**Stelletta ruetzleri** sp. nov., a new ancorinid from the Southwestern Atlantic (Porifera: Astrophorida)*

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**SUMMARY:** *Stelletta ruetzleri* sp. nov., a new ancorinid sponge from the Southwestern Atlantic (Porifera, Astrophorida), collected at 128 and 200 m depth off Rio Grande do Sul State coast, Brazil (31°20'-32°24'S/49°52'-50°15'W), is described and illustrated with SEM images of the spicules. The new species is based on the presence of one category of oxeas, dichotriaenes, oxyasters and spheroxyasters.

*Key words:* Porifera, Ancorinidae, *Stelletta*, continental shelf, Southwestern Atlantic, taxonomy.

**INTRODUCTION**

The genus *Stelletta* was described by Schmidt (1862) and has the Adriatic species *Stelletta grubii* Schmidt, 1862 as type-species by subsequent designation (Burton and Rao, 1932).

*Stelletta* is represented from the Brazilian coasts by six species, with a single species from subtropical deep waters: *Stelletta hajdui* Lerner and Mothes, 1999, off Rio Grande do Sul State (Lerner and Mothes, 1999). The other four were recorded from tropical shallow waters: *Stelletta anancora* (Sollas, 1886) and *Stelletta crassispicula* (Sollas, 1886), both recorded from Bahia State (Sollas, 1888); *Stelletta gigas* Sollas, 1886, described from São Pedro and São Paulo archipelago (Sollas, 1888); *Stelletta purpurea* (Ridley, 1884) from Rio de Janeiro and Santa Catarina State (Mothes-de-Moraes, 1985; Mothes and Lerner, 1994 as *Myriastra purpurea*) was recently considered (Lerner and Mothes, 1999) as not-conspecific with *Stelletta purpurea* (Ridley, 1884).

A brief history of the genus *Stelletta*, including the Brazilian species, was reported in Lerner and Mothes (1999).

**MATERIAL AND METHODS**

The studied material was dredged by R.V. Atlântico Sul, of the Fundação Universidade do Rio Grande, during the Projeto Talude, at 128 and 200 m depth on the continental shelf off Rio Grande do Sul State coast, Brazil (31°20'-32°24'S/49°52'-50°15'W).

*Received February 27, 2001. Accepted September 4, 2001.*

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*SCI. MAR., 66 (1): 69-75*}

**SCIENTIA MARINA**

2002
Fig. 1. – *Stelletta ruetzleri* sp. nov., habit: A, Holotype (MCN 2198) associated with sponge *Rhabderemia* sp. (arrow); B, Paratype (MCN 2201); C, Paratype (USNM 51559). Scale bar: 1 cm.
The holotype (schizoholotype in the Zoölogisch Museum Amsterdam, Netherlands [ZMA]) and paratype MCN 2201 are deposited in the Porifera Collection of Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul (MCN/FZB). The other paratypes are deposited in The Natural History Museum, London, (BMNH) and the National Museum of Natural History, Smithsonian Institution, Washington (USNM) Collections (schizoparatypes in the MCN/FZB and in the Museum of Comparative Zoology, Harvard University, Cambridge, USA [MCZ]).

The methodology used to prepare dissociated spicule slides follows Mothes-de-Moraes (1985). Thick sections of the cortex were made by removing a thin coat parallel to the cortex surface with pincers. It was placed it on a slide with xylene for clarification, and after drying of the skeleton section, the slide was mounted with Entellan and closed off with a cover slip. Electron micrographs were taken at MCN/FZB with a Jeol 5200 with an accelerating voltage of 25 kV and magnifications varying from 500 to 5,000 x. Spicule measurements comprised minimum, mean and maximum sizes in micrometers (µm) and were obtained by taking 50 measures of each type of spicule/specimen (unless stated otherwise).

RESULTS

Family ANCORINIDAE Schmidt, 1870
Genus Stelletta Schmidt, 1862

Diagnosis. Ancorinidae with radiate oxeas and triaenes, and two or three types of asters distributed both at the surface and in the choanosome, or only present in the choanosome. Cortex well-developed (sensu Van Soest and Stentoft, 1988; Desqueyroux-Faundez and Van Soest, 1997; Lerner and Mothes, 1999).

