

ART. IX.—*Descriptions of New, or Little Known,
Polyzoa.*

PART VII.

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[Read 10th July, 1884.]

Family, CELLULARIIDÆ.

Maplestonia, n. gen. Plate I., fig. 9.

POLYZOARY consisting of series of single and geminate cells, connected by distinct, corneous tubes. Cells with the front wholly occupied by a membranous area, or with the lower part filled in; imperforate behind. No avicularia or vibracula.

M. cirrata.

Portland, Mr. Maplestone; Warrnambool, Mr. Watts.

M. cirrata seems to be very rare, and I have only had an opportunity of examining three or four specimens. It occurs in minute purplish tufts, the branches curling inwards. They are arranged in series of single and geminate cells. In the single cells the front is usually entirely membranous, the margins being thick and bevelled inwards; in the geminate cells the lower part is usually filled in by the cell wall. The posterior surface is imperforate, and generally marked by transverse, faint lines. The mode of branching is very irregular. In all cases of geminate cells, each gives origin to the first of a series, but in some cases two branches spring from the summit of a single cell, or they may originate from the sides of a cell. There is no appearance of avicularia or vibracula.

Family, SALICORNARIIDÆ.

Cellaria rigida, n. sp. Plate I., figs. 1, 2.

Polyzoary regularly dichotomously branched; branches cylindrical, slightly arcuate, usually enlarging upwards. Cells mostly rhomboidal, pointed above and below; mouth in the upper half, lofty, slightly contracted towards the

straight lower lip; operculum with, on each side, a cervicorn mark, and posteriorly a projecting, somewhat wedge-shaped process for the attachment of the oclucosor muscles. Avicularium very large, replacing a cell; mandible of great size, nearly semicircular. Ovarian cells rounded above, narrowed below; the pore semilunar, at the extreme upper end of the cell, with the lower edge usually projecting and smooth or obscurely crenulate.

Port Phillip Heads, mostly on Dictyopora.

This fine species forms tufts 1 to 3 inches high. The articulations are frequently rigid from calcification. The internodes are thick, and usually slightly curved. The cells are nearly regularly rhomboidal; the ovarian cells broad, and rounded above, and narrowed below. The mouth is situated in the upper half, the lower lip corresponding to about the middle of the cell; deep in the interior are two sharp, stout, calcareous denticles from each of the upper and lower margins, directed vertically upwards and downwards. The operculum is very peculiar. It has a large cervicorn mark on each side, and the oclucosor muscles are attached to projecting, wedge-shaped processes. The avicularium is of great size, replacing a cell; the upper margin projects much forwards, and the mandible is very large, nearly semicircular, and directed upwards. The ovarian pores are mostly semilunar, situated close to the upper margin of the cell, and about the same width as the mouth; the lower edge projects upwards as a sort of lip, which is either smooth or very faintly crenulate.

Cellaria Australis.

When I first described this form in Decade V. of *M'Coy's Prodromus*, I had not had an opportunity of examining specimens of the European *C. fistulosa*, and somewhat doubtfully considered it as a variety of that species. After examination of specimens kindly sent by Mr. Waters and Mr. Hincks, I am now quite satisfied that the present is a totally distinct species, and Mr. Hincks is inclined to the same opinion (*Ann. and Mag. Nat. Hist.*, May, 1884). The mode of growth is quite different. All the other *Cellariae* with which I am acquainted are regularly, dichotomously branched, while in *C. Australis* the branches arise by corneous tubes from the surface of cells (or spaces representing cells), from the sides of the parent branches, and not from the extremities. Frequently three or four spring

from different parts of one cylinder. They are all directed upwards, and are frequently nearly parallel to that from which they have risen. The cylinders are very much thicker, and the situation and form of the mouths of the cells are different. Moreover, the opercula and avicularia differ considerably, as will be seen by a reference to the figures. The lower part of the operculum is clouded with a close mottling, which is wanting in that of *C. fistulosa*, which is also smaller; and the avicularium is much wider, shallower, and sharper at the extremities.

