

STUDIES ON INDIAN SPONGES—V*

TWO NEW RECORDS OF SILICIOUS SPONGES BELONGING TO THE FAMILIES
MYXILLIADE HENTSCHEL AND SPIRASTRELLIDAE HENTSCHEL
FROM THE INDIAN REGION

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THE present author, during an extensive collection of sponges from the coastal waters of India, has come across two interesting species of sponges and these are described herein. The first one is *Hymedesmia mertoni* Hentschel. Its previous records are from Aru Island (Hentschel, 1912) and Great Barrier Reef (Burton, 1934). The present discovery of this has greatly extended its distribution westward to Indian Ocean. Similarly the other species, *Spirastrella pachyspira* Levi is originally known from Red Sea (Levi, 1958), and later from Western Indian Ocean (Levi, 1961, Vacelet and Vasseur, 1965). The present record of the same from Indian region, hence, widens its distribution in Indian Ocean.

ORDER *Poecilosclerida* Topsent

Family MYXILLIDAE Hentschel

Subfamily Myxillinae part II de Laubenfels

Genus *Hymedesmia* Bowerbank

Encrusting Myxillidae, with main skeleton consisting of vertically arranged acanthostyles with their heads buried in the basal coating of spongin. Dermal skeleton of diacts are arranged irregularly. Microscleres comprise arcuate isochelas and sigmas. Type of the genus *H. zethandica* Bowerbank, 1864.

Hymedesmia mertoni Hentschel

(Figs 1a-g)

Hymedesmia mertoni Hentschel, 1912, p. 376, pl. 20, fig. 34

Burton, 1934, p. 557.

Poecilochela mertoni de Laubenfels, 1936, p. 88.

Material: Three specimens, thinly encrusting on coral rocks. Examined in fresh condition. Preserved in 60% alcohol.

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Description : Sponge thinly encrusting and spreading irregularly. Thickness about 0.5 mm. Coloured green in living condition and soft to touch. Oscules and pores are not visible. Surface slightly hispid. A well developed dermal membrane is present. Endosome rather compact. The dermal membrane is thin and transparent. It is reinforced by tornotes arranged horizontally or diagonally without any distinct pattern. Microscleres are represented in the dermal part in good numbers.

The main skeleton is typical of the genus *Hymedesmia*. Acanthostyles are found erect on the substratum with their heads deeply buried in the basal coating of spongin. Spongin covers the basal portion of the acanthostyles to a considerable distance starting from the head. Large acanthostyles project beyond the dermal membrane and this arrangement gives a sort of hispidity to the surface. Microscleres lie scattered in the endosome irregularly.

Spicules : 1. Acanthostyles (Large). Slightly curved and sharply pointed; spined throughout, with erect spines. Head more densely spined than the shaft. Length varies from 0.147 to 0.198 (0.172 mm average) and greatest width (excluding spines) 0.006 to 0.009 (0.007 mm average).

2. Acanthostyles (small). Shape as in the former. Length from 0.048 to 0.085 (0.071 mm average) and width from 0.002 to 0.004 (0.003 mm average).

3. Tornotes. Straight, ends unequal. Length varies from 0.105 to 0.147 (0.123 mm average) and width from 0.001 to 0.002 mm.

4. Sigmas (Large). C or S shaped. Chord length from 0.038 to 0.050 (0.043 mm average), width about 0.003 mm in well developed forms, abundantly represented.

5. Sigmas (Small). C or S shaped (deeply curved forms are also seen). Chord length varies from 0.012 to 0.018 (0.016 mm average) and width 0.001 mm average.

6. Arcuate isochelas (Large). Shaft curved and teeth sharply pointed. Chord length varies from 0.018 to 0.021 mm.

7. Arcuate isochelas (Small). Shaft strongly curved. Shape as in the small isochelas of *Leptosia dichela* Hentschel (1911, p. 357). Chord length 0.010 mm average.

Distribution : Indian Ocean and Australian region.

Locality : Gulf of Mannar. Depth : 1-2 Metres.—C.M.F.R.I.-S. 42—11-3-1967.

ORDER Hadromerida Topsent

Family SPIRASTRELLIDAE Hentschel

Spirastrella pachyspira Levi

(Figs. 2a-d)

Spirastrella pachyspira Levi, 1958, p. 19, fig. 15.

Levi, 1961, p. 13, fig. 14.

Vacelet and Vasseur, 1965, p. 94, pl. 5, fig. 13.

Material : Eight specimens. All are preserved in dry condition except one (No. 98 B) which is in 60% alcohol.

