



First record of Tanaidacea (Crustacea) from a deep-sea coral reef in the Gulf of Guinea

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Abstract

Four undescribed species of Tanaidacea were discovered during a baseline monitoring program conducted off the coast of Ghana. The specimens came from a deep-water reef largely composed of the ahermatypic coral, *Lophelia pertusa*. The tanaidacean material was collected during November 2012 onboard the RV *Dr Fridtjof Nansen* using a van Veen grab in depths of between 375 and 386 m. Three of the new species described herein are tanaidomorphans belonging to the genera *Bathyleptochelia* (Leptocheliidae), *Pseudotanais* (Pseudotanaidae) and *Cryptocopoides* (Cryptocopidae). The fourth species, an apseudomorph, belongs to *Calozodion* (Metapseudidae), a genus hitherto known only from shallow waters (<200 m). This report constitutes the first records of tanaidaceans from a deep-sea *Lophelia* reef.

Key words: Tanaidacea, West Africa, Ghana, deep-sea reefs, *Lophelia pertusa*

Introduction

In the recent assessment of global diversity it was shown that the smallest invertebrates are the most severely underestimated groups of marine organisms, although their role in the assessment of overall biodiversity is unquestionable (Appeltans *et al.* 2012). The small crustaceans, for example Tanaidacea, Isopoda and Amphipoda, are at the top of that list and the total number of species representing each of the groups might be at least an order higher than is actually given (Błażewicz-Paszkowycz *et al.* 2012; Poore & Bruce 2012).

Deep-sea coral reefs sustain a high diversity comparable to tropical coral reefs (Jensen & Frederiksen 1992; Freiwald *et al.* 2002; Mortensen & Fosså 2006; Roberts *et al.* 2006). They are classified as ecosystems associated with light hydrocarbon seeps, where primary production is sustained by chemoautotrophic microorganisms (Hovland 1990; Hovland & Risk 2003). The reef structures made by *Lophelia* Milne-Edwards & Haime grow up to 45 m high and 100 m in diameter (Hovland & Risk 2003) and are dated at hundreds or thousands years old. Due to their binding of carbon compounds dissolved in seawater, they are recognized as a potential buffer to climate change effects (www.eu-hermes.net).

During monitoring investigations off the coast of Ghana, in the Gulf of Guinea, from the RV *Fridtjof Nansen* in November 2012, six van Veen grab samples from a newly-discovered deep-water reef constructed mainly by *Lophelia pertusa* Linnaeus were obtained (Serigstad *et al.* unpublished data). In this paper we report upon the presence of, and describe, four new species of tanaidacean crustaceans obtained from these mounds of *L. pertusa*.