

***SCLERANTHELIA MICROSCLERA* N. SP.
(ANTHOZOA: STOLONIFERA) FROM THE STRAIT
OF GIBRALTAR AND CANARY ISLANDS**

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ABSTRACT

Only two species of the genus *Scleranthelia* Studer, 1878 are known: *S. rugosa* (Pourtalés, 1867) has been reported in European waters, and *S. thomsoni* Williams, 1987 from south-eastern Africa. In this paper, *Scleranthelia microsclera* sp. nov., the third species of the genus to be discovered, is described from the Strait of Gibraltar and Canary Islands. The distinguishing characters of this species are the small size of the calyx plates, and the distinctive shape of the stolon plates.

INTRODUCTION

The Strait of Gibraltar is a highly interesting zoogeographical area. The anthozoan fauna of this narrow communication between the Atlantic Ocean and the Mediterranean Sea is poorly known. The Canary Islands are a very interesting area included among the macaronesian archipelagos. Information about their anthozoan fauna is scarce and scattered.

Recently the Laboratorio de Biología Marina of the University of Seville and Cádiz (Spain) initiated a program to study the anthozoan fauna from the Strait of Gibraltar and nearby areas. So far, three marine biological expeditions "Bahía 90" and "Bahía 91" in Algeciras Bay (Southern Iberian Peninsula) and "Ceuta 91" (North Africa) were carried out within a more comprehensive survey of the marine benthos. In the former expedition, the first author collected the new species of stoloniferous octocoral described here from the shores of the Strait of Gibraltar.

During the searches of the "Plan de Bentos Circuncanario" (1970-1982) the new species was found and reported by Brito (1985) as *Sarcodictyon* cf. *catenatum* (Philippi, 1842) from Canarian waters.

In this paper, *Scleranthelia microsclera* n. sp. from Iberian and Canarian waters is described and compared with other congeneric species.

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MATERIAL AND METHODS

Colonies were collected by SCUBA diving or fishermen's net. Specimens were anaesthetized with menthol and fixed in formalin. The colonies were dissected under a stereomicroscope. Sclerites from different parts of the colonies (calyces and stolons) were prepared for study in the scanning electron microscope, and semipermanent mounts were made for observation in the light microscope.

RESULTS

Genus *Scleranthelia* Studer, 1878

Diagnosis. Colonies with simple polyps, anthocodiae completely retractile into calyces. Polyps connected by a very thin stolon. Calyces short to long, conical and sometimes tapering distally, cylindrical with parallel sides. Sclerites of the calyces and stolons unfused, in polygonal and massive plates, six-radiate, rod-like or spindle-like. Outer surface of the larger sclerites different from the inner surface. A fine periderm covers calyces and stolons.

Type species: *Scleranthelia rugosa* (Pourtalés, 1867).

Scleranthelia microsclera n. sp.

Figures 1 and 2

Type material. Holotype collected in Ensenada de Getares, Algeciras Bay (Cádiz, Southern Iberian Peninsula): 36°04.54'N; 5°25.36'W: 1 colony at 6 m. (17.VII.1990), deposited in the Museo Nacional de Ciencias Naturales of Madrid, Spain (MNCN 02.04/0002). Paratype (1 colony), collected at the same locality and date as the holotype, deposited in the first author's collection.

Other material. Collected in Candelaria (Tenerife, Canary Islands): 28°20.12'N; 16°20.21'W: 1 colony at 115 m. (22.I.1981), 1 colony at 65 m. (26.VI.1981), deposited in the Museo Insular de Ciencias Naturales of Santa Cruz de Tenerife, Canary Islands, Spain.

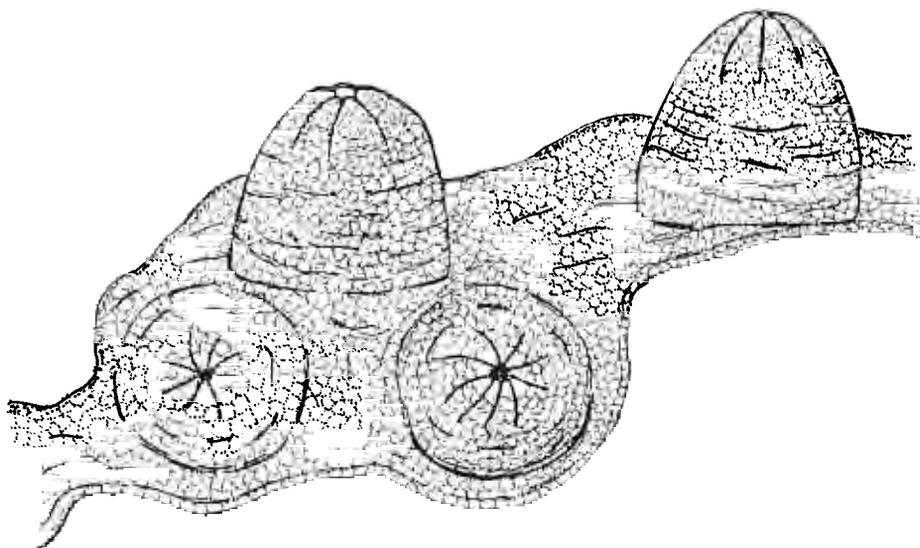


Fig. *Scleranthelia microsclera* n. sp. Holotype. Scale bar 2 mm.

