

XXVII.— *On a New Genus of Foraminifera (Aphrosina informis), and Spiculation of an unknown Sponge.*

By H. J. CARTER, F.R.S., &c.

(Read 11th June, 1879.)

PLATE XVIIa, FIGS. 5-12.

ON the same specimen of the coral of *Amphihelia oculata* wherein Dr. Millar found *Alectona Millari*,* I also found a species of Foraminifera which I think must be considered the type of a new genus. It had grown round a hole about three-quarters of an inch in diameter formed by the sudden reunion of a branch which had undergone division (Plate XVIIa, Fig. 5, *d*); and resembling a bit of froth which consists of vesicles of different sizes, irregularly spread abroad and heaped upon each other, I have designated it thereafter, thus giving it the following name and description, viz.:

Aphrosina† *informis*, nov. gen. et sp.

Amorphous, flat, spreading; slightly convex and uneven superiorly or on the free surface; smooth and uniform below or on the fixed surface, where it is attached to the object on which it has grown; margin thin and irregular. Composed of a great number of vertically compressed chambers of different shapes and sizes formed successively one after another, and sometimes one upon another with the greatest irregularity, presenting on the surface a number of convexities corresponding with the shapes and sizes of the chambers below respectively (Fig. 6). Surface presenting a

EXPLANATION OF PLATE XVIIa. FIGS. 5-12.

FIG. 5.—*Aphrosina informis*, n. gen. et sp. *a*, portion of the coral of *Amphihelia oculata*; *b*, hole formed by the reunion of the branch *c*; *d*, *Aphrosina informis* in situ. Natural size.

FIG. 6.—The same. Diagram. Fragment of the surface to show its convexities opposite the subjacent chambers. *a*, puncta representing hemispherical tubercles; *b*, apertures on the margin.

FIG. 7.—The same. Diagram. Vertical section to show—*a*, cavity of chamber; *b*, intercameral aperture; *c*, arch or upper wall; *d*, floor or lower wall; *e e e*, manner in which the chambers are successively added.

FIG. 8.—The same. Diagram. Fragment to show the apertures.

FIG. 9.—The same. Diagram to scale of $\frac{1}{24}$ to $\frac{1}{1800}$ inch showing linearly—*a a a*, the polygonal division and its pore tessellating the surface; and *b b b*, the hemispherical tubercles; all relatively magnified both as to size and position.

