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## The ANDEEP Tanaidacea (Crustacea: Peracarida) revisited II: the family Anarthruridae and family *incertae sedis*, with descriptions of three new species and the erection of a new genus

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### Abstract

Specimens collected during the ANDEEP I and II expeditions revealed three new species belonging to the family Anarthruridae and family *incertae sedis*. One new species of Anarthruridae, *Ithyomus antarcticus* n. sp. is described. Also described are two new species belonging to genera currently not assigned to a family; one in the genus *Parafilitanais* (*P. denticulus* n. sp.) and one in *Pseudoarthrura* (*P. tuberculata* n. sp.). The genus *Cristatotanais* is removed from Anarthruridae, while *P. setoserrata* is removed from *Pseudoarthrura* and elevated to genus rank under the name *Selvagentanais* gen. nov.

**Key words:** Tanaidacea, Tanaidomorpha, Anarthruridae, family *incertae sedis*, *Ithyomus*, *Parafilitanais*, *Pseudoarthrura*, *Selvagentanais*, ANDEEP I–III, ANDEEP-SYSTCO, Antarctica

### Introduction

The tanaidaceans collected during the ANDEEP (ANTArctic benthic DEEP-sea biodiversity) expeditions have been extensively studied by a number of authors (Błażewicz-Paszkowycz & Larsen 2005, Józwiak & Błażewicz-Paszkowycz 2007, 2011, Brandt et al. 2012). This is the second study from a recent LMCEE revision of the ANDEEP tanaidacean material. The first dealt with the families Agathotanaidae (Larsen et al. 2013) while this study focuses on the family Anarthruridae and the genera currently considered family *incertae sedis*.

Lang (1971) erected the family Anarthruridae and Sieg (1986) transferred a multitude of genera from other families to Anarthruridae. Later this family was restricted again by Larsen & Wilson (2002). Anarthruridae has thus had its fair share of changes and revisions, but with the work by Bird (2004, 2007) it finally seems to have reached a stable diagnosis and an acceptable level of consensus. Only three species of Anarthruridae have been recorded in the sub-Antarctic/Antarctic region from previous studies (Sieg 1986, Kudinova-Pasternak 1990) and even though the new species described below brings the number up to four, this indicates that the family is not a common component of the Antarctic fauna.

Anarthruridae is a cosmopolitan family and while most genera do not appear widely distributed, this is likely to be a result of their complicated systematics and of sampling effort. The family is particularly well represented in deep-sea samples (Lang 1968, Kudinova-Pasternak 1976, Bird 2004, Larsen 2005, Bird 2007) but is also found in shallow- and shelf waters (G.O. Sars 1882, Dollfus 1898, Hansen 1909, Greve 1965a,b, 1966, 1968, Holdich & Jones 1983a,b, Kudinova-Pasternak 1984, Dojiri & Sieg 1997). Błażewicz-Paszkowycz et al. (2011) included the genus *Cristatotanais* in the Anarthruridae but the cheliped attachment (lack of pseudocoxa) is in conflict with the family diagnosis by Bird, 2004 and this genus must be considered family *incertae sedis* for now.

A large number of paratanaoidean genera were not assigned to family in the phylogenetic analyses of Larsen & Wilson (2002) and Bird & Larsen (2009), owing to a combination of poor descriptions, lost type material, lack of female specimens, and, most importantly, a high degree of homoplasy. The continuation of this condition is clearly undesirable from a systematic point of view and ongoing research on the ANDEEP collections at least managed to