As the opercula of the different species of *Cellaria* afford a valuable and easily applicable mode of discrimination, which has not hitherto been made use of, I have figured those of all with which I am acquainted, including the European *C. fistulosa* and *sinuosa*. In every case it is characteristic; and where there is the closest resemblance (*C. fistulosa* and *hirsuta* and *C. gracilis* and *tenuirostris*) the avicularia are totally distinct.

Family, TUBULIPORIDÆ.

Tubulipora concinna, n. sp. Plate I., fig. 10.

Zoarium nearly discoid, with a thin, smooth, or concentrically wrinkled lamina. Cells arranged in radiating, linear series, partially immersed in greater part of their extent, distinct and separated from each other, slightly contracted towards the orifice, which is produced into a long peristome; surface of cells with numerous white, prominent puncta, and frequently slightly rugose; intervening surface punctate in the same manner, or with white-bordered pores. Ovicells long, narrow inflations transverse to the rows of cells.

Port Phillip Heads, on shell and algæ; found also by Mr. J. B. Wilson.

This is a well-marked species, and shows the transition to *Diastopora*. The zoarium is discoid, but with the origin of the rows of cells in some specimens eccentric. One specimen shows a flabelliform arrangement, so that no doubt this is the primary form. The cells are arranged in more or less radiating series, separated from each other by the general surface of the zoarium. They are in great part sub-immersed, but mostly free and turned forwards at the extremities, especially in the cells remote from the margin.

They are thickly punctate, and occasionally transversely rugose. The surface of the zoarium between the cells is glistening with numerous elevated white puncta or (from the perforation of these) white-bordered pores, frequently arranged in transverse curved rows, between which there are often also slight corrugations. The opening of the peristome is circular in the central cells and triangular in the marginal, the orifices of the cells being of the same shape. It differs from the other Victorian species, and is at the same time allied to *Diastopora* in the greater immersion of the cells, and in their separation by portions of the general surface of the zoarium.

Tubulipora pulchra, n. sp. Plate II., fig. 1.

Zoarium at first flabelliform, but becoming, by growth, of various forms. Cells in greater part decumbent and united to each other laterally, extremities free and more or less erect, narrowed towards the mouth, which is produced into a long, cylindrical peristome; surface thickly punctate, except the peristome, which is smooth, glossy, and usually annularly lined. Ovicells forming large inflations, elongated transversely to the direction of the cells. Colour, white.

Frequent on shells and algæ.

This species is closely related to the European *T. flabellaris*, of which it may prove to be a variety. It originates in the same manner by a single or multiple flabelliform growth, which ultimately assumes various forms, usually lobed at the margins. The cells are distinct throughout their whole length, for the greater part decumbent, and adhering to each other, but free and bent forwards towards the mouth. They are arranged in irregular, radiating or divergent lines, and are slightly contracted towards the mouth, which is nearly circular and produced into a long, nearly erect peristome. Their surface is glassy, thickly covered with round, raised white puncta, which, from the opening of the summits, usually appear as white-bordered pores. The surface of the cells is sometimes annularly rugose, and the mouth is occasionally closed by a punctate membrane. The ovicells are large, stretching across the lobules at the base or middle.

Tubulipora connata, n. sp. Plate II., fig. 2.

Zoarium originally flabelliform, becoming usually more or

less lobed or discoid. Cells slender, arranged in radiating lines, adherent in greater part, but with the orifices upturned and produced into long peristomes which, as well as the cells, are mostly connate in each series. Surface of cells punctate as in the last species. Ovicells considerable inflations, parallel to the axis of the cells. Colour, bluish-purple.

Port Phillip Heads.

This species is at once distinguished by the peculiar arrangement of the cells and their peristomes. These are arranged in more or less perfect rows, radiating obliquely in the direction of the original lobules, those of each row being united in broken series quite to the orifices of the peristomes, so as to form wall-like rows. The number of cells united in each group varies from two to six or seven. The cells are, however, not all connate, many remaining single, and not being arranged in definite order, but the general arrangement is usually very marked and characteristic.

Tubulipora clavata, n. sp. Plate II., fig. 3.