Description. Colonies consisting of simple polyps, united by flat stolons, sometimes widest in basal plate in which 3-4 polyps are located. In all the cases individual polyps are well defined. Calyces are about 4 mm in height. Polyps in full extension were not observed. Distance between polyps was usually less than 8 mm, in some cases they were very close to each other. Calyx and stolon densely covered with sclerites, which permit no observation of the internal structure of polyp. Anthocodia without sclerites. Anthostele and stolon roseate in colour due to the colour of the sclerites. This colour is a little darker by the external periderm, which covers the anthostele as well as stolon, and where foreign particles adhere.

The sclerites present in the calyces and stolon are typical for the genus: massive plates, more or less polygonal, some of minor size, 6-radiate. The outer face of the massive sclerites have swellings with small spines, the inner face is much rougher. The size of the plates in the calyx is 70-180 x 45-90 μm , and in the stolons 45-160 x 25-160 μm .

Etymology. The name *microsclera* refers to the small size of the sclerites compared with those of the congeneric species.

Distribution and ecological notes. *Scleranthelia microsclera* is only known from the Strait of Gibraltar and Canary Islands. At present no other locations have been reported. This stoloniferous octocoral was collected in the Strait of Gibraltar under stones at 6 m depth. In the Canary waters it was found growing on dead

branches of the scleractinian *Dendrophyllia ramea* and basalt rocks between 65 and 173 m depth.

DISCUSSION

The genus *Scleranthelia* was erected by Studer (1878a), although the species assigned, *Scleranthelia musiva*, was described in the same year (Studer 1878b). Previously, Pourtalés (1867) described from Caribbean waters the species *Sarcodictyon rugosus*. Bayer (1981) studied many specimens of *Scleranthelia* from the Atlantic ocean and considers *Scleranthelia musiva* and *Sarcodictyon rugosus* as two growth forms of the same species. *Scleranthelia rugosa* forma *rugosa* with a reticulate stolon, and *Scleranthelia rugosa* forma *musiva* with membranous stolons. Carpine (1964) records the species in the Mediterranean Sea, and illustrates a colony and some sclerites.

D'Hondt (1986) redescribed the type material of *Scleranthelia musiva*, previously studied by Molander (1929), and pointed out the big size of the sclerites present in the calyces and stolons.

Tixier-Durivault (1966) lists *Scleranthelia musiva* in her Fauna of Madagascar. Some years later, Williams (1987) described *Scleranthelia thomsoni* from the southeastern African coast, the second species known of the genus, and considered the specimens studied by Tixier-Durivault as conspecific.

Scleranthelia microsclera is closer to *S. rugosa* than the Williams' species, distinguished by the size of the calyx, number of plates in the calyx and size range of the sclerites. These differences seem to be sufficient, in our opinion, to separate our species from *Scleranthelia rugosa* and to name a new species. Williams (1987) includes a comparative table of the main features of *Scleranthelia rugosa* and *S. thomsoni*. In Table 1, we reproduce this one with the addition of the characters of *S. microsclera*.

The general appearance of the sclerites from *Scleranthelia microsclera* is similar to those of the two other European species *Sarcodictyon catenatum* (Forbes in Johnston, 1847) and *Rolandia rosea* (Philippi, 1842) (sensu Weinberg, 1978). However, the main differences among these species are the shape, size, colour, density and distribution of their sclerites.

Sarcodictyon catenatum presents 6-radiate sclerites, up to 130 μm , rose to yellow in colour, in high density in the stolon and anthostele, impossible to distinguish individually, in the tentacles there are small, elongated or cross-shaped sclerites, up to 75 μm and colourless (Herdman 1883, Manuel 1981, Bayer 1981, pers. obser.). However, *Rolandia rosea* presents sclerites as irregular flattened plates, double clubs and fused "quadruplets" up to 110 μm , red in colour, the density of the sclerites is not very high, it is possible to distinguish them individually, sclerites are not present in the anthocodia (Lacaze-Duthiers 1900, Weinberg 1978; pers. obser.). *Scleranthelia microsclera* presents massive plates, more or less polygonal, some of minor size, 6-radiate with different

