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THE RESULTS OF DEEP-SEA INVESTIGATIONS IN THE TASMAN SEA.

I.—THE EXPEDITION OF H.M.C.S. "MINER."[1]

5.—THE POLYZOA.

By C. M. MAPLESTONE, Eltham, Vict.

(Plates lxxv.-lxxviii.)

I.—INTRODUCTION.

Some time ago I received for examination from Professor W. A. Haswell a very interesting collection of Polyzoa which had been dredged in about eighty fathoms at about twenty-two miles east of Port Jackson, by H.M.C.S. "Miner." Most of the specimens were "dead" and somewhat worn, showing, I consider, that the place from which they were obtained was a resting-place for an accumulation of material carried from a considerable distance by ocean currents. Very few, if any, seem to have been living on the spot.

The collection consisted of some roughly-sorted specimens and a small portion of unsorted material. I was doubtful when I received them whether I could undertake the examination. I am sorry to say that I cannot at present complete the task, but I have been able to deal with the most striking forms.

The *Biporæ* are by far the most interesting of them, of which there are six new species. A detailed description is given of these, and some other new species and one new genus, below.

The known species which I have been able to identify are as follow:—

Caberea grandis, Hincks.
Membranipora gemmata, Waters.
,, *profunda*, McGil.
,, *bellula*, Hincks.
Cellaria australis, McGil.
Lunutites canaliculata, McGil.

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[1] Continued from Vol. VI., p. 311.

Selenaria punctata, Ten. Woods.
„ *maculata*, Busk.
„ *concinna*, Ten. Woods
Caleschara denticulata, McGil.
Micropora coriacea, Esper, sp.
Cribrilina radiata, Moll., sp.
Microporella ciliata, Linn., sp.
Adeona mucronata, McGil.
„ *parvipuncta*, McGil.
Schizoporella flabellata, Maplestone.
„ *cecilii*, Audouin, sp.
Bipora angulopora, Ten. Woods.
Smittia reticulata, McGil.
Mucronella praestans, Hincks.
Rhyncopora longirostris, McGil.
Porina gracilis, Milne Ed., sp.
Cellepora fossa, Haswell, sp.
Lagenipora nitens, McGil.
Lekythopora hystrix, McGil.
Idmonea contorta, Busk.
Hornera foliacea, McGil.
Lichenopora holdsworthii, Busk, sp.

II.—Descriptions of New Species.

Bipora biarmata, *sp. nov.*

(Plate lxxv., figs. 1a, 1b.)

Zoarium conical, 2 mm. high, 1·5 mm. broad at the base; apex rounded. Zooecia immersed, in directly vertical series. Thyrostome elliptical, 0·1 to 0·15 mm. high; 0·07 to 0·1 mm. broad, elevated above the surface with a deep sinus in the lower lip. Peristome slightly raised. An avicularium on each side of the lower part of the thyrostome, bearing an acute mandible pointing horizontally outwards and having a cross-bar, with a central ligula, near the base. Base of zoarium flat, with uneven surface but with no indication of the position of the zooecia; avicularia similar to those on the front of the zooecia scattered about.

Bipora multiarmata, *sp.nov.*

(Plate lxxv., figs. 2a, 2b.)

Zoarium conical, 2·2 mm. high, 1·7 mm. broad at the base. Zooecia immersed, in vertical, but slightly slanting series. Thyrostome 0·1 to 0·15 mm. high; 0·07 to 0·1 broad, raised,

irregularly elliptical, with a sinus in the lower lip; peristome thickened unequally, causing the aperture to be irregular in shape. Four to six very small oval avicularia arranged round the thyrostome and occasionally one on the thickened peristome. Base of zoarium nearly flat, with scattered avicularia, some similar to those on the front of the zooecia, others with an acute mandible similar to those on *B. biarmata*. No indication of the position of the zooecia.

Bipora magniarmata, *sp.nov.*

(Plate lxxv., figs. 3a, 3b.)

Zoarium conical, 4 mm. high; 3 mm. broad at base. Zooecia immersed, in slightly slanting vertical series. Thyrostome elliptical; peristomes oval, very much thickened and raised; a ligulate operculum with a longitudinal fold; no indication of a sinus on the lower lip, probably hidden by the operculum. One large acute avicularium (sometimes two) opposite the thyrostomes in the hollow between the series of zooecia, pointing diagonally. Base of zoarium flat, with radial ridges indicating the position of the last series of zooecia and with scattered avicularia, some with round and some with acute mandibles.

