



## A new family and genus of calanoid copepods (Crustacea) from the abyss of the Atlantic Ocean

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### Abstract

*Kyphocalanus* **gen. nov.** is described from female specimens collected at abyssal depths above the sea bed in the Atlantic Ocean. Although the new genus shares the presence of sensory setae on maxilla and maxilliped with other Bradfordian families of the superfamily Clausocalanoidea, it does not fit the diagnosis of any of these families. The family Kyphocalanidae **fam. nov.** is established for the genus and 4 species are identified, although we only had enough suitable material to name one of them: *Kyphocalanus atlanticus* **sp. nov.** Kyphocalanidae is defined by the following apomorphies: maxillule supplied with 3 setae on praecoxal arthrite; maxilla endopod has 8 thick worm-like sensory setae distinctly longer than sclerotized setae of maxilla endites, and the maxilliped shows a 1, 2, 0 setal armament with only worm-like sensory elements of the three praecoxal endites respectively. Segmentation and setation of the swimming legs of the new genus are typical of Clausocalanoidea.

**Key words:** Copepoda, Calanoida, *Kyphocalanus* **gen. nov.**, taxonomy, deep benthopelagic

### Introduction

The deep-water benthopelagic calanoid fauna of the world's ocean is poorly known and each new collection in this biotope extends the known biodiversity of near-bottom calanoids (Bradford-Grieve 2001; Markhaseva & Ferrari 2005; Schulz 2005; Ohtsuka *et al.* 2005). The collections of the German expedition DIVA-I (Latitudinal Gradients of Deep-Sea Biodiversity in the Atlantic Ocean) obtained in the year 2000 in the abyss of the South Atlantic were of this particular kind and have enriched the list of benthopelagic taxa with the recently newly described clausocalanoidean family Rostrocalanidae Markhaseva, Schulz & Martinez Arbizu, 2008 and a new arctokonstantinid genus *Caudacalanus* Markhaseva & Schulz, 2008 (Markhaseva *et al.* 2008; Markhaseva & Schulz 2008). New calanoids found in the near-bottom contribute to the amazing discoveries of new crustacean (e.g. isopod and harpacticoid) species and genera, obtained by the DIVA-I expedition (Brandt 2004; Brix 2007; Mursch, Brenke & Wägele 2008; Willen 2009). Herein, a new benthopelagic clausocalanoidean genus is described from the Atlantic Ocean and 4 species are attributed to it. The new genus shares the presence of sensory setae both on maxilla and maxilliped with "Bradfordian" families of Clausocalanoidea; its characteristics, however, do not fit any of these families, thus a new family Kyphocalanidae is established for the genus. Since Ferrari & Steinberg (1993) named families of the superfamily Clausocalanoidea characterized by the possession of sensory setae on maxilla and maxilliped as "Bradfordian" families, this term has been set up for Diaixidae, Tharybidae, Scolecitrichidae, Parkiidae, Phaennidae and Rostrocalanidae.

*Kyphocalanus atlanticus* **sp. nov.** is described from the South Atlantic. Three additional species collected at abyssal depths of the North and South Atlantic and the Southern Ocean are included in the genus, but