanthophoreus*, *P. greenwichius*, are described from the ANDEEP I–III and ANDEEP-SYSTCO material.

**Key words:** ANDEEP I–III, ANDEEP-SYSTCO, Tanaidacea, Tanaidomorpha, Akanthophoreidae, *Parakanthophoreus*, Antarctica, Restricted-phylogeny

### Introduction

The ANDEEP (ANtarctic benthic DEEP-sea biodiversity) collections obtained from cruises conducted by the University of Hamburg and the Senckenberg Institute in 2002, 2005, and 2007 (ANDEEP I–III and ANDEEP-SYSTCO), have revealed much tanaidacean material that remains to be examined. This is the third paper from this re-examination, the first two concerning the families Agathotanaidae Lang, 1971 (Larsen *et al.* 2013), Anarthruridae Lang, 1971, and *incertae sedis* (Larsen 2013) while this study focuses on the family Akanthophoreidae Sieg, 1986. An overview of previous tanaidacean studies of the ANDEEP material can be found in Larsen (2013) and references herein.

The first family level name (subfamily) was established by Sieg, 1986. Recently Błażewicz-Paszkowycz & Bamber (2011) elevated the subfamily Akanthophoreinae to full (monotypic) family status and later *Chaulioleona* Dojiri & Sieg, 1997 was included in this family (Błażewicz-Paszkowycz, Bamber & Józwiak 2013). However, the diagnosis (Błażewicz-Paszkowycz & Bamber 2011:25) is almost identical with that of Sieg's (1986) diagnosis of the anarthrurid subfamily Akanthophoreinae, with a few omissions to adjust for genera since removed from this taxon. Sieg's (1986) diagnosis is at best insufficient and in some places erroneous and so a reappraisal is needed.

No tanaidacean worker would dispute that the phylogeny and systematics of the order is unresolved. At the same time, all attempts to construct an all-encompassing phylogeny have failed to provide much resolution owing to excessive character reversals, high numbers of taxa, and a general lack of stable characters. A phylogenetic analysis by Guerrero-Kommritz & Brandt (2005) showed a clear affinity between *Chaulioleona* and *Paraleptognathia* Kudinova-Pasternak, 1981 (including *Akanthophoreus* Sieg, 1986 which at that time was synonymized with *Paraleptognathia*), suggesting a 'generic cluster'. A restricted phylogeny' (see Bird & Larsen 2009) is conducted here to examine such a relationship.

This paper also describes three new species of Akanthophoreidae: one of *Parakanthophoreus* and two of *Chaulioleona*, from the Subantarctic-Antarctic region. New records of *C. nickeli* Guerrero-Kommritz, 2005 are also included.

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