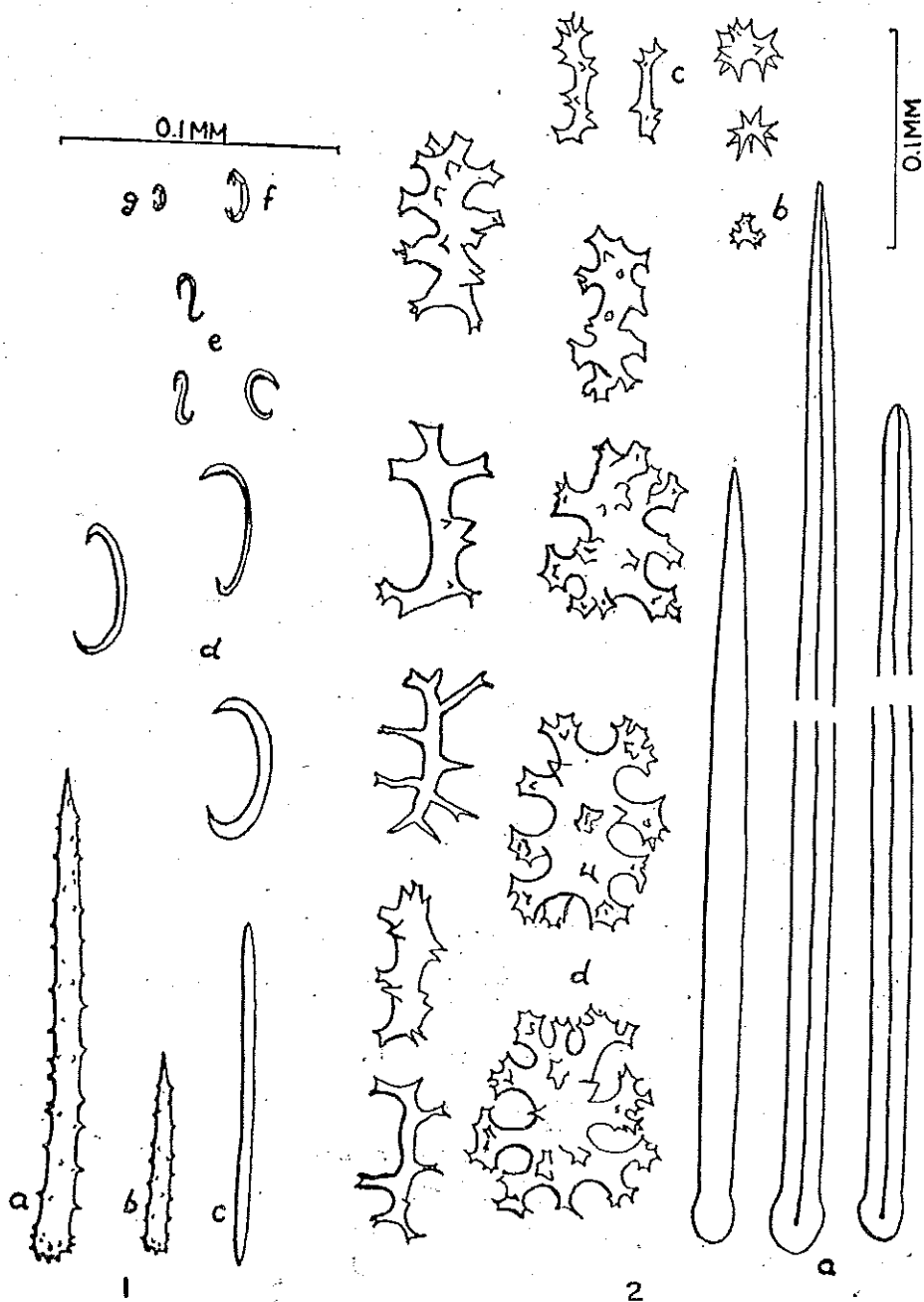


FIG. 1.—*Hymedesmia meffioni* Hentschel—(a) Acanthostyle (large); (b) Acanthostyle (small) (c) Tornote; (d) Sigmas (large); (e) Sigmas (small); (f) Isochela (large); (g) Isochela (small).
 FIG. 2.—*Spirastrella achyspira* Levi—(a) Tylostyles; (b), (c), (d). Different types of spirasters.

Description : This usually grows on the corals at a depth of 4 to 8 feet in the Gulf of Mannar. Body encrusting irregularly. Height of the encrusting part never comes more than 3 mm. Surface irregularly comulose or ridged. Tylostyles project out of the surface about 1/3rd of their length.

When alive the colour is violet usually, though pink is noted in some parts. Interior pale yellow. Fleshy but slightly compressible. Oscules and pores are not visible in the living condition. A definite dermal skeleton is absent. Outer part slightly pigmented. Endosome dense and charged with microscleres.

The modified spirasters form a sort of plate by the interlocking of their spines and this plate is distinctly seen in boiled out preparations. From the upper part of the plates, deeply buried in the tissue, emerge the tylostyles in groups. These spicules are plumosely arranged. In some places the tylostyles emerging from the adjacent brushes converge and usually such an arrangement is noted in surface ridges.

Spicules : 1. Tylostyles. Straight with a well developed globular or rounded head. Tips sharply pointed or rarely blunt (6%). Length varies from 0.315 to 0.959 mm (0.611 mm average) and width from 0.013 to 0.021 (0.018 mm average). Head, when well developed, with diameter of 0.29 mm average.

2. Spirasters. May show much variations. (a) Small spiraster with curved centrum and spines arranged on the convex parts is three groups, average size 0.016 mm. (b) Typical slender spirasters with 2 to 3 curves and with spines arranged spirally. Spines sharp; size 0.042×0.004 mm. (c) Ordinary robust spirasters with blunt spines, size 0.050×0.016 mm. (d) Highly modified spirasters with branching (modified spines) size 0.105×0.063 mm (including branches).

Distribution : Red Sea and Indian Ocean.

Locality : CMFRI-S. 98—Gulf of Mannar—(Hare Island. Depth : 1-2 Metres).

SUMMARY

Two silicious sponges *Hymedesmia mertoni* Hentschel and *Spirastrella pachyspira* Levi are recorded here from the Indian region.

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