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Mesonerilla neridae sp. nov. (Nerillidae): First meiofaunal annelid from deep-sea hydrothermal vents

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Abstract

Though most common in coastal sandy bottoms, nerillid annelids have been found in a broad variety of habitats around the world and two genera have previously been reported from the deep sea. During a cruise to the southern East Pacific Rise and northern Pacific Antarctic Ridge (near Easter Island) in 2005, six specimens of a new species of *Mesonerilla* were collected at depths of 2234–2649 m. Samples were taken via DSV *Alvin* with a slurp gun collecting fine silt and volcanic glass shards in cracks, fissures, and mussel beds from 5–20 m away from active venting areas. As well as being the first deep-sea hydrothermal vent associated nerillid, this is the first record of an adult meiofaunal annelid from deep-sea hydrothermal vent areas and the first record of *Mesonerilla* from the deep sea. Based on the new material we here describe a new species of *Mesonerilla*, *M. neridae* sp. nov., with nine chaetigerous segments, three antennae, long chaetae, and almost no ciliation. It resembles the subtidal, interstitial *M. roscovita* in the shared presence of a short median antenna and *M. fagei* and *M. lüderitzi* by presence of chaetae in segment one and relatively short parapodial cirri.

Key words: deep sea, hydrothermal vent, meiofauna, Polychaeta, Annelida

Introduction

No meiofaunal annelid adults have been described from hydrothermal vent areas and in general only relatively few records exist from the deep sea (Giere 2008; Desbruyères et al. 2006). Most meiofaunal annelids, such as protodrilids, psammodrilids, and dinophilids, are known from the interstitial environment of intertidal and subtidal coastal areas, which also accounts for the majority of Nerillidae (Worsaae 2005). However, many nerillids have also been found in mud or silty sediments, suggesting a more flexible range of habitat than other meiofaunal annelid taxa. Three nerillids are known from the deep sea: *Paranerilla cilioscutata* Worsaae & Kristensen, 2003 and *Paranerilla* sp. from Atlantic muddy sediment and globigerina sand and *Meganerilla bactericola* Müller, Bernhard & Jouin-Toulmond, 2001 from sulphur bacterial mats in the Pacific Ocean (Müller et al. 2001; Worsaae & Kristensen 2003). None of the 49 previously described species of Nerillidae have ever been reported from near deep hydrothermal vents, though an unidentified species referred to as *Nerilla* sp. was reported from a shallow hydrothermal vent at 100 m depth in the sub-polar Mid-Atlantic ridge (Friecke et al. 1989). The few records may be explained by the challenge of collecting meiofauna living in the flocculent surface detritus layer of mud bottom or from cracks in hard

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