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Polynoidae (Annelida: Polychaeta) associated with cold-water coral reefs of the northeast Atlantic and the Mediterranean Sea

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Abstract

An overview of polynoid scale worms known to occur on cold-water coral reefs of the northeast Atlantic and the Mediterranean Sea is given, including a key for identification of species. *Harmothoe oculinarum* (Storm, 1879), *H. vesiculosa* Ditlevsen, 1917, and *Leucia violacea* (Storm, 1879) comb. nov. are redescribed. A lectotype is designated for *H. vesiculosa* and the generic status of *Leucia violacea* (Storm, 1879) comb. nov. and *Neolagisca jeffreysi* (McIntosh, 1876) comb. nov. are changed. The biogeography of the species is discussed.

Key words: taxonomy, biogeography, *Acanthicolepis, Harmothoe, Leucia, Neolagisca*

Introduction

Cold-water coral reefs have long been known to local fishermen as productive fishing grounds especially in the Northeast (NE) Atlantic. Increasing exploitation of deep-water resources in recent years has raised awareness and subsequently shown that the extent and distribution of these reefs is apparently much wider than anticipated. They occur mainly in areas of enhanced primary productivity and water flow on the continental shelf edge, the continental slopes, and seamounts (Roberts 2005). Cold-water coral species, e.g., *Lophelia pertusa* (Linnaeus, 1758), a key structural species in the NE Atlantic, form a three-dimensional skeletal framework simultaneously providing niches for other species and hard substrate for the settlement of a wide variety of suspension feeding invertebrates (Rogers 1999). With about 1300 species reported from *L. pertusa* reefs in the NE Atlantic (Roberts et al. 2006), they are important biodiversity hotspots similar to shallow tropical warm-water coral reefs. Cold-water coral reefs of the Mediterranean Sea are impoverished in terms of coral species and associated fauna (Taviani et al. 2005, Zibrowius & Taviani 2005), which can be explained by factors discussed elsewhere for the paucity of deep benthic Mediterranean fauna in general (e.g., Fredj & Laubier 1985) and the polychaete taxa Serpulidae and Aphroditoidea in particular (Ben-Eliahu & Fiege 1996; Barnich & Fiege 2003).

Polychaeta as a key marine taxon, also plays a dominant role in diversity and abundance on cold-water coral reefs in the NE Atlantic. For example Jensen & Frederiksen (1992) reported 1467 specimens of Polychaeta (31.7% of the total fauna) comprising 67 taxa (22.5% of all taxa) from 18.46 kg of life and dead *L. pertusa* from the Faroe Shelf. Polynoidae, a highly diverse and ubiquitous family of polychaetes, are motile predators/scavengers playing an important role in this peculiar habitat. Some species might even be restricted to cold-water coral reefs, since so far they

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