



Family *incertae cedis* *

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Abstract

A heterogeneous collection of tanaidomorph species that are no longer assigned to existing families is recorded in the Kurile-Kamchatka Trench and the Japan Trench, belonging to six genera: *Akanthophoreus*, *Chauliopleona*, *Exspina*, *Leptognathia sensu lato*, *Leptognathioides* and *Robustochelia*. Three new species of *Akanthophoreus* Sieg, 1986 are described, and four putative taxa are outlined to facilitate consistent identification in future studies.

Key words: Tanaidacea, *Akanthophoreus*, *Chauliopleona*, *Exspina*, *Leptognathia*, *Leptognathioides*, *Robustochelia*, Kurile-Kamchatka Trench, the Japan Trench

Introduction

Complexity, instability and seemingly irreducible inconsistency have characterized the taxonomy of tanaidomorph tanaidaceans for many years, especially at family level (Larsen & Wilson 2002). The longest period of stability existed for about thirteen years, between the writings of Sieg (1973 - or 1976 for published date) and Sieg (1986a), after which a new classification was established. For the family Leptognathiidae *sensu* Sieg, 1973, this was largely, although not solely, based on an analysis of pereopod setation, in particular the presence or absence of spiniform setae, or 'spines', on the carpus of pereopod 1 (Sieg 1986a); this resulted in the establishment of two subfamilies (Akanthophoreinae Sieg, 1986a and Leptognathiinae Sieg, 1973) within a greatly expanded Anarthruridae Lang, 1971. This was all overturned following a phylogenetic analysis of Paratanoidea genera based on representative species, by Larsen & Wilson (2002). Part of its outcome, aside from the establishment of several new families such as the Colletteidae and Tanaellidae, was the removal of many genera from new and existing families into a state of *incertae cedis*. Their reduced status was attributed largely to poor or inadequate descriptions but it was accepted that some of the vagueness in the analysis was due to insufficient character states. It is also evident that a proportion of the characters used in the analysis, or their given states for particular taxa, were inappropriate or invalid. Additional complexity, and factors that have misled earlier authorities, are intrusion by extensive homoplasies, apparent character-state reversals and convergent evolution. At some point this will require a new analysis.

Of direct relevance to the present study of Kurile-Kamchatka Trench and the Japan Trench tanaidaceans is the recording of many species that belong to this large *incertae cedis* category, several of which were omitted from the listing given by Larsen & Shimomura (2007). Among them are several which belong to a genus that is equally complex and controversial, *Akanthophoreus* Sieg, 1986a. Three new species are described and three putative species are outlined, along with accounts of species belonging to the genera *Chauliopleona* Dojiri & Sieg, 1997, *Exspina* Lang, 1968, *Leptognathioides* Bird & Holdich, 1984, *Robustochelia* Kudinova-Pasternak, 1983 and *Leptognathia sensu lato*.