

Four New Marine Sponges from Natal.

By

Maurice Burton, M.Sc.,

Department of Zoology, British Museum (Natural History), London.

With 4 Text-figures.

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THIS brief paper includes a description of four new species of marine sponges from the Natal Museum, collected at Umkomaas, Natal. The specimens were picked up on the shore after a storm, and consequently the depth from which they were derived is unknown.

Dasychalina mammillata *sp. n.*

Collected at Umkomaas, S. Coast, Natal, by Mr. W. Cullingworth, June, 1931.

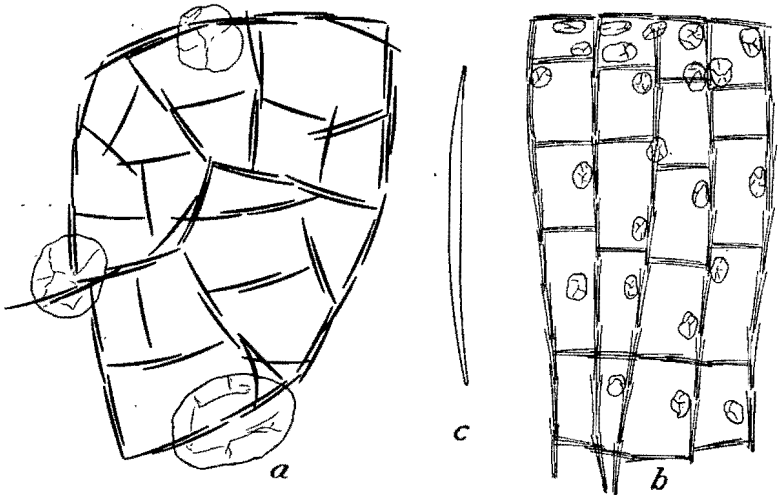
HOLOTYPE.—Natal Museum; Mus. No. 1407.

DIAGNOSIS.—Sponge irregularly massive, bearing numerous mammillate processes on surface; surface smooth, even; oscules 2–3 mm. diameter, at summits of mammillate protuberances; texture friable; colour, dried, ash-grey; inner tissues containing numerous sand-grains; main skeleton composed of fibres, 3–6 spicules thick, running vertically to surface, and joined at intervals by transverse fibres of similar dimensions; spongin not abundant, pale in colour and often imperceptible; dermal

skeleton a reticulation, with fibres 3-6 spicules thick, of irregularly-rounded or triangular mesh, .16 mm. in diameter, each mesh being subdivided by a unispicular reticulation; spicules oxea, straight or slightly curved, .14 by .006 mm.

REMARKS.—The species is characterized by the external form and by the structure of the dermal skeleton.

TEXT-FIG. 1.



Dasychalina mammillata sp. n. a. Dermal skeleton. $\times 60$.
 b. Main skeleton in section at right angles to surface. $\times 45$.
 c. Oxeote. $\times 300$.

The holotype resembles in appearance *Petrosia similis* var. *compacta* Ridley & Dendy,¹ but is more massive and has oscules more numerous and more markedly mammillate.

Clathria oculata sp. n.

Collected at Umkomaas, Natal; W. Cullingworth, June, 1931.
 HOLOTYPE.—In Natal Museum; Mus. No. 1408.

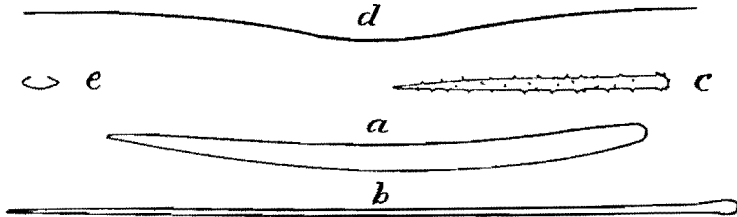
DIAGNOSIS.—Sponge erect, dichotomously branched, with branches showing a strong tendency to anastomose; surface

¹ Ridley, S. O., and Dendy, A., "Monaxonida," 'Rep. Scient. Res. "Challenger," Zool.,' xx, 1887. See plate iii, fig. 5.

even; oscules 1-2 mm. diameter, arranged for most part in linear series along margins of branches; colour, in dried state, drab with tinges of purple occasionally; skeleton a sub-isodictyal network of spongin fibres cored by principal styli and echinated by acanthostyli; auxiliary subtylostyli scattered in meshes of main skeleton; microscleres minute palmate isochelæ and long, hair-like toxa.

REMARKS.—The species shows a resemblance in external form to *Chalina oculata* Pallas, and this is its most characteristic feature. The skeleton is not unlike that of several species of

TEXT-FIG. 2.



Clathria oculata sp. n. a. Principal styli. $\times 600$. b. Subtylostyli. $\times 600$. c. Acanthostyli. $\times 600$. d. Toxa. $\times 600$. e. Chela. $\times 1000$.

Clathria from the Indo-Australian area, the only differences being found in small details of shape and dimensions.

The dimensions of the spicules are: Principal styli, fusiform, tapering to a point at one end and slightly subtylostylote at the other, $\cdot 14$ by $\cdot 007$ mm.; auxiliary subtylostyli, $\cdot 16$ by $\cdot 003$ mm.; acanthostyli, with ill-defined spines, $\cdot 065$ by $\cdot 004$ mm.; chelæ, $\cdot 006$ mm. chord; toxa, entirely smooth, $\cdot 16$ mm. long.