Zoarium divided into clavate branches. Cells adherent or immersed, except at the extremities, which are free and turned forwards, arranged in oblique lines from the middle of the branch to the edges; surface punctate; mouth circular.

Port Phillip Heads. Dredged by Mr. Wilson and myself.

I have only seen one perfect specimen, for which I am indebted to Mr. Wilson. It consists of seven branches, united at their bases. The cells are closely packed, distinct but adherent, except at the extremities, which are free and turned forwards; they are punctate, with a circular mouth frequently produced into a short tubular peristome. They are arranged in nearly regular oblique lines from the middle of the branch to the edge, and each row has three to five at the narrow parts and six or seven at the expanded clavate portion; in many of the rows the cells are entirely connate. The front of each branch is considerably elevated.

Diastopora lineata, n. sp. Plate III., fig. 1.

Zoarium thick, adnate. Cells arranged in raised radiating rows, in single series at first, but at the extremities increasing to two or three. Intermediate surface and sides of rows finely punctate and transversely ridged.

Port Phillip Heads.

In this species the zoarium is thick, and surrounded by a lamina. The cells are arranged in radiating, prominent rows, from which they very slightly project. The central parts of the rows consist usually of only a single series, increasing towards the margin of the zoarium to two or three. In some specimens there are two series almost from the commencement. These series are in all cases continuous, and the ridges formed by them are considerably raised, sometimes much more so than in the specimen figured. The mouth is elliptical, and usually, except at the termination of the rows, closed by a punctate membrane. I have not seen any of the peculiar calyptriform covers on any of the cells, such as are found in *D. sarniensis*. The whole surface is thickly punctate, and the deep spaces between the ridges transversely rugose. It is readily distinguished by the great projection of the regular, radiating rows of cells.

Diastopora fasciculata, n. sp. Plate III, fig. 2.

Zoarium adnate, with a distinct lamina, partly free at the edges. Cells arranged in distinct, elevated, radiating ridges, very much enlarged and prominent at the extremities; the narrow parts very prominent, transversely wrinkled, and showing the mouths of a few closed cells, the extremities forming bundles of closely packed cells, mostly opening terminally. The surface between the ridges punctate and transversely rugose.

Port Phillip Heads, Mr. J. B. Wilson.

The only specimen I have seen is the one figured. The basis is a calcareous lamina, much twisted, probably from the nature of the object, seemingly a friable nodule, to which it was attached. The whole is irregularly divided into two lobes. The cells are arranged in distinct, radiating bundles, very prominent and narrow at their first portions, but becoming broader and partially free at their extremities. The narrow convex parts are transversely rugose, and the closed orifices of a few cells can be obscurely distinguished. The outer parts present the orifices of numerous, close-packed cells, opening in clusters or in a vertical single or double series.

Although entirely Diastoporidan, *D. fasciculata* shows a decided approach to the structure of *Fasciculipora* in the distinct bundles of cells opening at the extremities.

Family, DISCOPORELLIDÆ.

Favosipora, n. genus. Plate II., fig. 4.

Zoarium adherent, raised at intervals in irregular, elevated, rounded ridges, with a distinct lamina. Cells large, of unequal size, closely packed, prismatic.

F. rugosa, n. sp.

Forms small, crustaceous expansions, growing on a lamina like *Discoporella*. The zoarium is composed of large, closely set, prismatic cells. Their openings vary in shape, and also a good deal in size, but there is no structural difference between the largest and smallest. There are usually some irregular, elevated ridges, sometimes obscurely parallel, on different parts of the zoarium. In some cases the cells open all over these elevations, but frequently, especially in the higher, the sides are smooth, the cells opening only on the summit. Some of the cells are closed by a punctate or perforated calcareous membrane, confined to a single cell, or spreading over a number, as in the specimen figured. I cannot detect any spines in the interior of the cells.

This genus is evidently allied to *Densipora corrugata*, and there can be no doubt that they belong to the same family as *Discoporella*. On a fragment of stone I have two small, nearly discoid, specimens, which are forcibly suggestive of some forms of *D. radiata*.