Stelletta ruetzleri sp. nov.
(Figs. 1-3; Table 1)


Etymology. Dedicated to Dr. Klaus Rützler, for his important contributions to the study of marine sponges.

Description. Holotype (Fig. 1A). Massive to cushion shaped (5.5 x 4.5 x 1.5 cm). Growing on a substrate of coralline formations, stones and polychaete tubes. Rhabderemia sp. is epibiontic on the holotype of the new species. Surface optically smooth, microscopically hispid; rare oscules 0.1-0.2 cm in diameter, pores not visible; hard consistency; color in alcohol gray-white in the cortex and ochre-gray in the choanosome. Paratypes growing on a substrate of stones and polychaete tubes (Figs. 1B-C).

Skeleton. (Fig. 2). Ectosomal: a crust of about 0.3 cm in thickness, carrying a dense layer of spheroxysters. A series of subcortical aquiferous cavities with 0.1-0.3 cm in diameter are visible. Choanosomal: the usual radial arrangement of dichotriaenes and oxeas, single or in tracts (2-3 spicules), which are sometimes protruding beyond the sponge surface; dichotriaenes with the cladomes outwards and rhabdomes perpendicular to the surface; below the cladomes there are rare oxyasters. Oxyasters are abundant in the deeper part of the choanosome.

Megascleres (Measurements – Table 1).

Oxeas (Fig. 3A). Usually slightly curved or sometimes straight; with blunt ends, sometimes has-
Fig. 3. *Stelletta ruetzleri* sp. nov., spicules: A, oxea; B, dichotriaenes; C, dichotriaene cladome; D, oxyaster; E, spheroxyaster; F, oxyasters; G, spheroxyasters.
tate or acerate; rare styles and strongyloxeas.

Dichotriaenes (Figs. 3B-E). Short rhabdome; usually blunt or hastate ends, rarely acerate or mucronate; protoclade slightly curved upwards and deuteroclade curved downwards, both forming a slightly arched cladome; abruptly pointed ends. Some spicules with a slightly inflated region near to cladome.

**Microscleres** (Measurements – Table 1).

Oxyasters (Figs. 3C-G): 4-10 slender rays, microspined along their length, with gradually pointed ends.

Spheroxyasters (Figs. 3C-G): 6-13 stout rays, sharply spined, with blunt ends; spines more concentrated at the distal portion.

**Remarks**

*Stelletta ruetzleri* sp. nov., *S. hajdui* Lerner and Mothes, 1999, *S. phrissens* Sollas, 1886 and *S. clarella* De Laubenfels, 1930 (the last two recorded from Magellan Province); all of them are recorded from cold deep waters (Table 2).

*S. phrissens* differs from the new species in the presence of anatriaenes and strongylasters and *S. clarella* in the occurrence of anatriaenes, plagiotriaenes and strongylasters.

*S. ruetzleri* sp. nov. is close to *S. hajdui* in the presence of oxyasters and spherocyasters, but the latter differs from the present species in the possession of plagiotriaenes, two categories of oxeas, smaller oxyasters and spherocyasters which have more numerous rays (14-20) and slightly microspined rays, with abruptly pointed ends. It is, nevertheless, a probable sister species of *S. hajdui*.

**KEY TO THE BRAZILIAN SPECIES OF STELLETTA**
(adapted from Lerner and Mothes, 1999)

1a. Megascleres oxeas and orthotriaenes .......... 2
1b. Megascleres oxeas and plagio- or dichotriaenes ................................................... 3

2a. Only tylaster microscleres .............................. 4
2b. Tylaster and anthaster microscleres

............... *S. crassispicula* (Sollas, 1886)

3a. Plagiotriaenes; two categories of oxeas; oxyasters smaller and smooth; spherocyasters with 14-20 thin, slightly spined rays, with sharply pointed ends ............................ *S. hajdui* Lerner and Mothes, 1999

3b. Dichotriaenes; one category of oxeas; oxyasters microspined; spherocyasters with 6-13 stout, sharply spined rays, with blunt ends ............... *S. ruetzleri* sp. nov.