The holotype has the appearance of *R. paucispinus* Hallmann,¹ and Hallmann's photograph might easily pass for one of the present species.

¹ Hallmann, E. F., "Report on the Sponges obtained by the F.I.S. 'Endeavour' on the Coasts of New South Wales, etc.," 'Zool. Res. Fish. Exper. "Endeavour,"' ii, pp. 117-300, 1912. See plate xxv, fig. 1.

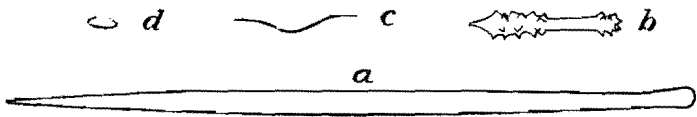
Rhaphidophlus anomalus sp. n.

Collected at Umkomaas, Natal; W. Cullingworth, June, 1931.

HOLOTYPE.—In Natal Museum; Mus. No. 1410.

DIAGNOSIS.—Sponge erect, flabellate, with small digitate processes given off at various points; surface smooth, uneven; oscules not apparent; colour, in dried state, generally white; skeleton a coarse, irregular reticulation of spongin fibres cored by subtylostyli and echinated by acanthostyli; subtylostyli, of similar size to coring spicules, scattered in meshes of skeleton;

TEXT-FIG. 3.



Rhaphidophlus anomalus sp. n.: a. Subtylostyli. $\times 300$.
b. Acanthostyli. $\times 300$. c. Toxa. $\times 300$. d. Chela. $\times 500$.

dermal skeleton of subtylostyli of same size as those of main skeleton; microsclere isochelæ palmatæ and short toxa.

REMARKS.—The species is remarkable for the absence of marked differentiation in the main megascleres. In the typical *Rhaphidophlus* species the main megascleres are stout styli coring the fibres, auxiliary subtylostyli scattered in the meshes of the main skeleton, and shorter, but similar, subtylostyli forming a dermal layer. In this species the coring, auxiliary and dermal spicules are of the same shape and dimensions. Certain stouter subtylostyli or styli are occasionally found associated with the fibres, but not coring them, or scattered in the meshes of the main skeleton, and these may represent the vestigial and displaced remains of the normal coring system. On the other hand, they may be only subtylostyli of abnormally large size, especially as intermediates between them and the normal subtylostyli are often found.

Apart from the spiculation, the species is distinguished from *R. frondiferus* (*Bowerbank*), *R. procerus* *Ridley* and *R. corallitincta* (*Dendy*), which it resembles, by the external form.

The dimensions of the spicules are: Subtylostyli, $\cdot 3$ by $\cdot 004$ mm. (occasionally $\cdot 3$ by $\cdot 007$ mm.); acanthostyli, $\cdot 065$ by $\cdot 008$ mm.; chelæ, $\cdot 014$ mm. chord; and toxa $\cdot 05$ mm. long.

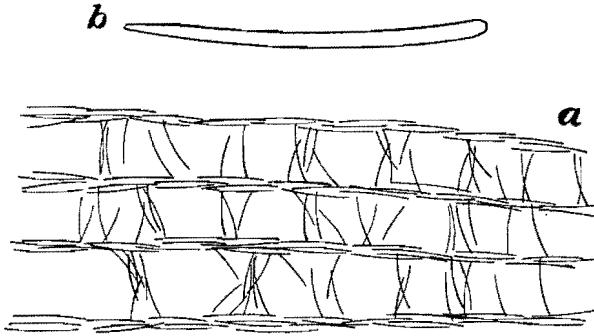
The holotype has the external form of *R. typicus* var. *anchoratus* *Carter* (see *Hallmann*, 1912, pl. xxix, fig. 1), but the appearance of *R. typicus* var. *obesus* *Hallmann* (*l.c.*, pl. xxviii, fig. 1), except that the white dermal crust, of which only remnants are seen in var. *obesus*, covers most of the surface.

Axinella sanguinea *sp. n.*

Collected at Umkomaas, Natal; W. Cullingworth, June, 1931.

HOLOTYPE.—In Natal Museum; Mus. No. 1409.

TEXT-FIG. 4.



Axinella sanguinea *sp. n.* a. Main skeleton in section at right angles to surface. $\times 35$. b. Styli. $\times 400$.

DIAGNOSIS.—Sponge small, irregularly massive; surface minutely hispid and faintly reticulate; oscules numerous, circular to elliptical, 1 to 2 mm. diameter; texture firm but compressible; colour, in dried state, blood-red; skeleton of radial fibres of plumose bundles of styli, cemented with abundant

spongin, and connected at intervals by single transverse spicules; no special dermal skeleton, but distal ends of radial fibres slightly paniculate at surface; spicules styli, $\cdot 14$ by $\cdot 007$ mm., and occasional oxea, $\cdot 211$ by $\cdot 011$ mm.

REMARKS.—The external form in this species recalls that of *Amphilectus fucorum* (*Esper*), while the colour is also very similar. The latter is blood-red in the dried state, but the colour is readily extracted by alcohol. The structure of the skeleton is, however, typical for the genus *Axinella*, the species being characterized almost entirely by its shape and colour.