NOTE ON DIPLOPORA.

When I proposed the genus *Diploporella* for Mr. Hutton's *Membranipora cincta*, I was not aware that the name had already been used, and I would therefore now alter it to *Diploporella*.

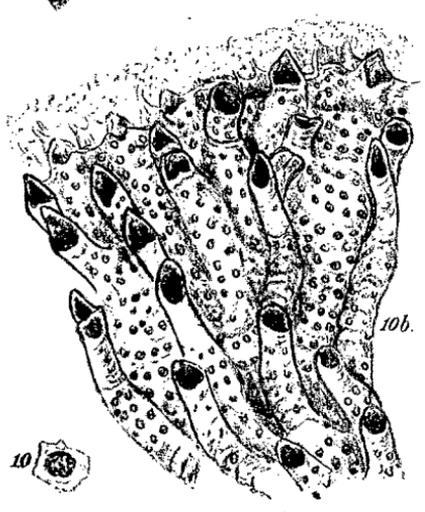
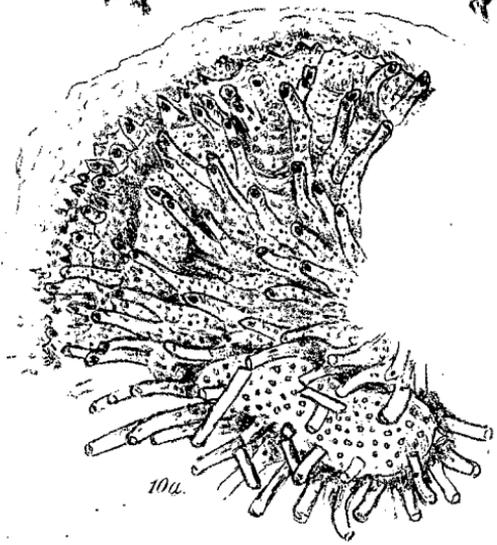
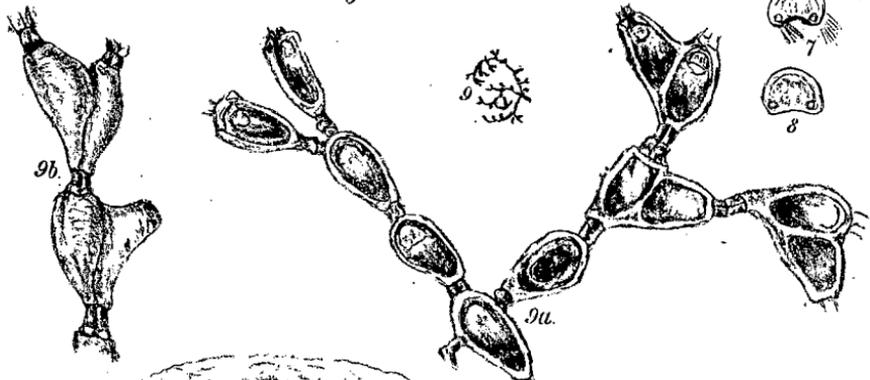
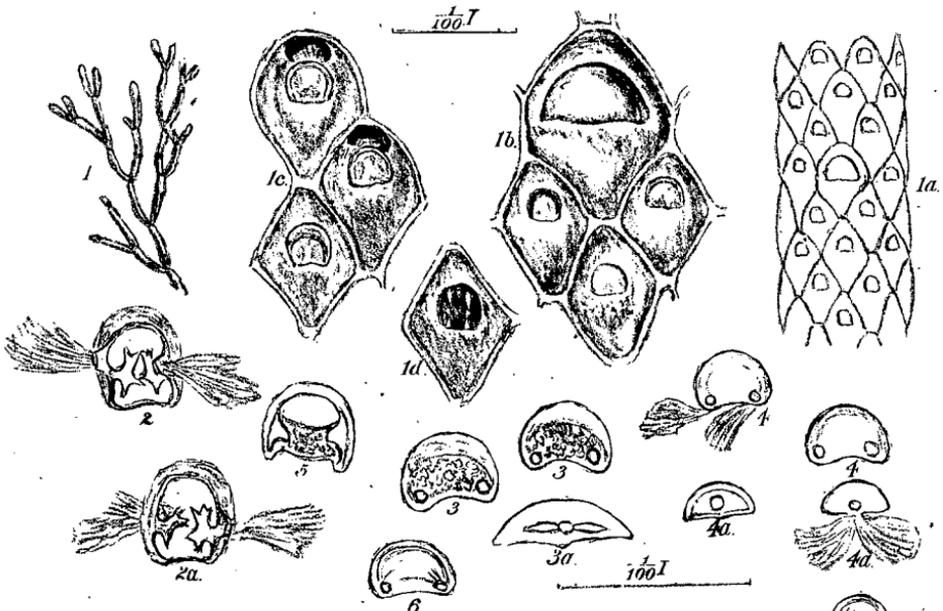
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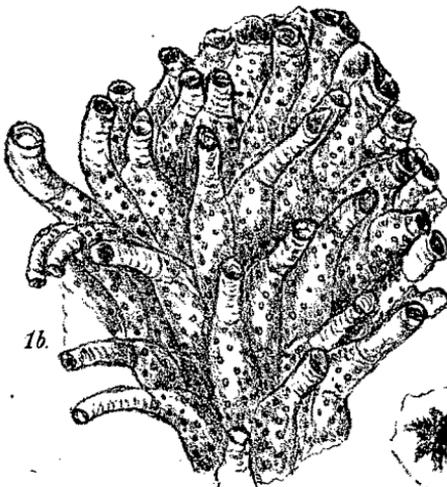
PLATE I.

