

Taxonomy of calcareous sponges (Porifera, Calcarea) from Potiguar Basin, NE Brazil

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Abstract

Relatively few calcareous sponges (Porifera, Calcarea) have been recorded from Brazil, mostly due to a reduced number of studies focused exclusively on these generally small, cryptic organisms. To fill in part this gap, the taxonomy and distribution of calcareous sponges from Potiguar Basin (Rio Grande do Norte state, Northeastern Brazil) are studied here. Thirty one specimens were collected by dredging, trawling and SCUBA diving from 2003 to 2007 from depths of 2 to 160 m. Seven species were found and are described here. Two of these species are new to science (*Leucetta potiguar* sp. nov. and *Paraleucilla sphaerica* sp. nov.), and four are new records for Rio Grande do Norte state (*Clathrina aurea*, *Leucascus roseus*, *Leucetta floridana*, and *Leucandra serrata*). An identification key for the species of Calcarea from Potiguar Basin is provided here.

Key words: Atlantic Ocean, Rio Grande do Norte State, Calcispongiae, *Leucetta potiguar* sp. nov., *Paraleucilla sphaerica* sp. nov.

Introduction

Although calcareous sponges currently form the smallest class of Porifera, with only approximately 660 species, they are triggering a renewed interest about the evolution of basal metazoans (Manuel 2006). However, a more complete knowledge of the diversity of species and their distribution is needed to clarify the evolutionary history of the group. In Brazil, calcareous sponges are particularly poorly known, with only 51 species recorded, most of them needing confirmation (e.g. Borojevic 1971; Borojevic & Peixinho 1976). Despite the increasing knowledge on the diversity of calcareous sponges in Brazil, many species remain undescribed (Klautau & Borojevic 2001; Klautau *et al.* 2004; Rossi *et al.* 2006; Azevedo & Klautau 2007; Lanna *et al.* 2007). Furthermore, taxonomic studies on calcareous sponges in Brazil were concentrated in the Southeastern region (Rio de Janeiro and São Paulo states) (Borojevic 1971; Klautau *et al.* 1994; Klautau & Borojevic 2001; Klautau *et al.* 2004; Rossi *et al.* 2006; Azevedo & Klautau 2007; Lanna *et al.* 2007), with fewer studies in Northeastern Brazil (Borojevic & Peixinho 1976; Muricy & Moraes 1998; Moraes *et al.* 2003).

Potiguar Basin is an important area of oil and gas exploitation in Rio Grande do Norte state, Northeastern Brazil. The research centre (CENPES) of the Brazilian oil company PETROBRAS is carrying on a large program of environmental characterization and monitoring of Potiguar Basin, which includes a description of the local sponge fauna (Muricy *et al.* 2008). This area has a great biogeographical importance due to its location near a remarkable change in orientation of the Brazilian coastline in Rio Grande do Norte state (from North-South to East-West; see Fig. 1). The South Equatorial Current bifurcates in this area, with the North Brazil Current heading northwestwards and the Brazil Current heading southwards (Fratantoni *et al.* 2000).