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## ON TWO NEW *SINULARIA* SPECIES (OCTOCORALLIA: ALCYONACEA) FROM THE MOLUCCAS

by

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With 2 text-figures and 2 plates

The present note is based on alcyonacean material collected by Dr. Arthur G. Humes, Boston University Marine Program, Marine Biological Laboratory, Woods Hole, Massachusetts, U.S.A., while on board R/V "Alpha Helix" in the waters of the Moluccas in the spring of 1975. The corals, most of which were the hosts of copepods, were collected during the "Alpha Helix" East Asian Bioluminescence Expedition, which was supported by the National Science Foundation (USA) under grants OFS 74 01830 and OFS 74 02888 to the Scripps Institution of Oceanography and NSF grant BMS 74 23242 to the University of California, Santa Barbara. I thank Dr. Humes for entrusting the material to me.

The material is kept in the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands; the register numbers are preceded by the abbreviation RMNH.

The collection contains a number of well-known species, most of them are widespread throughout the warm Indo-Pacific area. Three species have not been recorded from Indonesian waters before. They are the following.

*Dendronephthya (Morchellana) castanea* Utinomi, 1952. One colony from the SW shore of Gunung Api, Banda Is., 4°31'45"S 129°51'55"E, depth 3 m, 4 May 1975, A. G. Humes no. 1834, RMNH Coel. no. 11834. Previously recorded from Japan (Utinomi, 1952) and the Philippines (Tixier-Durivault & Prevorsek, 1962).

*Litophyton acutifolium* Kükenthal, 1913. One colony from the same locality, but depth 10 m, 28 April 1975, A. G. Humes no. 1794, RMNH Coel. no. 11835. Field-note: "Long slender stalk, brown branches". Previously recorded from the Red Sea (Kükenthal, 1913; Verseveldt, 1974).

*Nephthea galbuloides* Verseveldt, 1973. One colony from Amboina, 3°37'05"S 128°17'00"E, depth 3 m, 24 April 1975, A. G. Humes no. 1749,

RMNH Coel. no. 11836. Previously recorded from Madagascar (Verseveldt, 1973).

Besides, the collection includes two new *Sinularia* species, viz. *S. ceramensis* sp. nov. and *S. nanolobata* sp. nov. A description of these species follows below.

I am indebted to Mr. W. ter Spill for editorial assistance, and to Mr. G. J. Vrijmoeth for making the photographs.

***Sinularia ceramensis* sp. nov. (fig. 1, pl. 1)**

Material. — Parang I., eastern Ceram, 3°17'00"S 130°44'48"E, depth 2 m; 23 May 1975. A. G. Humes no. 1909; RMNH Coel. no. 11837, one fragment, holotype; RMNH Coel. no. 11838, two fragments, paratypes.

Description of the holotype. — The fragment has diameters of 170 and 120 mm (pl. 1). At the base the sterile stalk is only 60 mm wide. Upwards it strongly broadens, like an inverted cone, to a spread of 170 mm; the upper edge of the stalk is 45 mm above the base of attachment, but the oblique side of the stalk, measured from base to upper edge, is up to 100 mm long.

The capitulum consists of numerous rather densely placed, large, flattened lobes. The height of these lobes varies from about 5 mm to 30 or 40 mm. The former are low knobs, the latter are 10 to 14 mm wide at the base; they taper distally, and are usually curved to the centre of the capitulum. Some are undivided, others give rise to short side-lobes, or are terminally

