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Revision of the genus *Polyeunoa* McIntosh, 1885 (Polychaeta, Polynoidae)

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Abstract

Long-bodied polynoids, like *Polyeunoa laevis* McIntosh, 1885 and similar species which are often associated with cold-water corals, are regularly reported from Antarctic, Subantarctic and adjacent cold-temperate waters. The taxonomy of these species is confused and has been subject to various discussions in the past. For the revision presented here we examined the available type material and additional specimens of the following species: *Polynoe antarctica* Kinberg, 1858, *Polyeunoa laevis* McIntosh, 1885, *Enipo rhombigera* Ehlers, 1908, *Hololepidella flynni* Benham, 1921, *Polyeunoe dubia* Hartmann-Schröder, 1965, *Polyeunoa monroi* Averincev, 1978, and *Polynoe thouarellicola* Hartmann-Schröder, 1989. As a result we consider *Polyeunoa laevis* McIntosh, 1885, *Parapolyeunoa flynni* (Benham, 1921) n. comb., and *Neopolynoe antarctica* (Kinberg, 1858) n. comb. as valid species. *Enipo rhombigera* Ehlers, 1908, *Polyeunoe dubia* Hartmann-Schröder, 1965, and *Polynoe thouarellicola* Hartmann-Schröder, 1989 are junior synonyms of *Polyeunoa laevis*. *Polyeunoa monroi* Averincev, 1978 is a junior synonym of *Hololepidella flynni* Benham, 1921 for which the new genus *Parapolyeunoa n. gen*. is erected. *Polynoe antarctica* Kinberg, 1858 is transferred to the genus *Neopolynoe* Loshamn, 1981 and represents the third known species within this genus. Three comprehensive tables illustrating the distinctive characters of the considered genera and species are given to facilitate the identification of the valid species.

Key words: taxonomy, *Polyeunoa*, Parapolyeunoa **n. gen.**, *Neopolynoe*, Southern Ocean, SOAP workshop, cold-water corals

Introduction

McIntosh (1885) established the genus *Polyeunoa* for his new species *Polyeunoa laevis*, but without properly defining the identification characters of the genus, which led to some confusion in the literature. Pettibone (1969) was the first to revise the genus in order to separate it from other long-bodied polynoid genera with more than 50 segments, like *Hololepidella* Willey, 1905 and the three newly established genera *Neohololepidella* Pettibone, 1969, *Grubeopolynoe* Pettibone, 1969, and *Parahololepidella* Pettibone, 1969 (see Table 1 for distinctive characters). Apart from *Polyeunoa laevis*, which was redescribed in her work, Pettibone also mentioned two other species within the genus, *P. flynni* (Benham, 1921) and *P. dubia* Hartmann-Schröder, 1965, but without revising them. Later Averincev (1978) added the new species *Polyeunoa monroi* to the genus. Finally, Stiller (1996) listed *Polynoe thouarellicola* Hartmann-Schröder, 1989 as a junior synonym of *Polyeunoa laevis* in his work on scale worms from the Weddell and Lazarev Seas. Besides the description of the new species *Polynoe thouarellicola*, Hartmann-Schröder (1989) also redescribed *Polynoe antarctica* Kinberg, 1858, which was considered to be a synonym of *Polyeunoa laevis* by earlier authors, like Ehlers (1901). Bergström (1916), however, demonstrated that both species are distinct.

During the SOAP workshop on Antarctic polychaetes ("Southern Ocean Annelid Project"), held in March 2010 in Woods Hole (USA), it became clear that it was currently not possible to definitely identify specimens which had been pre-identified as *Polynoe thouarellicola*, *Polyeunoa laevis* or *Polynoe antarctica* due to the confused situation in the literature.

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