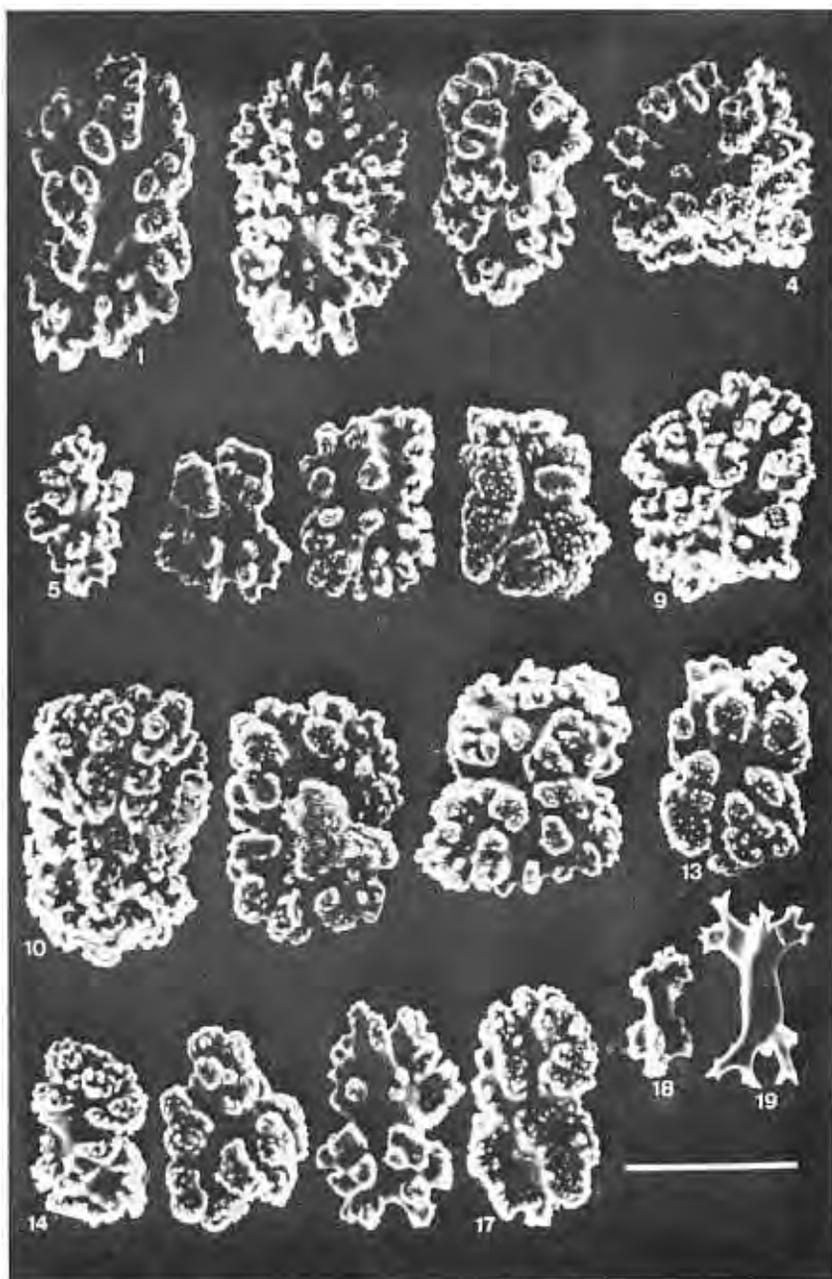


Fig. 2. *Scleranthelia microsclera* n. sp. Holotype. Scanning electron micrographs of sclerites. (1-9) Sclerites from the calyces. (10-19) Sclerites from the stolons. Scale bar 75 μ m.

aspect in the inner and outer faces, up to 180 μm , rose in colour. The high density of the sclerites in the stolon and anthostele make it impossible to distinguish them individually, besides the sclerites are not present in the anthocodia.

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Table 1. Comparative features for the species of the genus *Scleranthelia* (modified and expanded from Williams, 1987).

	<i>S. rugosa</i> (Pourtalés 1867)	<i>S. thompsoni</i> Williams 1987	<i>S. microsclera</i> n. sp.
Calyx:			
Size	5 mm long x 1.5 mm wide	15 mm long x 4 mm wide	4 mm long x 2 mm wide
Shape	Conical; tapering distally	Cylindrical or tubular; sides parallel	Conical or globular
Plates of the calyx:			
No. per calyx	Usually < 50	Usually > 100	Usually > 100
Max. length	1.0 mm	.6 mm	0.180 mm
Margin of stolon plates:	Deeply scalloped or lobed	Minutely toothed, but not deeply lobed	not deeply scalloped or lobed
Distribution and depth:	North Atlantic, Caribbean, and Mediterranean (77-586 m)	South-eastern Africa (85-340 m)	Strait of Gibraltar and Canary Islands (6-115 m)