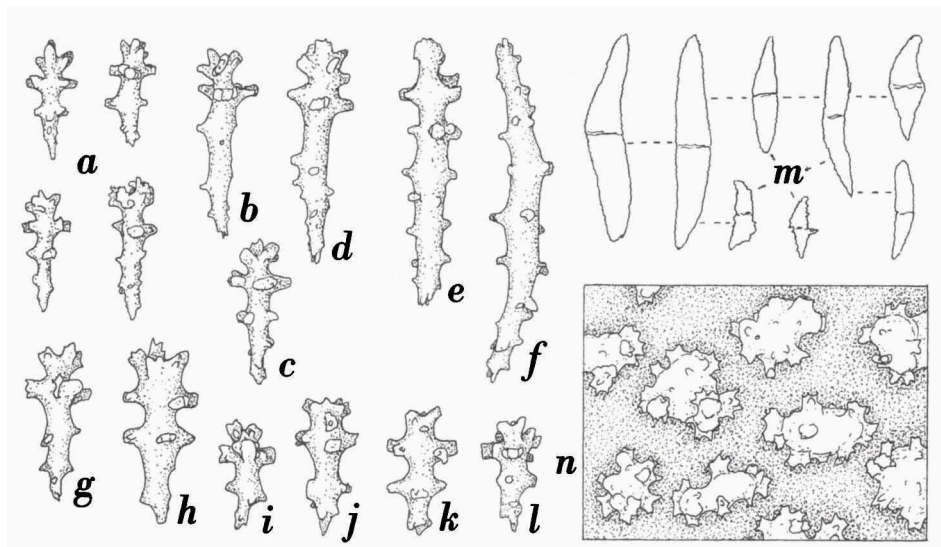


Fig. 1. *Sinularia ceramensis* sp. nov. a-f, sclerites from surface layer of a lobe; g-l, sclerites from surface layer of the sterile stalk; m, spicules from coenenchyme of the sterile stalk; n, warts on coenenchymal spicule. a-l,  $\times 220$ ; m,  $\times 10$ .

subdivided into two or more conical or digitiform secondary lobes. In one place a big primary lobe arises with a height of 50 mm; all around it is densely covered with flattened, conical side-lobes. The sterile stalk is hard, the lobes are slightly flexible.

The polyps are retracted into inconspicuous pits. The centres are 0.60 to 0.80 mm apart, but at the tips of the lobes the distance is 0.50 to 0.60 mm.

The spiculation of the surface of the lobes includes:

(1) clubs, 0.06 to 0.09 mm, sometimes up to 0.14 mm long, usually with a terminal wart and a whorl of blunt spines or small warts below it; the handle has some spines, often in one or two girdles (fig. 1a-d);

(2) spindles 0.15 to 0.25 mm long, provided with some blunt spines (fig. 1f); between clubs and spindles there are transitional forms (fig. 1e).

In the outer layer of the sterile stalk we find clubs 0.06 to 0.10 mm long; they are wider than those in the lobes (fig. 1g-l).

In the interior of the lobes and of the sterile stalk there are pointed or blunt-ended, tapering spindles up to 3 mm long, provided with a median constriction, and covered with medium-sized, crenelated warts (fig. 1m, n).

Colour. — In alcohol the colony is white.

Variability. — The paratypes are slightly smaller. In one of them the capitulum shows three big primary lobes, one of which reaches a height of 80 mm.

Remark. — It was impossible to refer the specimens (probably parts of one and the same colony) to any of the species described so far. The new species is marked by the large, tapering, flattened lobes, which sometimes arise from large primary lobes, and by the smallness of the clubs in the surface layers; these clubs have a central wart.

### ***Sinularia nanolobata* sp. nov.** (fig. 2, pl. 2)

Material. — Karang Mie, east Central Halmahera, 00°20'07"N 128°25'00"E, depth 2 m, 19 May 1975. A. G. Humes no. 1884; RMNH Coel. no. 11839, holotype; RMNH Coel. no. 11840, seven paratypes. Field-note: "Sheet-like, thin, tough, with small hard knobby lobes, colour light brown".

Description. — There are eight fragments, one of which I selected as the holotype (pl. 2). It consists of a saucer-shaped sheet, in the central part 6 mm thick, towards the edge slightly thicker, about 10 mm. The sterile side of the colony (there is no question of a sterile "stalk") strongly expands above its base of attachment.

Along the margin the disc is covered with crowded primary lobes, 7 to 10 mm high, which bear a number of very small, densely placed lobules, spherical or slightly indented at the top, and 2 to 3 mm in diameter. More towards the centre the primary lobes are 15 to 17 mm high; the crowded, round or oval lobules are wider, 4 to 6 mm in diameter (fig. 2a, to the left).

