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Systematics of interstitial encrusting bryozoans from southeastern Brazil

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Abstract

This paper describes 22 species of marine bryozoans found in the sand-grain-encrusting interstitial epifauna of the north-east coast of São Paulo state, Brazil: one new cyclostome, *Disporella calcitraba* sp. nov., and 21 cheilostomes. Sixteen of the cheilostomes are new species, and three represent new genera. They are *Ammatophora arenacea* sp. nov., *Discoporella gemmulifera* sp. nov., *Puellina caraguata* sp. nov., *Puellina tuba* sp. nov., *Rosulapelta rosetta* gen. et sp. nov., *Collarina spicata* sp. nov., *Hippothoa calcicola* sp. nov., *Trypostega ilhabelae* sp. nov., *Reptadeonella granulosa* sp. nov., *Drepanophora irregularis* sp. nov., *Allotherenia sabulosa* gen. et sp. nov., *Bryopesanser tilbrooki* sp. nov., *Psammocleidochasma tridentatum* gen. et sp. nov., *Celleporina abstrusa* sp. nov., *Hippoporella castellana* sp. nov., and *Hippoporella sabulonis* sp. nov. Other species found in this habitat, *Alderina smitti*, *Cymulopora uniserialis*, *Vibracellina laxibasis*, *Akatopora leucocypha*, and *Smittipora sawayai*, have previously been described. The family Cymuloporidae fam. nov. is erected for *Cymulopora* and *Crepis*. The occurrence in this habitat of living colonies of bryozoans more characteristic of larger subtidal shell substrata indicates the potential importance of an interstitial refuge in maintaining and dispersing encrusting bryozoan populations along continental shelves where larger substrata are absent or rare.

Key words: Bryozoa, interstitial, Brazil, Cymuloporidae, new family, new genus, new species, *Allotherenia*, *Psammocleidochasma*, *Rosulapelta*, sand grains, taxonomy

Introduction

Distinct suites of encrusting bryozoans inhabit the surfaces of mineral grains and sand- to gravel- size shell fragments, both at the sand-water interface, and interstitially within the substratum. So far these assemblages have been found in two widely separated regions with similar environmental conditions: sandy subtidal habitats on the inner continental shelf. The first was found on the east coast of Florida (Håkansson & Winston 1985; Winston & Håkansson 1986; Winston 1988). The second such occurrence was along the coast of São Paulo State, Brazil (Winston & Migotto 2005).

Colonies of sand-living encrusting species settle preferentially on sand and shell grains of a particular size. Sand grain-encrusting species also become sexually reproductive at a much smaller size than colonies of species occupying larger substrata and are able to live out their lives on a single grain.

The mixed terrigenous and carbonate sand habitat also supports a number of other kinds of encrusting organisms, including serpulid and spirorbin polychaete worms, hydroids, entoprocts and foraminiferans, as well as the more familiar motile meiofaunal taxa, flatworms, gastrotrichs, nematodes, copepods, etc.

In this paper we describe and illustrate the bryozoan species found at the Brazilian stations studied so far.

Material and methods

A study of the marine fauna of the state of São Paulo, Brazil (the BIOTA/FAPESP/Bentos Marinho Project) included benthic samples taken with a Van Veen sampler (0.25 m²) at various depths (5–45 m) along the continental shelf of the state in 2002. At each station, a Nansen bottle sampler with reversing thermometer was deployed to