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On the phylogenetic relationships of *Axiokebuita, Travisia* and Scalibregmatidae (Polychaeta)

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Abstract

We provide a description of newly collected specimens of *Axiokebuita* Pocklington & Fournier from Norway, previously known only from east Canada and the Antarctic. Due to delineation problems between the only two described species, *A. minuta* (Hartman) and *A. millsi* Pocklington & Fournier, these new specimens cannot unambiguously be referred to either species. Previously unnoticed adhesive papillae on the pygidium are present in both species and may constitute an apomorphy for *Axiokebuita*. The taxon lacks many morphological features otherwise characteristic for scalibregmatids, and to assess its affinities we present 18S rDNA and 28S rDNA-based analyses together with six other scalibregmatids and twenty other polychaetes. A nemertean is used as outgroup. All analyses support that *Axiokebuita* is a scalibregmatid. Furthermore, *Travisia* Johnston, traditionally referred to the Opheliidae, is nested within the scalibregmatids, as sister to *Neolipobranchius* Hartman & Fauchald. Arenicolidae and Maldanidae may constitute the sister group of scalibregmatids.

Key words: *Axiokebuita*, Scalibregmatidae, *Travisia*, Polychaeta, phylogeny, morphology, 18S rDNA, 28S rDNA

Introduction

Recent collections from deep coral reefs in the Trondheimsfjord in western Norway yielded specimens of the scalibregmatid *Axiokebuita* Pocklington and Fournier, a taxon not previously recorded from European waters. *Axiokebuita* has a simple external morphology and is mainly distinguished from other scalibregmatids by the absence of a num-

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