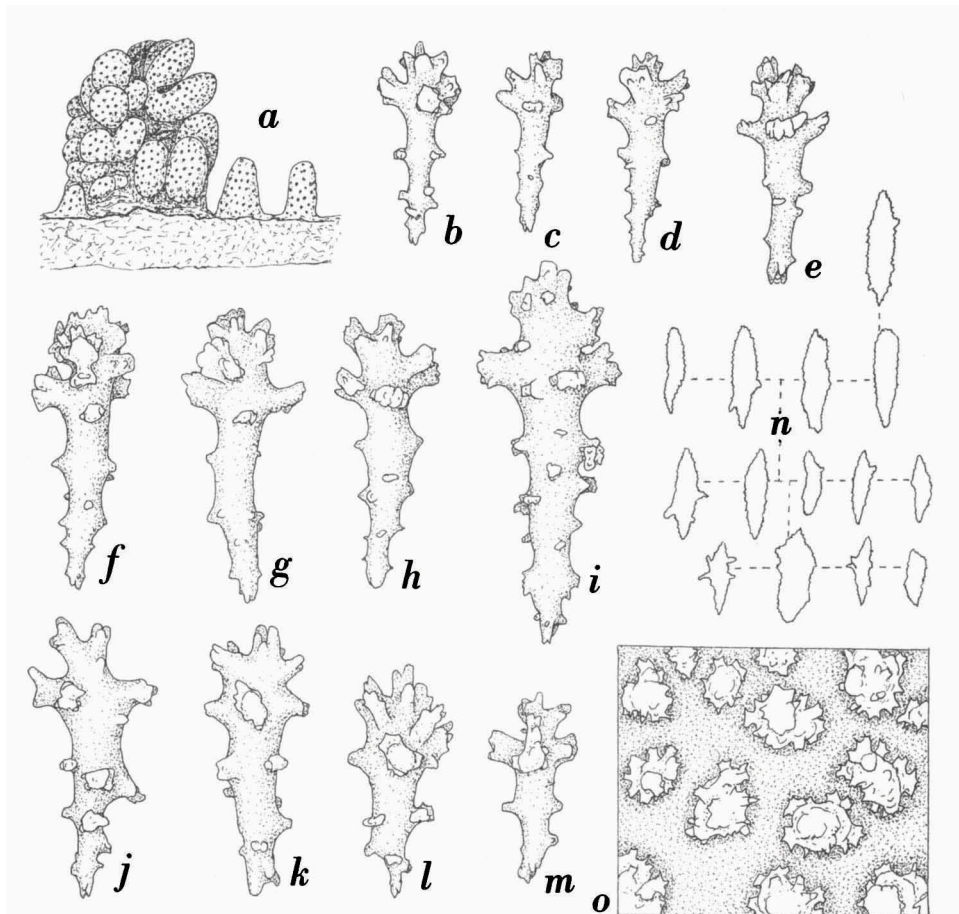


Fig. 2. *Simularia nanolobata* sp. nov. a, lobes; b-i, sclerites from surface layer of a lobe; j-m, sclerites from surface layer of the sterile stalk; o, warts on coenenchymal sclerite. a,  $\times 1.4$ ; b-m, o,  $\times 220$ ; n,  $\times 10$ .

In the central part of the disc the lobes are undivided, digitiform or conical, about 7 mm high, and not crowded (fig. 2a, to the right).

The polyps are retracted, leaving shallow pits, the centres of which are 0.80 to 1.00 mm apart.

The surface layer of the lobes contains clubs, 0.11 to 0.20 mm long, in a few cases up to 0.23 mm (fig. 2b-i). Most of them have a kind of central wart, which is composed of three or four knotted processes. Below this wart there is a whorl of warts directed obliquely upwards or standing at almost right angles. The fairly pointed handles have few, usually conical processes. In the sterile outer layer the clubs may be wider; their length varies from 0.10 to 0.17 mm (fig. 2j-m).

The coenenchyme has thick, pointed or blunt-ended spindles, up to 1.50 mm long and 0.40 mm wide (fig. 2n). Many of them have pointed or rounded outgrowths or other roughnesses. Some are covered with sharp or truncated spines, others with medium-sized warts (fig. 2o).

Colour. — The colonies are creamy-white.

Remarks. — In this species the most striking features are the flat shape of the colony, the smallness of the lobes, the clubs with their central wart, and the size of the coenenchymal spicules.

