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A new species of freshwater sponge, *Heteromeyenia barlettai* sp. nov. from an aquarium in São Paulo, Brazil (Spongillida: Spongillidae)

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Abstract

A new species of freshwater sponge, *Heteromeyenia barlettai* **sp. nov**., is proposed here based on specimens discovered in a private aquarium in São Paulo, Brazil, and most likely inadvertently collected from the Paraná Basin. The present study also presents a redescription of *H. insignis* on the basis of the specimen reported upon by Volkmer (1963), collected from the Atlântico Sul Hydrographic Basin. Spicule measurements (n=30) were made for comparison with other *Heteromeyenia* species. This is the first time that *H. insignis* has its complete set of spicules studied under SEM. After comparison with the redescription of the type of *H. baileyi*, we also find characteristics that justify the maintenance of *H. insignis* as a valid species. A key to species of *Heteromeyenia* is provided.

Key words: Continental sponges, taxonomy, new species, artificial environment, Porifera

Introduction

Freshwater sponges represent about 3% of all diversity in Porifera, with about 260 valid species (van Soest *et al.* 2015). This low diversity is probably related to the paucity of taxonomists and the difficulties inherent to surveying inland environments. In the last decade, only fourteen new species of freshwater sponges were described in the world, when these numbers are compared with results for the marine environment, one finds that 775 marine sponge species were described in the same period.

A remarkable characteristic of freshwater sponges is the formation of resistance bodies known as gemmules. These structures are protected by gemmular theca which is constituted by a well-developed pneumatic layer and spined gemmuloscleres, which besides being able to resist the unfavorable conditions for long period of time are also responsible for dispersal potential of several species of freshwater sponges (Manconi & Pronzato 2007).

Genus *Heteromeyenia* Potts, 1881 is in the family Spongillidae Gray, 1867, and is known from the Palearctic, Oriental, Nearctic (with the highest species richness), Neotropical and Australian Regions (Batista *et al*. 2007). The genus comprises eight species worldwide (van Soest *et al.* 2015): *H. baileyi* (Bowerbank, 1863), *H. cristalina* Batista, Volkmer-Ribeiro & Melão, 2007, *H. horsti* Ezcurra de Drago, 1988, *H. insignis* Weltner, 1895, *H. latitenta* (Potts, 1881), *H. stepanowii* (Dybowski, 1884), *H. tentasperma* (Potts, 1880), and *H. tubisperma* (Potts, 1881).

The species of *Heteromeyenia* show restricted distribution, some of which are even endemic to parts of continents, except for the two species, *H. stepanowi* (Palearctic and Australian Regions) and *H. baileyi* (Palearctic and Nearctic Regions), which have disjunct distribution (see Penny & Racek 1968; Volkmer-Ribeiro & Traveset 1987; Batista *et al*. 2007). Nevertheless, Penny & Racek (1968) have already stressed the necessity to review all the specimens of both allegedly widespread species.

Ezcurra de Drago (1979) proposed the synonimization of *H. insignis* with *H. baileyi,* concomitantly expanding the latter's distribution to the Neotropical Region. However, her proposal has not been followed by subsequent workers (De Rosa Barbosa 1984; Volkmer-Ribeiro *et al*. 1988; Batista *et al*. 2007).

In the present study, we report a new species of *Heteromeyenia* discovered from a private aquarium in São

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