



A new genus of Sabellidae (Annelida, Polychaeta) from Antarctica, with discussion of relationships among plesiomorphic genera within Sabellinae

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Abstract

A new genus of Sabellidae (Annelida, Polychaeta), collected in the soft bottoms off the Antarctic Peninsula (Antarctica) in January 2006 is described. The new genus *Euchoneira* is included in the most plesiomorphic area in the sub-family Sabellinae. Similar to the genus *Euchone*, this new taxon presents a well developed anal depression with lateral wings, but the shape of abdominal uncini resembles that of *Jasmineira*. The new species *Euchoneira knoxi* **gen. sp. nov.**, very abundant in the investigated area, is a gonochoric form (sex-ratio close 1:1). Females contained eggs ranging from 100 to 250 µm in diameter (modal class 175 µm) either in the abdomen or thorax. Males with mature sperm had spermatozoa with a characteristic cylindrical shape of the nucleus with a pointed, “nip-like” acrosome, a morphology similar to that already observed in *Euchone pallida* Ehlers, 1908, a second species collected together with the new taxon and already known for the Antarctic area. Additions to the description of *E. pallida* concerning internal structure of the crown, is also given. To define the relationships between the newly described genus and the genera present in the plesiomorphic area of the Sabellinae subfamily, a cladistic analysis was performed utilizing a previous data set after adding the new taxon. The consensus tree confirmed *Amphicorina armandi* (Claparède, 1868) as the most plesiomorphic taxon separated from all the others. The new genus is located in an intermediate position between *Jasmineira* - *Claviramus* and the clade containing *Chone* and *Euchone* species, close to *Fabrisabella vasculosa*.

Key words: Polychaeta, Sabellidae, Phylogeny, *Euchoneira knoxi* **gen. sp. nov.**, *Euchone*, Antarctica

Introduction

The genera considered the most plesiomorphic within the subfamily Sabellinae such as *Euchone* Malmgren, 1866, *Chone* Krøyer, 1856, *Amphicorina* Quatrefages, 1866, and *Jasmineira* Langerhans, 1880, are generally highly specious taxa. This group of genera (Area II sensu Fitzhugh, 1989) represents one of the least solved from a phylogenetic point of view (Fitzhugh, 1989; Cochrane, 2003).

The phylogeny of some of these plesiomorphic genera was already analyzed by Fitzhugh (2002) who emended the genus *Jasmineira* and erected the new genus *Claviramus* on the basis of the presence of foliaceous tip of the radioles which is considered the apomorphy for the genus, and by Cochrane (2003) who showed *Euchone* paraphyletic on account of morphological features concerning to the disposition of pinnules on radioles in the branchial crown, and the number of chaetigers forming the anal depression. Giangrande and Licciano (2006) examining Mediterranean *Euchone* and related taxa, proposed to consider also the dentition of the thoracic uncini and the length of the main fang as useful character at generic level. By contrast, the shape of the abdominal uncini is a problematic feature in defining *Chone*, *Euchone* and *Amphicorina*, which show a great similarity in the posterior region. Moreover, in the same genus a great variability within a given region of the abdomen or within the same fascicle can be observed (Banse, 1972; Fitzhugh, 1989; Bick and Randel, 2005).