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Sabellaria* and *Lygdamis* (Polychaeta: Sabellariidae) from reefs off northeastern Brazil including a new species of *Sabellaria

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Abstract

Members of the polychaete taxon Sabellariidae Johnston, 1865 are known to live in sand tubes cemented onto rocky substrata, mollusk shells, or sea grasses. Of 37 known *Sabellaria* species, only nine were reported for the Brazilian coast, in all cases being associated with aggregates of other species. The genus is considered cosmopolitan. Herein we describe for the first time an aggregate of sabellariids composed by *Sabellaria nanella* and *Sabellaria wilsoni*. In addition, we describe a new species of *Sabellaria*. *Lygdamis* are represented by solitary species. None of the 17 known species were previously reported from the southwestern Atlantic Ocean. We report *Lygdamis rayrobertsi* for the first time in the South Atlantic.

Key words: Taxonomy, Sabellariidae, *Sabellaria*, *Lygdamis*, Brazil

Introduction

Members of the polychaete taxon Sabellariidae Johnston, 1865 are known as sand-mansion or honeycomb worms. They live in sand tubes cemented onto rocky substrata (Bailey-Brock 1985; Hutchings 2000; Rouse & Pleijel 2003; Bailey-Brock *et al.* 2007), mollusk shells, or sea grasses (Uebelacker & Johnson 1984; Santos *et al.* 2011). Some species are known for building solitary tubes (Eckelbarger 1977a), or extensive reefs (Hutchings 2000; Rouse & Pleijel 2001). They occur from subtidal to abyssal depths (up to 4825 meters) (Eckelbarger 1977b; Uebelacker & Johnson 1984; Kirtley 1994). As natural “surf zone engineers” sabellariids offer a number of ecological benefits to marine benthic communities (Kirtley 1994; Nishi *et al.* 2010; Capa *et al.* 2012), because the complex habitat structure of sabellariid reefs sustain a high biodiversity (Kirtley 1994). As a result, studies of sabellariid ecology, reproductive biology and phylogeny have been attracting biologists and geologists over the years (e.g., Kirtley & Tanner 1968; Pawlik 1988; Hendrick & Foster-Smith 2006; Gruet & Lana 1988; Ayata *et al.* 2009; Cullotoy *et al.* 2010; Nishi *et al.* 2010; Capa *et al.* 2012).

Hutchings (2000) described the sabellariids as polychaetes with compact bodies divided into distinct sections: head, thorax, abdomen and pygidium. The head consists of an operculum with numerous golden paleae which almost close the tube. The prostomium is indistinct from the peristomium. The peristomium is visible only as lips around of the mouth. Paired palps are positioned in the central area of the prostomium, and nuchal organs are present at the bases of the palps. The thoracic region is composed of segments with short and cylindrical neuropodia, notopodia as tori, and elongate dorsal branchiae. The abdomen is composed by a neuropodium that is short and cylindrical, a notopodium that is reduced to a torus, and prolonged gills positioned dorsally. The abdomen is also indicated by the presence of chaetal inversion, where uncini are notopodial and neurochaetae are capillaries. The first revision of the family was provided by Kirtley (1994). All information about sabellarids was brought together, the taxonomy was reorganized based on the literature and the examination of a great number of species

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