Fig. 1. *Cellaria rigida*, natural size. Fig. 1a. Portion of a branch, magnified. Fig. 1b. Group of cells and an avicularium, replacing a cell. Fig. 1c. Three cells, showing ovarian pores in two. Fig. 1d. Single cell, showing the intra-oral denticles.

Plate I.

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1b.

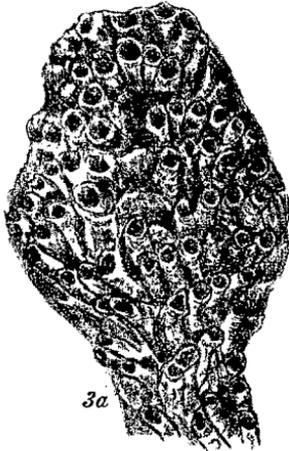
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1a.



1



3a



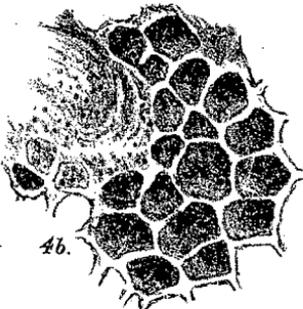
2a.



3

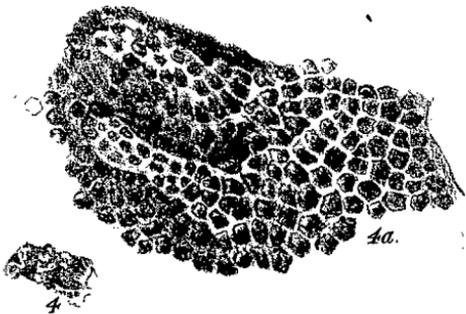


2



4b.

