

A NOTE ON THE BRITTLE STAR *OPHIOMUSIUM SIMPLEX* LYMAN
(ECHINODERMATA : OPHIUROIDEA) NEW TO THE BAY OF BENGAL

By

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ABSTRACT

The Ophiuroid species, *Ophiomusium simplex* Lyman of the family Ophiuridae, has hitherto been reported off Southern Japan, Philippine Islands and East Indian Archipelago from 54 to 300m. The new material reported here from the Andaman Islands (India) and Mergui Archipelago (Burma) extends the distribution of the species westward into the Bay of Bengal. The species has also been compared with *O. australis* H. L. Clark which has till recently been considered as a variety of *O. simplex* Lyman.

During the studies on unnamed Echinodermata in the Zoological Survey of India, Calcutta, the present author identified as *Ophiomusium simplex* Lyman (Ophiuridae, Ophiolepidinae) a few specimens collected off the Andaman Islands and Mergui Archipelago. The species has so far been reported only from S. Japan, Philippines and the Indonesian Islands. The present communication reports for the first time the occurrence of *O. simplex* in the Bay of Bengal. The following is a brief account of the specimens of *O. simplex* studied by the author.

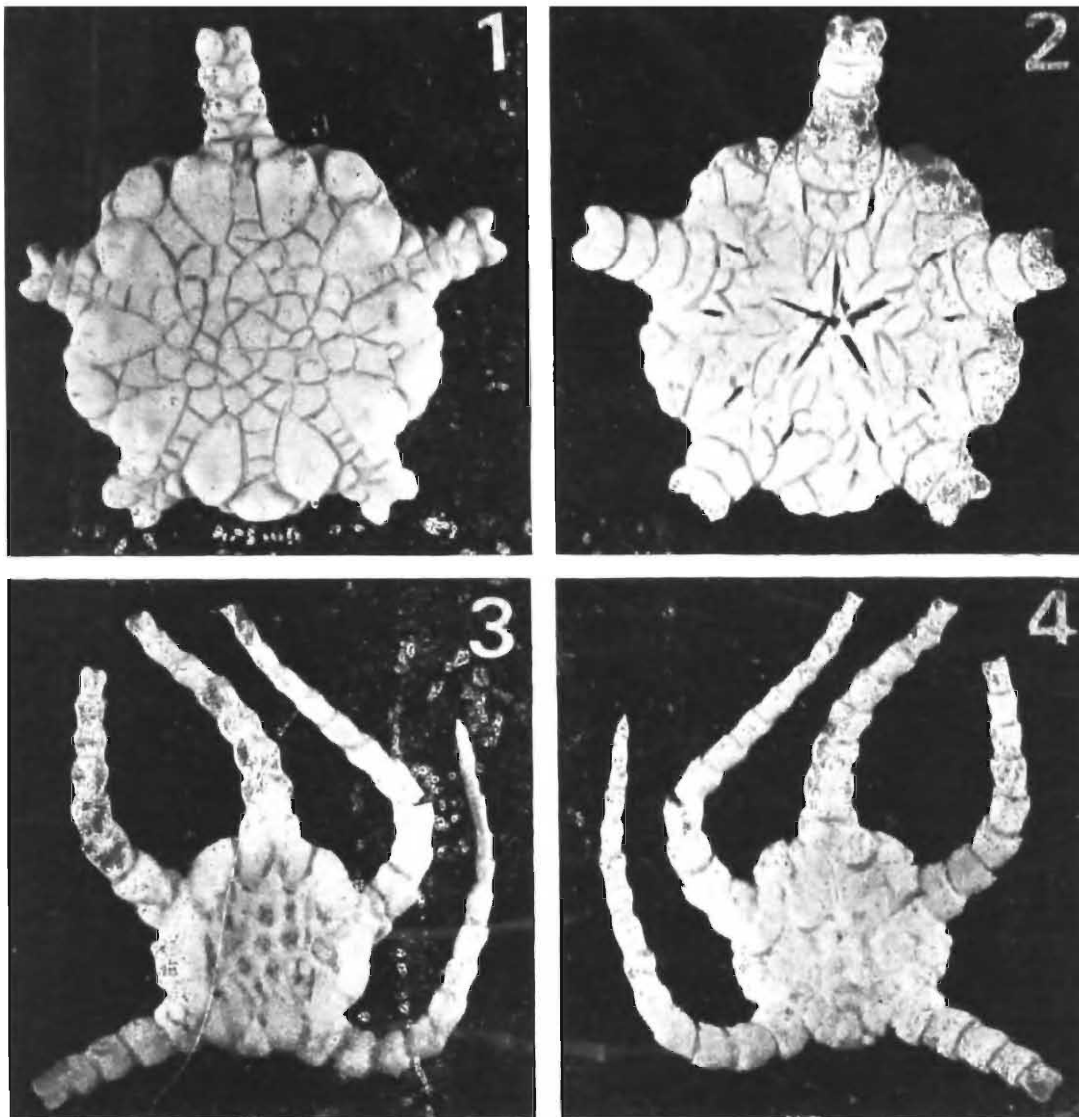
Ophiomusium simplex Lyman
(Plate IX, figs. 1-4 ; Figs. 1, 2)

