



Description of four new species of *Mesocletodes* Sars, 1909 (Copepoda, Harpacticoida, Argestidae) and redescription of *Mesocletodes robustus* Por, 1965 from the South Atlantic, including remarks on the *Mesocletodes abyssicola*-group*

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Abstract

The present paper focuses on taxonomic and phylogenetic investigations of the family Argestidae Por, 1986. Samples, collected during the cruise DIVA 1 (M48/1) to the Angola Basin on board of RV “Meteor” (2000), contain amongst others several specimens belonging to the *Mesocletodes abyssicola*-group (Harpacticoida, Argestidae) which includes ten species so far. This paper deals with the description of *Mesocletodes angolaensis* sp. nov., *M. bicornis* sp. nov., *M. dorsiprocessus* sp. nov. and *M. meteorensis* sp. nov. as well as the redescription of *Mesocletodes robustus* Por, 1965. The four new species bear cuticular processes on the cephalothorax and/or telson, as is characteristic for the *Mesocletodes abyssicola*-group. These processes are supposed to be of high phylogenetic value, since they do not occur in any other taxon within the Argestidae, and are always inserted at the same position. Therefore, the *Mesocletodes abyssicola*-group is herein considered monophyletic.

Key words: deep sea, Angola Basin, DIVA, taxonomy

Introduction

Members of Argestidae Por, 1986 are free-living Harpacticoida with a worldwide distribution, mostly found in muddy sediments (Lang 1948; Sars 1909). Although they are one of the most abundant taxa in deep-sea localities, some argestid species have also been collected from shallow waters (Lang 1948; Por 1979; Sars 1909). Thus, Argestidae can be regarded as a typical, but not an exclusive deep-sea taxon (George 2004; Hicks & Coull 1983; Huys & Conroy-Dalton 1997; Noodt 1971). Their high abundance, high species richness and worldwide distribution make them highly suitable for phylogenetic, biogeographical and chorological investigations at the species level. Furthermore, due to clearly detectable diagnostic characters, they are easy to recognise in meiofauna samples. Therefore, Argestidae may constitute an adequate representative even for generalized meiobenthic deep-sea research.

To date, the genus *Mesocletodes* contains 32 species (Wells 2007) [Boxshall & Halsey (2004) erroneously mention only 29 species], 10 of which are pooled in the *Mesocletodes abyssicola*-group due to the presence of cuticular processes on the cephalothorax and telson (Becker 1972; Bodin 1997; Lang 1936b; Sars 1921; Schriever 1985; Scott T. & A. 1901). The remaining 22 species lack such processes and are therefore united in the *Mesocletodes inermis*-group (Bodin 1997).

The aim of the current (ongoing) investigation is, to shed some light on the phylogenetic status of the *Mesocletodes abyssicola*-group. The present publication includes remarks on whether the cuticular processes