

Sarcophyton andamanensis, a new species of soft coral from Andaman Islands

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The Andaman Islands are very well known to support one of the richest coral formations in the Indo-Pacific region. An examination of the soft coral material collected by R.V. Gaveshani in the Andaman Sea during the years 1991-92 revealed the existence of a new species of the genus *Sarcophyton*, which is described here. The type specimens were preserved in 70% ethanol and deposited in the Marine Biology Museum at the National Institute of Oceanography, Goa, India.

SYSTEMATIC ACCOUNT

- Phylum : Coelenterata
Class : Anthozoa
Sub-Class : Octocorallia
Order : Alcyonacea
Family : Alcyoniidae

Sarcophyton andamanensis n.sp. (Figs.1-4)

Type material : 8 tiny colonies attached to pieces of stony coral, Intertidal Zone, Corbyn's Cove, Lat. 11°38' N and Long. 12°45' E. Colour dark-green, stalk and disc with cream coloured tentacles when alive. Holotype : Regd. No. NIO/DOD/DIO-423.

Paratype : Regd. No. DIO/DOD/DIO-424.

NIO -- National Institute of Oceanography

DOD -- Department of Ocean Development

DIO -- Drugs from the Indian Ocean

Colour : Dark green stalk and disc with cream coloured tentacles when alive.

Diagnosis : A small heart-shaped colony the distance between the autozooids in the periphery being 2 mm and distance in the centre 2.5 mm, the maximum number of siphonozooids being approximately 6. Numerous shuttles and capstans in surface layers, coenenchyma of stalk, irregular shaped sclerites in all parts of colony and hollow tubular nature of disc and stalk.

Description : Tiny heart-shaped colony which is attached to a piece of a stony coral has a height of 2 cm (Fig. 1). The stalk is 1.5 cm high. Capitulum is completely flat and measures 3 cm in diameter. At some places, the autozooids are protruding above the surface of disc. When observed in the field, the anthocodiae of the living colony has a length of 30 mm. The apertures left by the retracted autozooids are clearly visible at other places. They are 1.2 to 2 mm apart at the periphery, more towards centre and 4 to 6 at certain places.

Polyps have denticulate type sclerites with wavy edges and thin rods measuring upto 0.05 mm in length (Fig. 2 i, m to p). The polyps from the margins do not contain sclerites, if at all present, very few in number. Mostly, the sclerites come from tentacle bases.

In the surface layer of the capitulum, number of shuttles occur measuring from 0.03 to 3.05 mm in length. The clubs are mostly ill decorated and the length varies from 0.1 to 0.24 mm (Fig 2 a to h). The clubs in the surface layer of the stalk are of the same type and size, but more wartier (Fig. 3 d-m). Apart from these, the capstan type sclerites are abundant (Fig. 3 a-c). The irregular bodies and few crosses are worthy to mention (Fig. 3 n, o).

Interior of the disc contains spindles bearing low cones (Fig. 2 k). In the middle of the spindles they look wider upto 0.08 mm in diameter. The maximum length of spingles measures upto 0.52 mm. Some of them are also bifurcated at one end (Fig. 2 j, l).

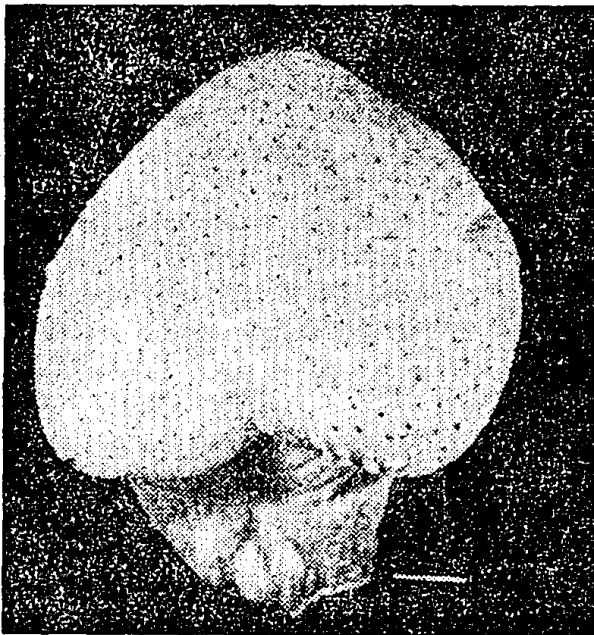


Fig. 1. *Sarcophyton andamanensis* n. sp., holotype.