1878. *Ophiomusium simplex* Lyman, *Bull. Mus. comp. Zool. Harv.*, V(7) : 115, pl. I, figs. 10, 11.

1882. *Ophiomusium simplex* : Lyman, *Voy. Chall. Zool.*, 5 : 93, pl. I, figs. 7-9.
1904. *Ophiomusium sanctum* Koehler, *Siboga Exped. Monog.*, 45a : 59, pl. XI, figs. 7-9.
1911. *Ophiomusium simplex* : Clark, *Bull. U. S. natn. Mus.*, 75 : 109.
1922. *Ophiomusium simplex* : Koehler, *Bull. U. S. natn. Mus.*, 100 (V) : 417, pl. 88, figs. 10, 11.
1930. *Ophiomusium simplex* : Koehler, *Vidensk. Meddr dansk naturh. Foren.*, 89 : 241.
1963. *Ophiomusium simplex* : Murakami, *Publs Seto mar. biol. Lab.*, XI(2) : 179.
1980. *Ophiomusium simplex* : Guille, *Result. Camp. MUSORSTOM*, 91 : 45.

Material : Sta. 238, Off Andamans ; 13°16'N 93°08'E ; 75-60 fms (137-110 m) ; Bottom-stones ; *R. I. M. S. "Investigator"* ; 13.iv.1898 ; Two specimens.

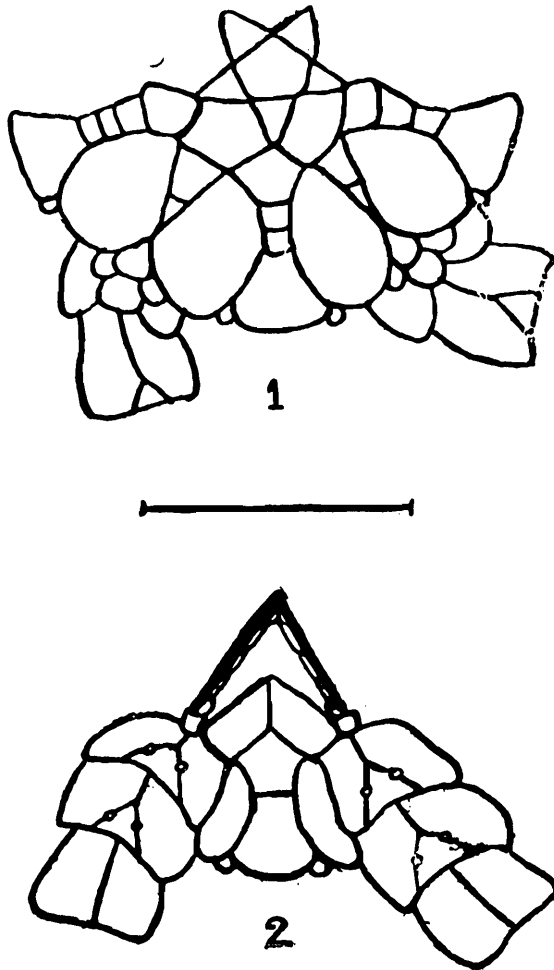
Sta. 534, Off Mergui Archipelago ; 12°59'N 96°48'30'E ; 60 fms (110 m) ;



Figs. 1-4. *Ophiomusium simplex* Lyman 1. Specimen from Sta. 238, d. d. 15 mm, dorsal view, 2. Same, ventral view ; 3. Specimen from Sta. 535, d. d. 4mm, dorsal view ; 4. Same. ventral view.

Bottom-coarse sand ; *R.I.M.S. "Investigator"* ;
17.iv.1913 ; One specimen.

Sta. 535, Off Mergui Archipelago ;
13°04'30"N 96°44'E ; 65 fms (119 m) ;



Figs. 1-2 : *Ophiomusium simplex* Lyman Sta. 535.
1. Dorsal view, 2. Ventral view. Scale 2 mm.

