



## Ctenostomatous Bryozoa from São Paulo, Brazil, with descriptions of twelve new species

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### Abstract

This paper describes 21 ctenostomatous bryozoans from the state of São Paulo, Brazil, based on specimens observed *in vivo*. A new family, Jebramellidae **n. fam.**, is erected for a newly described genus and species, *Jebramella angusta* **n. gen. et sp.** Eleven other species are described as new: *Alcyonidium exiguum* **n. sp.**, *Alcyonidium pulvinatum* **n. sp.**, *Alcyonidium torquatum* **n. sp.**, *Alcyonidium vitreum* **n. sp.**, *Bowerbankia ernsti* **n. sp.**, *Bowerbankia evelinae* **n. sp.**, *Bowerbankia mobilis* **n. sp.**, *Nolella elizae* **n. sp.**, *Panolicella brasiliensis* **n. sp.**, *Sundanella rosea* **n. sp.**, *Victorella araceae* **n. sp.** Taxonomic and ecological notes are also included for nine previously described species: *Aeverrillia setigera* (Hincks, 1887), *Alcyonidium hauffi* Marcus, 1939, *Alcyonidium polypylum* Marcus, 1941, *Anguinella palmata* van Beneden, 1845, *Arachnoidella evelinae* (Marcus, 1937), *Bantariella firmata* (Marcus, 1938) **n. comb.**, *Nolella sawayai* Marcus, 1938, *Nolella stipata* Gosse, 1855 and *Zoobotryon verticillatum* (delle Chiaje, 1822).

**Key words:** *Alcyonidium*, bryozoans, *Bowerbankia*, Ctenostomata, *Jebramella*, Jebramellidae, new combination, new family, new species, *Nolella*, *Panolicella*, *Sundanella*, taxonomy, *Victorella*

### Introduction

Vieira *et al.* (2008) listed 42 species of ctenostomatous Bryozoa from the Brazilian coast, most of them recorded from São Paulo state. The authors remarked that among these species, at least four required taxonomic revision: *Alcyonidium mamillatum* Alder, 1857, *Alcyonidium polyoum* (Hassall, 1841), *Sundanella sibogae* Harmer, 1915 and *Bowerbankia gracilis* Leidy, 1855. Recently, Fehlaue-Ale *et al.* (2011) reported a previously synonymized species from São Paulo, *Amathia brasiliensis* Busk, 1886, and clarified its taxonomic status based on molecular genetics and morphological characteristics observed in living specimens (e.g. pigmentation of autozooids and kenozooids).

Species of Ctenostomata have been traditionally described based on morphological characteristics of preserved zooids, complemented with studies of the microscopic anatomy of polypides (e.g. Harmer 1915; Busk 1886). However, the additional information obtained from colonies *in vivo* is essential for identification of some species as preserved specimens do not always reveal all the essential characters for identification, causing them to be lumped together or misidentified in taxonomic studies (Jebram 1985). Studies using molecular techniques have revealed that some widespread ctenostomatous ‘species’ belong to complexes of species with different morphology and behavior (Thorpe *et al.* 1978; Porter *et al.* 2002).

In the present study we give an account of the ctenostomatous bryozoan fauna collected on the north coast of São Paulo state, Brazil. Twelve new species are described and another nine previously described species are included with description of additional characters based on living material.

understood may also have contributed to this perception. More recent surveys such as BIOTA/FAPESP have given us a fuller picture of ctenostome diversity in shallow water. Some ctenostomes do appear to be eurytopic, capable of living in varied habitats and under varying conditions, therefore showing widespread distributions. This seems to be true for some well-known fouling or invasive species such as *Zoobotryon verticillatum* and *Anguinella palmata*, although that belief may change as molecular studies are carried out on these species. The larger part of the ctenostome fauna seems to consist of species with more restricted distributions. For example, *B. imbricata*, a species also found on British coasts, occurs on the northeastern US coast. *Bowerbankia gracilis*, a US East Coast native that has been introduced in other regions, is widespread in the region, whereas a newly described species, *Bowerbankia tertia* Winston & Hayward, 2012 is so far limited to the east coast of the US. In Brazil, the original studies of Brazilian bryozoans by Ernst Marcus identified *Bowerbankia* specimens as *B. gracilis*, but in the BIOTA study three morphologically similar species of *Bowerbankia* (*Bowerbankia ernsti* n. sp., *Bowerbankia evelinae* n. sp. and *Bowerbankia mobilis* n. sp.) were found, whereas *B. gracilis* did not occur. Both studies also found new and more localized species of *Alcyonidium*, but the species listed most frequently in past work—*Alcyonidium polyoum*—did not occur in either region.

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