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## ***Hamacantha (Hamacantha) boomerang* sp. nov. from deep-sea coral mounds at Campos Basin, SW Atlantic, and redescription of *H. (H.) schmidtii* (Carter, 1882) (Hamacanthidae, Poecilosclerida, Demospongiae)**

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### **Abstract**

There are 22 species of *Hamacantha* registered from all over the world, and frequently from deep-waters, only two of which had previously been reported from the SW Atlantic. Here we describe a third species for this area, *Hamacantha (H.) boomerang* sp. nov., collected from deep-sea coral mounds at Campos Basin (off Rio de Janeiro state). We found oxeas 271–630 µm long, diancistras in three size classes, 125–155, 45–69 and 20–29 µm, and toxas, 58–82 µm. This is the only *Hamacantha* combining oxeas and toxas, but the latter are very rare. The species approaches the Caribbean *H. (H.) schmidtii* (Carter, 1882), where we observed oxeas 390–495 µm long, and diancistras in three size classes, 109–124, 44–54 and 26–41 µm, however toxas appear to be absent. Both species are clearly distinct by micrometric values, as well as the overall morphology of the smaller diancistras, distinct from the intermediate category in the new species, but quite similar in *H. (H.) schmidtii*. *Hamacantha (Vomerula) falcula* approaches the new species very closely in microsclere dimensions and morphology, but is set apart by its styloid and smaller megascleres.

**Key words:** taxonomy, Brazil, Florida, continental slope, microscleres

### **Introduction**

Important new data are being generated on Brazilian deep-sea sponges in response to two main driving forces: 1, the nation's need to establish sustainable catches of life resources in its Exclusive Economic Zone (Noronha 2006), and 2, a growing pressure on offshore oil and gas companies by environmental authorities requiring baseline information and impact assessment of their activities (Garcia 2003). This scenario permitted the discovery of numerous deep-sea sponge species from off S-SE Brazil, of which 20 were published in the last decade, and another similar number is in the process of being described for publication. These stemmed from dredging, trawling, and more recently, ROV collections, as is the case of the new species reported here.

There are 22 species of *Hamacantha* described from all over the world, mostly from deep-waters (van Soest *et al.* 2013). Only two species have previously been reported from the SW Atlantic, namely *H. (Vomerula) esperioides* (Ridley & Dendy, 1886) and *H. (Vomerula) microxifera* Lopes & Hajdu, 2004. Here we describe a second species for this area, *Hamacantha (H.) boomerang* sp. nov., and redescribe *H. (H.) schmidtii* (Carter, 1882), based on re-examination of a type slide at the Natural History Museum, London. This is the first account of the morphology and micrometry of its spicule set, as earlier authors went only as far as establishing the number of spicule categories present (e.g. Stephens 1921).

### **Material and methods**

The single specimen of the new species was studied using methodology detailed in Hajdu *et al.* (2011), except that

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