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Two new species of *Aulospongia* Norman, 1878 with a key to the Atlantic species (Poecilosclerida; Demospongiae; Porifera)

THAYNÃ CAVALCANTI¹, GEORGE GARCIA SANTOS¹ & ULISSES PINHEIRO^{1,2}

¹Universidade Federal de Pernambuco, Centro de Ciências Biológicas, Departamento de Zoologia, Av. Nelson Chaves, s/n Cidade Universitária CEP 50373-970, Recife, PE, Brazil

²Corresponding author. E-mail: uspinheiro@hotmail.com

Abstract

We describe two new species: *Aulospongia trirhabdostylus* sp. nov. and *Aulospongia mandela* sp. nov. from Potiguar Basin (Rio Grande do Norte State, Northeastern Brazil). Both species were compared with their congeners and an identification key for the Atlantic species of *Aulospongia* is provided. The genus *Aulospongia* now contains 16 species.

Key words: Sponges, deep-sea, *Aulospongia*, new species, Rio Grande do Norte State, taxonomy, Brazil

Introduction

The family Raspailiidae Hentschel, 1923 containing 20 valid genera (one *incertae sedis*), seven subgenera, and approximately 250 named species worldwide, mainly from shallow waters and so far only a few from abyssal depths (Hooper 2002). Raspailiidae is characterized by three apomorphies. They have skeleton that contains differentiated axial and extra-axial components, where the axial skeleton may be compressed or reticulate, and the extra-axial skeleton maybe plumo-reticulate or plumose. Most species also have a specialised ectosomal skeleton consisting of brushes of small ectosomal megascleres surrounding long protruding single choanosomal megascleres—in a few species this has been secondarily lost. Most species have echinating acanthostyles that show a range of geometric modifications important to their identification (Hooper *et al.* 2008). *Aulospongia* Norman, 1878 is one of these latter. Hooper *et al.* (1999) revised the ten known species of *Aulospongia*, demonstrating a pan-equatorial and tropical-subtropical distribution, with rare incursions into cooler temperate waters. The genus currently has 14 valid species with only four from the Atlantic Ocean (van Soest *et al.* 2013): *Aulospongia cerebella* (Dickinson, 1945), *A. monticularis* (Ridley & Dendy, 1886), *A. phakelloides* Goodbody & Lehnert, 2004, and *A. samariensis* Hooper, Lehnert & Zea, 1999. In Brazil, however, the genus has records without identification in specific level and descriptions (Hajdu *et al.* 2004; Hajdu & Lopes 2007; Selegim *et al.* 2007).

In this study, two new species of *Aulospongia* are described from Northeastern Brazil, increasing to six the number of known species in the Atlantic. A key to these species of *Aulospongia* is provided.

Material and methods

Potiguar Basin is an important area of oil and gas exploitation in Rio Grande do Norte State, Northeastern Brazil (Figure 1), and as such a more comprehensive knowledge of marine life in the region is essential. The specimens were collected from three trawl sites by PETROBRAS (Petróleo do Brasil S/A), in 2009 and 2011, as part of the Project ‘Campanha de Monitoramento Ambiental do Projeto de Caracterização Ambiental do Talude Continental na Bacia Potiguar/ Rio Grande do Norte/ BR’ (BPot) sponsored by PETROBRAS. Specimens were preserved in 80% ethanol and deposited in the Porifera collection of Universidade Federal de Pernambuco (UFPEPOR) and in the Porifera collection of Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ). Dissociated spicule

2.	Only one category of other spicules	3
-	Two categories of other spicules	<i>A. samariensis</i>
3.	Sponge bulbous shape	4
-	Sponge not bulbous shape	5
4.	Bulbous-encrusting shape and with styles as other spicules	<i>A. monticularis</i>
-	Bulbous-erect shape and with raphides as other spicules	<i>A. spinosus</i>
5.	Fan-shaped or vasiform, two categories of rhabdostyles	<i>A. mandela</i> sp.nov.
-	Massive arborescent shape, three categories of rhabdostyles	<i>A. trirhabdostylus</i> sp.nov.

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