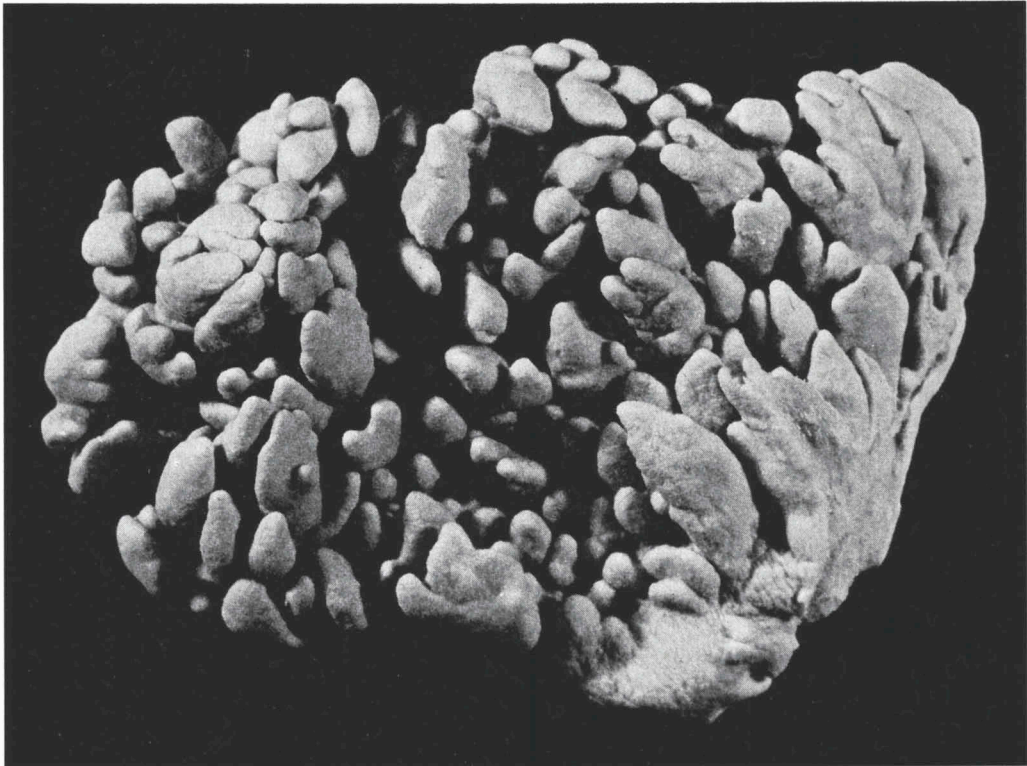
With respect to the size of the lobes and of the coenenchymal sclerites the species is reminiscent of *S. microspiculata* Tixier-Durivault, 1970: 255. But in the latter the colony is not saucer-shaped, the sterile stalk is high (18 mm), and the clubs are foliaceous.

There is also some agreement with *S. erecta* Tixier-Durivault, 1945 (I could re-examine one of Tixier-Durivault's type specimens). This species, too, has small lobes and small coenenchymal spicules, but the clubs are leaf-clubs, and the lobes are simple, and do not consist of a number of lobules, they are laterally flattened and sinuous, and stand wider apart.

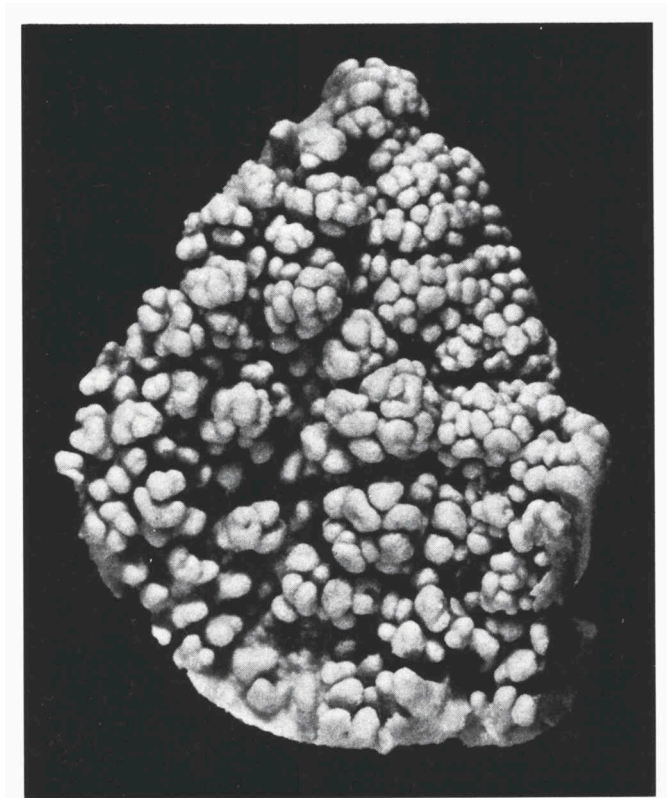
The specific name *nanolobata*, Latin *nanus* = dwarf, refers to the smallness of the lobes.

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*Sinularia ceramensis* sp. nov., holotype, RMNH Coel. no. 11837,  $\times 0.8$ .



*Simularia nanolobata* sp. nov., holotype, RMNH Coel. no. 11839,  $\times$  1.