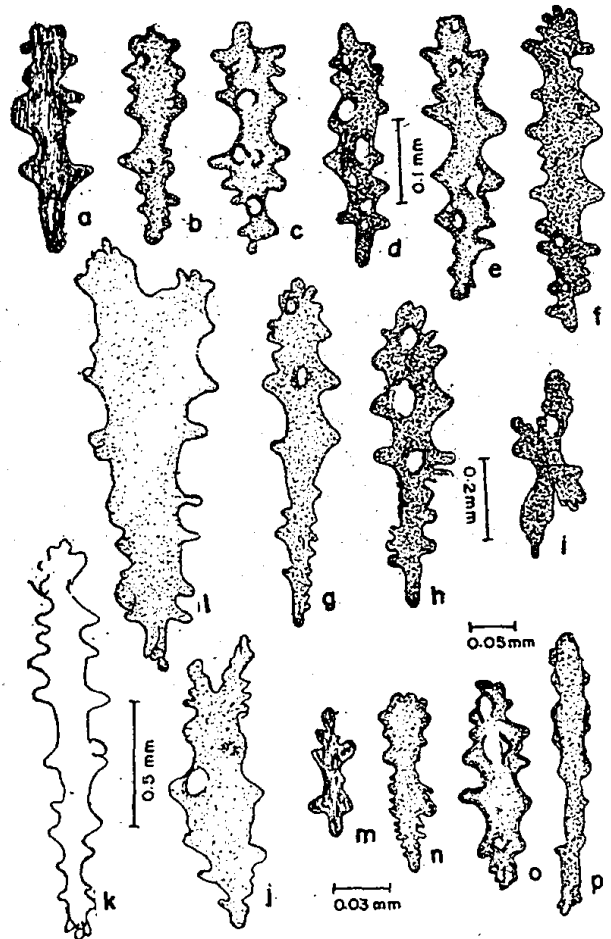


Fig. 2. Sclerites from surface layer of a lobe.

Coenenchyme of stalk contains mostly capstans measuring from 0.03 to 0.19 mm (Fig. 4 b - e). They measure upto 0.2 mm in length. Some of the more elongated ones could be interpreted as transitional forms to spindles (Fig. 4 f). The spindles measure upto 0.46 mm long (Fig. 4 g - i). In few cases, these are less wartier, flat and bifurcated at one end (Fig. 4 j). Apart from these, the irregularly shaped, a few flat plates like sclerites are also present measuring 0.03 to 0.05 mm (Fig. 4 a).

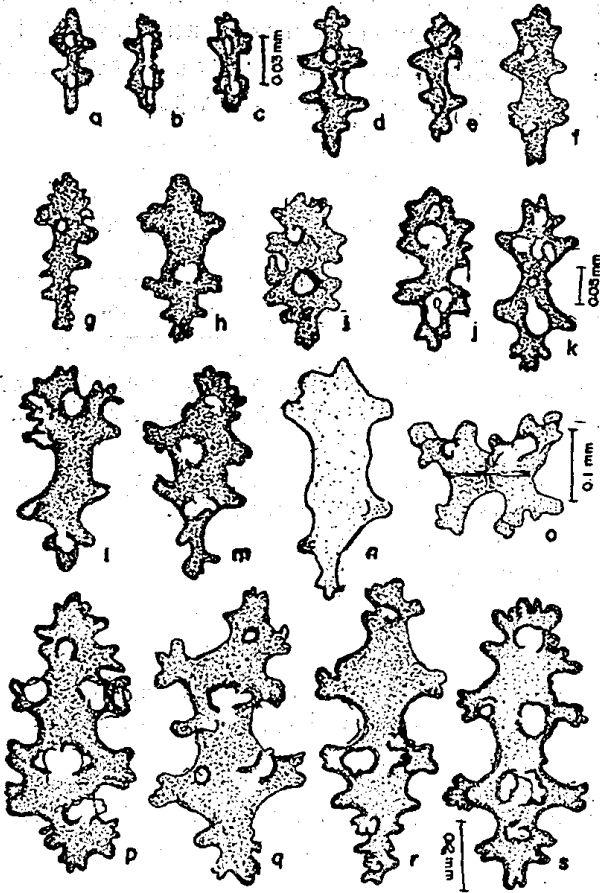


Fig. 3. Sclerites from surface layer of the stalk.