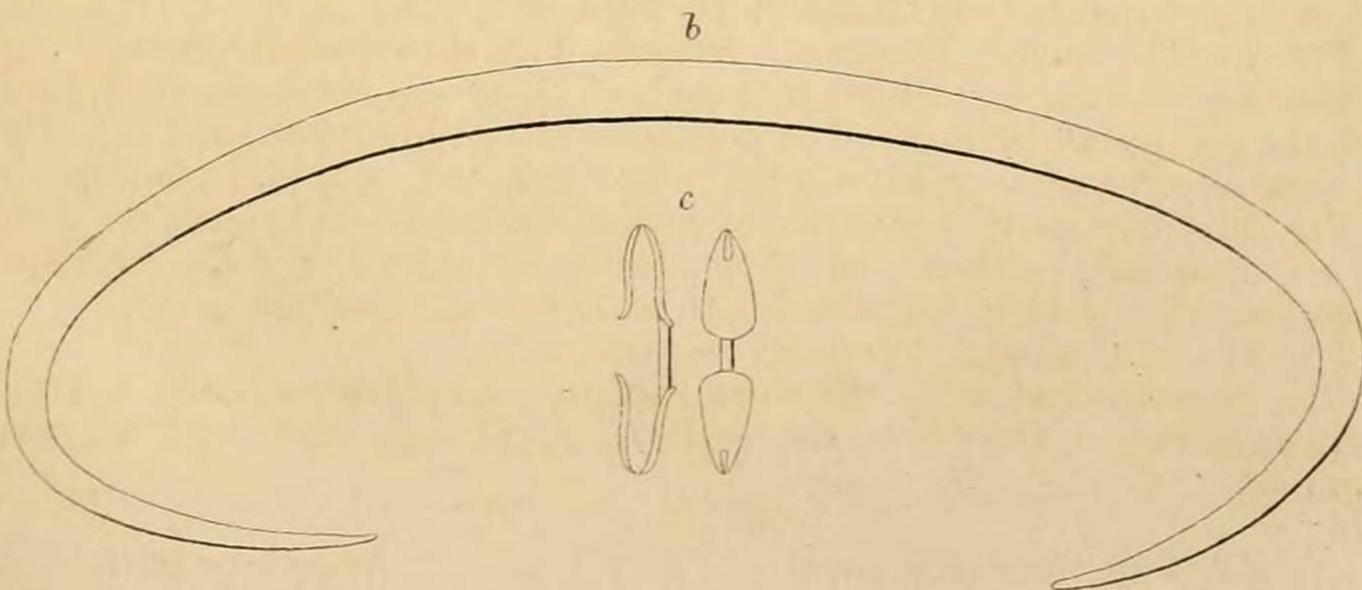
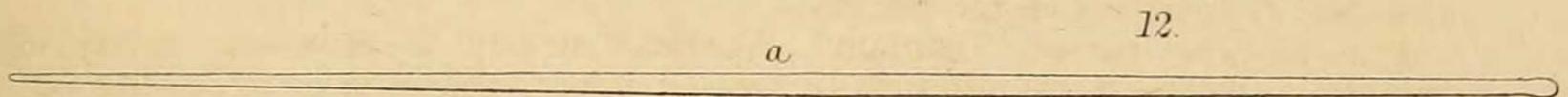
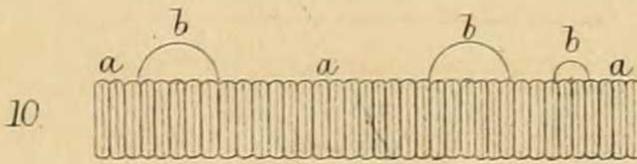
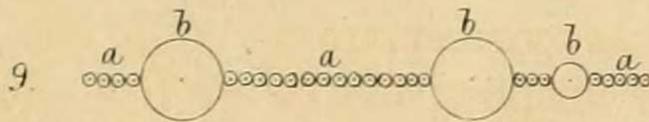
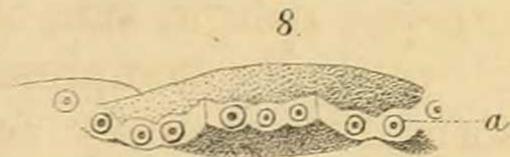
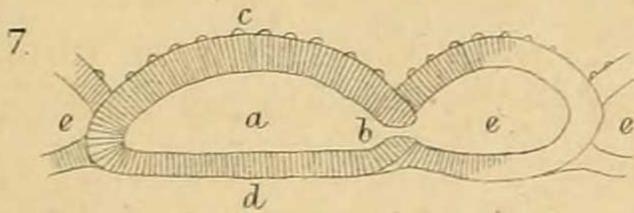
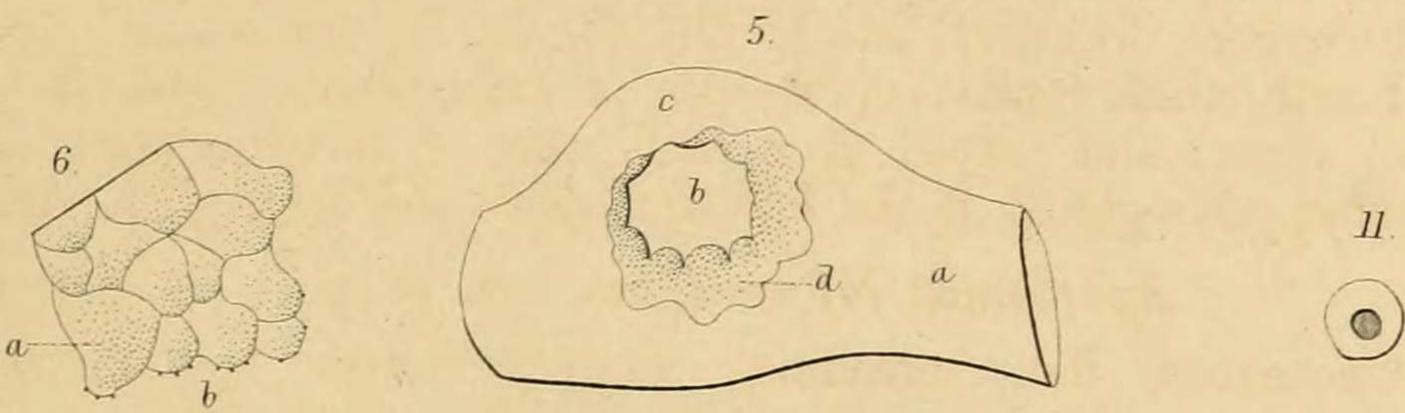
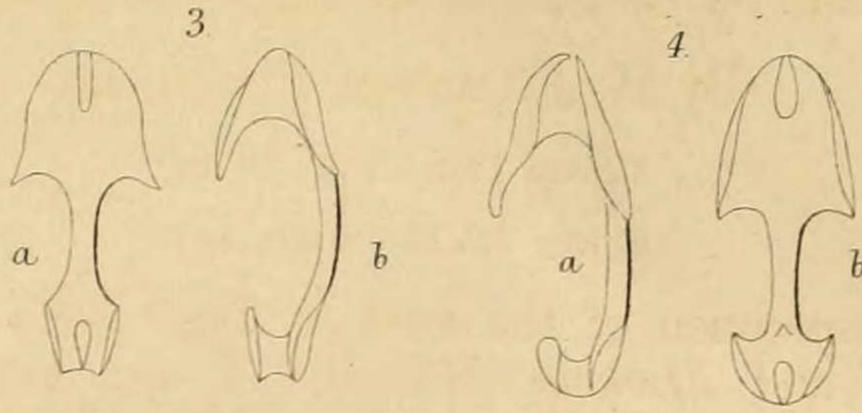
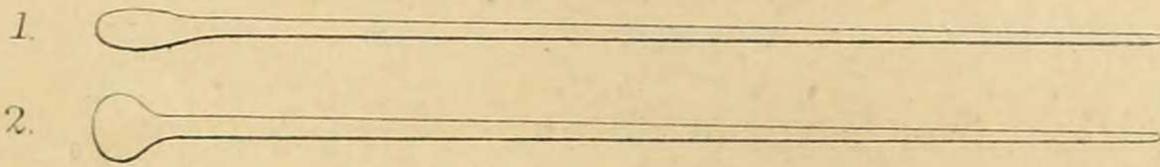
FIG. 10.—The same. Diagram of vertical section drawn to same scale, showing—*a a a*, prismatic pillars and their tubes respectively; *b b b*, hemispherical tubercles; all relatively magnified both as to size and position.

