



Article

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Notes on the species of *Perkinsiana* (Polychaeta: Sabellidae) from Antarctica with the description of *P. brigittae* sp. nov.

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Abstract

Nine nominal species are known from Antarctica and adjacent waters that have been assigned to the genus *Perkinsiana* (Polychaeta: Sabellidae). Taxonomic notes for these species are provided. Currently, only six species are considered valid: *Perkinsiana antarctica* (Kinberg), *P. decorata* (Rullier), *P. borsibrunoi* Giangrande and Gambi, *P. magalhaensis* (Kinberg), *P. milae* Giangrande and Gambi and *P. pusilla* (Johansson); *P. antarctica* (Gravier) is *incertae sedis*; *P. littoralis* (Hartman) is a suggested synonym of *P. magalhaensis* (Kinberg) and *P. antarctica* (Gravier), while *Potamilla antarctica christensenii* Augener probably belongs to the genus *Notaulax*. *Perkinsiana* is amended based on the presence of a palmate membrane and radiolar flanges, and three types of abdominal chaetae. The new species *Perkinsiana brigittae* sp. nov. is here described from collections taken by the U. S. Antarctic Research Program (USARP) at Wilkes Station. A taxonomic key for species of *Perkinsiana* from Antarctica is provided.

Key words: Antarctica, Sabellidae, *Perkinsiana*, symbiosis.

Introduction

The sabellid genus *Perkinsiana* was established by Knight-Jones (1983) in order to accommodate species previously assigned to the genera *Demonax* Kinberg, 1867 (= *Parasabella* fide Tovar-Hernández & Harris, 2010), *Potamilla* Malmgren, 1866 and *Potamethus* Chamberlin, 1919. Fitzhugh (1989) provided a diagnosis slightly modified from that of Knight-Jones (1983) and pointed out that *Perkinsiana* is not definable by any synapomorphy. Rouse (1996) emended the genus to incorporate features found in other species belonging to the taxon. Capa (2007) amended the genus again in order to update the modifications of genus diagnosis after the exclusion of *P. riwo* Rouse, 1996 (placed in *Kirkia* Nogueira *et al.* 2004 and then in *Aracia* Nogueira *et al.* 2010 when the former was recognized as a homonym) and the inclusion of two species (*Pekinsiana* (sic) *longa* Capa, 2007, and *P. anodina* Capa, 2007). Based on a cladistic analysis, Capa (2007) concluded that *Perkinsiana* is paraphyletic.

Knight-Jones' (1983) original diagnosis stated that *Perkinsiana* have radioles without flanges or webbing (though the radioles are fused for a short distance basally); and superior and inferior abdominal chaetae similar in shape, either slender or with a bulbous knee, arranged in two close short transverse rows. The subsequent three generic diagnoses stated that radiolar flanges and palmate membrane are lacking, and the anterior and posterior rows of abdominal chaetae have elongate, broadly-hooded chaetae in all chaetigers (Fitzhugh 1989: Fig. 24C–D; Rouse 1996; Capa 2007). However, a great variability of abdominal chaetae and in the length of handles in thoracic uncini is present within species ascribed to the genus. Additionally, *Perkinsiana* exhibits a high variability of