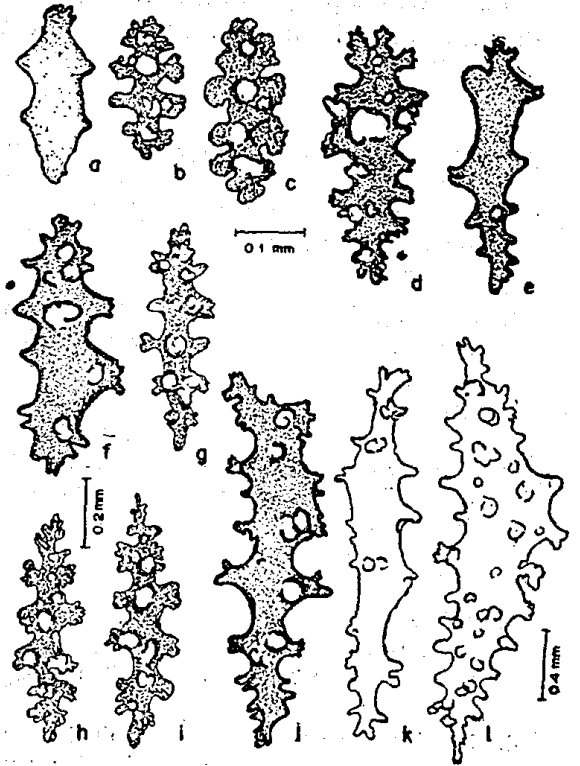


Fig. 4. Sclerites of the stalk interior.

Discussion: The species described in the present study is closely related to *Sarcophyton crassocaule* Moser, 1919 and *Sarcophyton stellatum* Kukenthal, 1910 but readily distinguishable from *Sarcophyton trocheliophorum* Von Marenzeller, 1886 by the shape of its clubs and in the internal sclerites, from *Sarcophyton solidum* Tixier - Durivault, 1958 in shape of the colony. Although the *Sarcophyton andamanensis* has similar morphological appearance as that of *Sarcophyton glaucum* (Quoy & Gaimard, 1833), *Sarcophyton cornispiculatum* (Ver-seveldt, 1971) and *Sarcophyton portentosum*

Tixier - Durivault, 1970, but these species differ in their sclerite shape and dimensions. A comparison between the three closely related species (Table 1) indicated that the present material can justify recognizing it as a new species.

The present species has also similarity in the less abundance of sclerites in the coenenchyme, flexibility and the hollow tubular nature as that of *Sarcophyton spongiosum* (Thomson & Dean, 1931), but the sclerite shape and size, number of autozooids and their distance are entirely

different (see Verseveldt, 1982). The interior of the capitulum and stalk lacking the abundance of spindles, probably indicate that these are inetertidai organisms where

there is less current and wave action. These can accumulate more water in their hollow interior, so that they may not dessicate themselves during low tides.

species

Table 1. Comparison between the new *Sarcophyton* and other related species

<i>Sarcophyton crassocaule</i>	<i>Sarcophyton</i> sp. nov.	<i>Sarcophyton stellatum</i>
1. Colony form mushroom-shaped.	Colony mushroom-shaped, with height of 3 cm.	Colony flat disc, thick lobes of margin formed by stout folds.
2. Distance between autozooids is 1.0 to 1.2 mm. At the margin one siphonozoid between them; towards the centre occur one or two of them.	The distance between autozooids 1.2 to 2.0 mm at the periphery and 2.5 mm in the centre. The siphonozoids are five or six.	The discription was not given in Verseveldt, 1982.
3. In the surface layer of the lobe, ill-defined, clubs measuring upto 0.22 mm.	Nnmerous shuttles and irregular shaped sclerites abundant. upto 0.23 mm.	The clubs are rods, pseudoclubs and measure up to 0.20 mm.
4. Interior disc contains slender spindles with low cones, measuring upto 0.47mm.	Spindles measure upto 0.52 mm, bearing low cones and few of them are bifurcated.	All irregular shaded sclerites measuring upto 0.30 mm.
5. In the stalk surface, the clubs are warty measuring upto 0.19 mm.	All irregular shaped clubs measuring upto 0.2 mm.	Many clubs are fantastically shaped, measuring upto 0.1 mm.
6. In the interior of the stalk lie oval or oblong sclerites, 0.25 mm long.	Irregular shaped ovals are present and measure upto 0.20 mm long.	Very warty ovals or cylinders measuring upto 0.29 mm.
7. There are oval bodies, without waist, completely covered with spines are preset measuring upto 0.28 mm long.	These sclerites are absent.	Absent.
8. There are no crosses or irregular shaped sclerites present in the surface layers.	Crosses present and measure upto 0.20 mm	Present and measure upto 0.30 mm.

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