FIG. 11.—The same. Aperture, on same scale.

FIG. 12.—Spiculation of unknown sponge. *a*, skeleton-spicule; *b*, bihamate; *c*, equianchorate. Drawn to the scale of $\frac{1}{24}$ to $\frac{1}{6000}$ inch, and all relatively magnified.

* Vide preceding paper.

† *Aφρος*, sea-froth.



H. I. C. del.

Mintern Bros. lith.

1-4. *Rhaphidotheca affinis* n. sp.
 5-12. *Aphrosina informis* nov. gen. et sp.

minute tessellation of polygonal areae in the centre of each of which is a punctum or pore, and irregularly scattered over this again, a great number of hemispherical tubercles (Fig. 9, *a, b*); polygonal areae about $\frac{1}{1000}$ inch in diameter; pore about $\frac{1}{6000}$ inch; hemispherical tubercle, which is hollow, from $\frac{1}{900}$ inch to $\frac{1}{360}$ inch in diameter, and from $\frac{1}{900}$ inch to $\frac{1}{180}$ inch apart (Figs. 9 and 10, *a, b*). *Internal structure*: largest chamber about $\frac{1}{20}$ inch in horizontal diameter and $\frac{1}{30}$ inch high (inside measurement); more or less filled, with (now) dry apparently homogeneous sarcode, that is, without fragments of sponge-spicules or any other foreign material; arched over superiorly and more or less straight inferiorly, that is, following the surface of the object on which it may be growing (Fig. 7, *a*); upper wall about $\frac{1}{360}$ inch thick, constructed of vertical prismatic pillars in juxtaposition traversed by a central tube whose external end, together with that of the prismatic pillar, forms the minute tessellated surface above mentioned, and its inner end that of the roof of the chamber, through which, communication between the external and internal parts of the test is effected; pillars arranged perpendicularly to the curve of the wall and together with their tubes of the same diameters as the polygonal areae and pores of the surface respectively (Figs. 7, *a*, and 10, *a*). Chambers communicating with each other by means of one or more apertures (Fig. 7, *b*). Lower wall or floor (Fig. 7, *d*) less thick than the roof, but still traversed more or less by the vertical tubulation, and presenting a larger hole here and there which must have allowed the sarcode of the chamber to come into direct contact with the coral. Aperture in plurality on the margin opposite the chambers respectively supported on a papillary projection about $\frac{1}{360}$ inch in diameter; the hole itself about $\frac{1}{900}$ inch (Figs. 8 and 11). Size of specimen about one inch in diameter, that is, three times that of the circular space in the coral which it surrounds; maximum thickness about $\frac{1}{30}$ inch.

