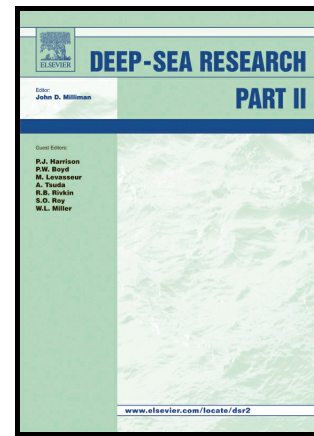


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New species of Ampharetidae (Annelida: Polychaeta) from the Arctic Loki Castle vent field

Jon A. Kongsrud^{a,*}, Mari H. Eilertsen^{b,c}, Tom Alvestad^{a,d}, Katrine Kongshavn^a and Hans Tore Rapp^{b,c,d}

^aDepartment of Natural History, University Museum of Bergen, P.O. Box 7800, N-5020 Bergen, Norway.

^bDepartment of Biology, University of Bergen, Norway.

^cCentre for Geobiology, University of Bergen, Norway.

^dUni Research, Uni Environment, Bergen, Norway.

* Corresponding author: E-mail address: Jon.Kongsrud@uib.no

Keywords

Vent fauna; Norwegian Sea; Arctic Mid Ocean Ridge; black smokers; molecular phylogeny; *Paramytha*; new genus; *Pavelius*

Abstract

Ampharetid polychaetes adapted to live in chemosynthetic environments are well known from the deep Pacific and Atlantic Oceans, but to date no such species have been reported from the Arctic Ocean. Here, we describe two new species, *Paramytha schanderi* gen. et sp. nov. and *Pavelius smileyi* sp. nov., from the Arctic Loki's Castle vent field on the Knipovich Ridge north-east of the island of Jan Mayen. The new species are both tube-builders, and are found in a sedimentary area at the NE flank of the vent field, characterized by low-temperature venting and barite chimneys. The new genus, *Paramytha*, is characterized by a prostomium without lobes or glandular ridges, smooth buccal tentacles, four pairs of cirriform branchiae arranged as 2+1+1 without median gap dorsally on segments II–IV, absence of chaetae (paleae) on segment II, and absence of modified segments. *Pavelius smileyi* sp. nov. is placed in the previously monotypic genus *Pavelius*, primarily based on the presence of a rounded prostomium without lobes and four pairs of branchiae arranged in a single transverse row without median gap dorsally on segment III. *Pavelius smileyi* sp. nov. differs from the type species, *P. uschakovi*, in the number of thoracic and abdominal chaetigers, and the absence of chaetae (paleae) on segment II. The phylogenetic position of the two new species from Loki's Castle is further explored by use of molecular data. New sequences of mitochondrial (16S rDNA and cytochrome c oxidase subunit 1, COI) and nuclear (18S rDNA)

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