Bottom-sand mud ; *R.I.M.S. "Investigator"* ;
17.iv.1913 ; One specimen.

Description : The specimens range from 4 to 15 mm in disc diameter (d.d.) and have polygonal dorsal and ventral disc plates ; radial shields 1.43-1.60 times longer than their breadth and 0.23-0.25 of d.d. ; jaws with 4-6 lateral and one terminal oral papillae ; three ventral arm plates ; two pairs of small tentacle pores each with a

small rounded tentacle scale and genital slits 0.3-0.8 mm long, about as long as the second ventral arm plates or slightly longer. Proximally there are two short blunt spines set low on the lateral arm plates and one somewhat longer spine on distal segments.

Remarks : The smallest specimen measuring 4.0 mm d.d. from sta. 535 has arms about twice as long as d.d. with about 15 free segments and agrees with the description and figures of the holotype (Lyman, 1878) in having fewer dorsal disc plates, radial shields in a pair narrowly touching and only a central and two marginal plates in each ventral interbrachium. The radial shields and the dorsal and ventral marginal plates are, however, slightly swollen, though not distinctly, and a few smaller triangular plates separate the primary disc plates (Pl. IX, figs. 3, 4 ; Figs. 1, 2).

The two specimens from sta. 238 (d.d. 10.8 and 15 mm) and the one from sta. 534 (d.d. 12.7 mm) have 0-6 free segments of the different arms intact and agree with the figures given by Koehler (1904, 1922) in having swollen and well separated radial shields, swollen marginal plates and more number of disc plates on the dorsal side (Pl. IX, fig. 1) and on the ventral side a central plate, two swollen marginal plates, and 8-12 plates of which the two distal to the oral shield are larger, separating the oral shield, genital plates and the central plate from one another, in each interbrachium (Pl. IX, fig. 2). In the specimen from sta. 534 there are 1-3 very small ventral arm plates beyond the segment and three spines on one side of the fifth free segment of an arm.

Lyman (1878) mentioned the colour of of the holotype as white (probably decolou-

raised) as is also of the present specimens. However, the colour of the specimen from sta. 534 was noted on the label as 'bright orange-scarlet'. Koehler (1904, 1922, 1930), Clark (1911) Murakami (1963) and Guille (1980) did not mention the colour of their specimens.

Koehler (1904) described *O. sanctum* based on two specimens of 10 and 19 mm d.d. differing from the small holotype of 6 mm d.d. of *O. simplex* Lyman, in having more dorsal and ventral disc plates; much swollen radial shields and marginal disc plates; two large plates distal to the oral shields and three arm spines. Later, Clark (1911) finding all intermediate forms between the two nominal species among specimens ranging from 4 to 14 mm d.d. relegated *O. sanctum* Koehler to the synonymy of *O. simplex* Lyman, which act was subsequently endorsed by Koehler himself (1922, 1930). The present specimens from the Bay of Bengal are also in conformity with the observations of Clark (1911).

Recently, Baker (1979) raised *O. simplex* var. *australe* Clark (1928, p. 449, fig. 135) to species level with *O. aporum* Clark (1928, p. 447, fig. 134 only the holotype) as its synonym. *O. australe* differs from *O. simplex* in having longer arms (3-4 d.d. as against 2-2.5 d.d. in *O. simplex*); rounded disc plates (cf. polygonal in *O. simplex*); fewer plates in the ventral interbrachium; two overlapping tumid plates at the interradian margin of disc in addition to one dorsal and two ventral plates—prominently visible from above and below, and the radial shields and marginal plates less prominently swollen even at 14 mm d.d. Further, *O. australe* has so far been known off the southern and western

coast of Australia south of 25°S latitude while *O. simplex* is known between 10°S and 33°N latitudes in the Indo-West Pacific.

Distribution: The single holotype of *Ophiomusium simplex* [B. M. (N. H.) 82.12.23.443] was collected off Amboina in 183 m depth (100 fms) by *H. M. S. "Challenger"* (Lyman, 1878). The species has also been reported from S. Japan (Clark, 1911, Murakami, 1963); Philippines (Guille, 1980); Sulu Sea (Koehler, 1922); Molo straight, Sw Flores; Timor (Koehler, 1904) and Kei Is (Koehler, 1930) mainly from sandy bottom in depths ranging from 54 to 300 m. According to Guille (1980) the south Australian record by H. L. Clark (1946) is doubtful. The species is here reported for the first time off the coasts of India (Andamans) and Burma (Mergui Archipelago) in the Bay of Bengal.

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