Hab. Marine, on the coral of *Amphihelia oculata*.

Loc. North Atlantic Ocean, between N. of Scotland and Faroe Islands ('Porcupine,' 1869, Sta. 54); lat. N. $59^{\circ} 56'$; long. W. $6^{\circ} 27'$; depth, 363 fathoms; bottom temp. $31^{\circ} 4'$.

Obs. Of this species I have already stated that it appears to be new, and although it is to a certain extent like *Carpenteria*, it nevertheless differs in the flat, vesicular character of its chambers extended more or less horizontally over the same plane; in the absence of elongated branched apertures; and that of foreign material (fragments of sponge-spicules, &c.) in its sarcode, with which the chambers of *Carpenteria* are invariably filled. The presence of hemispherical tubercles scattered over the poriferous surface is a common occurrence or feature on the tests of many Foraminifera; while the prismatic structure of the wall in which

each prism is traversed by a tube, represents the so-called "pore tubulation."

The vesication of *Aphrosina informis* forcibly recalls to mind that of *Æthaliium septicum*, whose active state is so like *Amœba*; and whose form and appearance sometimes, are almost identical with *Lieberkühnia Wagneri*.*

Spiculation of an unknown Sponge.

On the surface of the foregoing species of *Aphrosina informis* are plentifully strewn the spicular remains of an unknown sponge remarkable for the size of the larger bihamates, which almost equal in length the skeleton-spicule, and on this account it seems desirable to record the fact, together with an illustration of each spicule drawn to the same scale, viz. $\frac{1}{24}$ inch to $\frac{1}{6000}$ inch, in order that their relative sizes may be at once realized.

Skeleton-spicule acuate, slightly fusiform, and sometimes spinulate (Plate XVIIa, Fig. 12, a); large flesh-spicule bihamate, simple, smooth, showing plainly the central canal (Fig. 12, b); small flesh-spicule equianchorate, navicular, alæ or flukes inflected (Fig. 12, c).

Skeleton-spicules in successive bundles, indicating a fibrous arrangement, among which the bihamates of various sizes are plentifully scattered, together with a few equianchorates. The spiculation somewhat resembles that of *Esperia villosa*.†

* Clap. et Lach., 'Études Infusor.', vol. i. pl. 23.

† 'Annals,' 1874, vol. xiv. pl. xiii. fig. 13, &c. ('Porcupine' dredgings).

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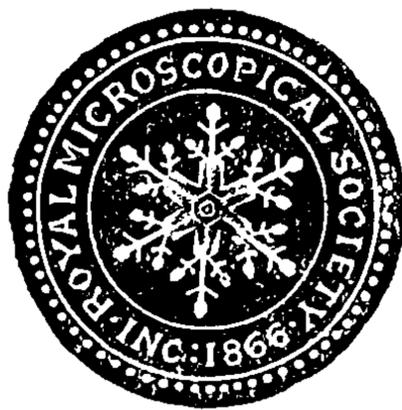
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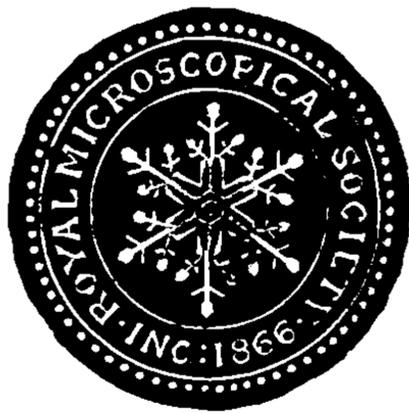
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