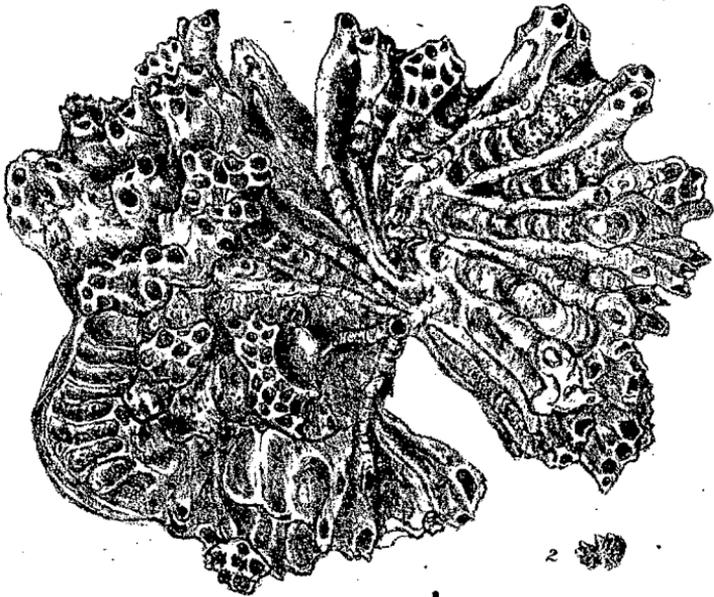
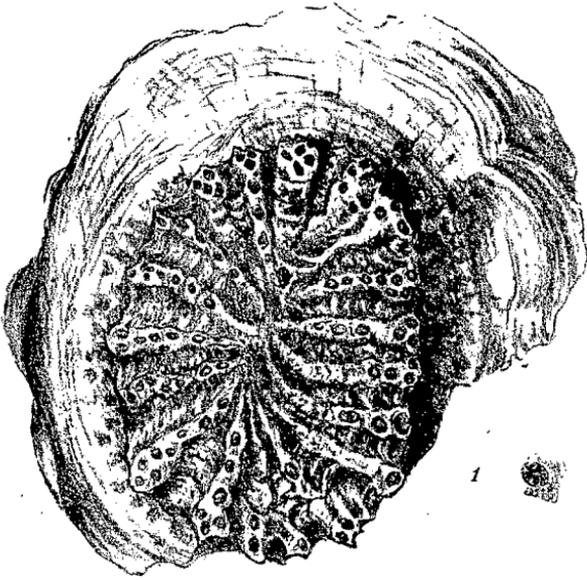
$\frac{1}{100} I$



4a.



$\frac{1}{100} I$



- Fig. 2. Operculum of *C. rigida*, posterior view, to show the attachment of the occlusor muscles. Fig. 2a. Anterior view of the same.
- Fig. 3. Opercula of *C. Australis*. Fig. 3a. Avicularian mandible of the same.
- Fig. 4. Opercula of *C. fistulosa*, from a Mediterranean specimen. Fig. 4a. Avicularian mandibles of the same.
- Fig. 5. Operculum of *C. sinuosa*, from a Mediterranean specimen, showing processes for the attachment of the muscles.
- Fig. 6. Operculum of *C. hirsuta*.
- Fig. 7. Operculum of *C. tenuirostris*. It will be seen that the lower edge is more deeply hollowed than in the next.
- Fig. 8. Operculum of *C. gracilis*.
- Fig. 9. *Maplestonia cirrata*, natural size. Fig. 9a. Portion magnified, anterior view. Fig. 9b. Posterior view.
- Fig. 10. *Tubulipora concinna*, natural size. Fig. 10a. Portion magnified, showing two ovicells. Fig. 10b. Portion more highly magnified.

PLATE II.

- Fig. 1. *Tubulipora pulchra*, natural size. Fig. 1a. Lobule magnified, showing an ovicell. Fig. 1b. Portion more highly magnified. The wrong scale has been accidentally placed to this figure; it should be the same as that in Plate I., fig. 10b.
- Fig. 2. *Tubulipora connata*, natural size. Fig. 2b. Portion magnified.
- Fig. 3. *Tubulipora clavata*, natural size. Fig. 3a. One of the branches magnified.
- Fig. 4. *Favosipora rugosa*, natural size. Fig. 4a. Portion magnified. Fig. 4b. Small portion more highly magnified, showing the openings of the cells and the punctate calcareous membrane. The wrong scale has also been put to this figure; it should be the same as in Plate I., fig. 10b.

PLATE III.

- Fig. 1. *Diastopora lineata*, natural size and magnified.
- Fig. 2. *D. fasciculata*, natural size and magnified. On the left of the magnified figure a portion of the lamina is shown.