4a. With anatriaenes .......... *S. purpurea* sensu Lerner and Mothes, 1999 [not *S. purpurea* (Ridley, 1884)]

4b. Without anatriaenes ........................................ 5

5a. One category of oxeas ............. *S. anancora* (Sollas, 1886)

5b. Two categories of oxeas ............ *S. gigas* (Sollas, 1886)

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**Table 1.** – Comparative data on spicular micrometries of *Stelletta ruetzleri* sp. nov. Means are in italic. The width is given after bars (/). Dichotriaenes measurements are shaft length / shaft width / cladome length / protoclade length / protoclade width / deuteroclade length; euasters measurements are diameter of the entire spicule. N = 50. Measurements in µm.
Table 2. – Spicules, geographic and bathymetric distribution of the species of *Stelletta* Schmidt, 1862 recorded from cold waters in the South Brazilian coast and adjacent areas. Measurements in µm.

<table>
<thead>
<tr>
<th>Species</th>
<th>Reference</th>
<th>Oxea I</th>
<th>Oxea II</th>
<th>Anatriaene</th>
<th>Protriaene</th>
<th>Dichotriaene</th>
<th>Plagiotraene</th>
<th>Oxyaster</th>
<th>Spheraster</th>
<th>Strongylaster</th>
<th>Geographic and bathymetric distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>S. hajdui</em></td>
<td>Lerner and Mothes, 1999</td>
<td>1840.0-2240.0/2599.0/920.0-</td>
<td>920.0-1340.0/27.1-38.0</td>
<td>Rares, Cladome</td>
<td>342.0-760.0/389.5-988.0/38.0-66.5</td>
<td>6-12 rays; diameter</td>
<td>14-20 rays; diameter</td>
<td>200-300 m</td>
<td>6.9-11.5</td>
<td>Off RS State coast, Brazil 32°24'S/50°15'W; depth 200 m</td>
<td></td>
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<tr>
<td><em>S. phrissens</em></td>
<td>Sollas, 1888</td>
<td>4650–4890 / 70-73</td>
<td>Rhabdome: 87.2–810/ width along the shaft: 51-37–58</td>
<td>Rhabdome 3500–4190/118–120; protoclade 127–143/700; deuteroclade 254–303/286</td>
<td>Smooth or microspined Rays</td>
<td>19.8–27/ 3-4</td>
<td>Usually 10</td>
<td>Patagonia 50°08’30”S / depth 74°41’00”W; 171 ftb (=320.25 m)</td>
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<tr>
<td></td>
<td>Desqueyroux, 1976</td>
<td>48 50</td>
<td>Rhabdome Aprox. 9000</td>
<td>Rhabdome 3790</td>
<td>20-32</td>
<td>10-12</td>
<td>35-40</td>
<td>20-32</td>
<td>35-40</td>
<td>Patagonia 50°08’S/74°41’W depth not registered; East of South America - 41°S</td>
<td></td>
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<tr>
<td></td>
<td>Desqueyroux and Moyano, 1987</td>
<td>not registered</td>
<td>not registered</td>
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<td>not registered</td>
<td>not registered</td>
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<td>not registered</td>
<td>Chilean localities 39-47°S/51-53°S, 0-25 m depth</td>
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<tr>
<td><em>S. clarella</em></td>
<td>Desqueyroux, 1972</td>
<td>1050-300/ 20-50</td>
<td>1000-2000/ Pro- to plagio- rhabdome max.</td>
<td>Maximum diameter 15</td>
<td>0-95 m, Chile coast, Gulf Corcovado, 43°30’S/73°30’W Magellan Province (excl. Falkland)</td>
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<td>Desqueyroux, 1976</td>
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<td>39-44°S, 0-25 m and 50-300 m depth</td>
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<td>Magellan area</td>
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<td>Sarà et al., 1992</td>
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ACKNOWLEDGEMENTS

The authors are thankful to Dr. Ricardo Capitoli, FURG, Brazil, for donation of the specimens of Stelletta ruetzleri sp. nov.; to Cléa B. Lerner for the revision and comments on the manuscript; and to the technicians Mr. Cleodir J. Mansan and Ms. Márcia Spadoni, for the SEM photos. This study was supported by grants of FAPERGS, Brazil (Carla Silva) and CNPq and FAPERGS, Brazil (Beatriz Mothes).

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