Obs.—These three species are very similar in character. *B. biarmata* and *B. multiarmata* are so much alike that it requires a microscope to distinguish them. The principal difference in them is the size and number of avicularia on the surface of the zooecia; in *B. biarmata* there is one avicularium on each side of the thyrostomes with long acute mandibles pointing horizontally outwards; in *B. multiarmata* there are from four to six very small broadly oval avicularia ranged round the thyrostome. In both these species there is no indication of the position of the last series of zooecia. *B. magniarmata* is a slightly larger form, the apical angle is greater, there is a single series (sometimes two) of large avicularia between the rows of zooecia, and on the base there is a slight indication of the position of the last series of zooecia.

Bipora ampulla, *sp. nov.*

(Plate lxxvi., figs. 4a, 4b, 5a and 5b.)

Zoarium disc-shaped but convex on the upper surface; 6 to 7 mm. in diameter; calcification covering the whole of the central portion of the upper surface, with a few small round avicularia and pores scattered about. Zooecia flask-shaped and with greatly extended tubular peristomes, which can be seen from above pro-

truding round the periphery. The thyrostome being far below in the tube of the peristome is not clearly visible; it is apparently oval, and on the summit of some of the peristomes there are two very minute circular avicircularia. The central portion of the base of the zoarium is concave and mamillated, with minute circular avicularia on the summit of the mamillæ (or pores where they are broken away); the zooecia are ranged round the circumference of the zoarium.

Obs.—This is a very remarkable species. Viewed from above the central portion shows a convex calcareous surface with a few small circular avicularia with a bar, or small pores; round the margin are seen the long tubular peristomes radiating from the centre; there are two rows of them in the adult specimens.

In the "unsorted" material I found two small very young zoaria which I have mounted with the others; they show a star-like arrangement of zooecia with a few avicularia and mamillæ in the central calcified part.

The figures drawn show a half of the upper and under surfaces of two different specimens of medium size and the upper and under surfaces of two young zoaria.

BIPORA (CONESCHARELLINA?) EBURNEA, *sp.nov.*

(Plate lxxvii., figs. 6a, 6b.)

Zoarium disc-shaped; 4 to 5 mm. in diameter; concave in upper surface which is covered with low, large, irregularly disposed mamillæ which appear to have no correlation to the individul zooecia; the whole surface being minutely granulated. Zooecia totally immersed and undefined. Thyrostome depressed, transversely elliptical with a deep sinus in the lower margin; a very small oval avicularium on each side above. Under surface of the younger zoaria mamillated with small round avicularia on the summits. In the older zoaria the under surface is flat, with thick reticulated ridges with small round avicularia (sometimes absent) in the centre of the intervening flat circular depressions and in many of the depressions the calcareous surface is wanting so that they appear as large round perforations.

Obs.—This is probably referrible to D'Orbigny's genus *Conescharellina.*

BIPORA MAMILLATA, *sp.nov.*

(Plate lxxvii., fig. 7.)

Zoarium flat, irregularly oval in shape. Zooecia totally immersed and undefined. Thyrostome orbicular with a slightly

raised peristome; one or two small elevated pores on lower margin. Surface of zoarium covered with mamillæ and numerous avicularia of various forms, some with sub-circular, some with oval, some with triangular mandibles; one of them bears a striking resemblance to the thyrostome of *B. eburnea*, being semicircular in shape with a sinus in the straight margin.

Obs.—This species, of which there is only one specimen, is very near *B.* (*Eschara*) *umbonata*, Haswell, but I consider it to be distinct from it. Haswell's description of the species says:—"Mouth varying in form, the lower lip sometimes straight, sometimes with a round central lobe. Surface ornamented with numerous rounded knobs of various sizes and small scattered avicularia," and his figure agrees with his description; but a specimen lent to me some time ago by Mr. T. Whitelegge showed all the mouths (thyrostomes) to be broadly oval with a sharp sinus in the lower part and all the avicularia were small, elongated and oval. In the present species the thyrostomes are orbicular with no trace of a sinus, and have a slightly raised margin (peristome) and are much further apart, showing that the zooecia are much larger. The avicularia, as above stated, have variously shaped mandibles, and one, as noted, exactly resembles the thyrostome of *B. eburnea*, but is very much smaller.

SELENARIA NITIDA, *sp.nov.*

(Plate lxxvii., fig. 8).

Zoaria discoid, slightly raised in the centre. Base flat and smooth. Zooecia in radiating lines, front surface with subquadrate ridges within which the thyrostome is raised; surface granular. Thyrostome small, arched above, nearly straight below. Vibracular area elongated, constricted in the middle; surface perforated, vibracular pit at distal end circular, with a notched process on the proximal end below the level of the opening.

Obs.—This is very near *S. concinna*, but the zooecia are uniformly smaller in size; the vibracular area is different and the under surface of the zoaria is quite smooth.

HIANTOPORA PERFORATA, *sp.nov.*

(Plate lxxviii., fig. 9.)

Zoarium encrusting. Zooecia undefined, surface covered with large round pores. Thyrostomes broad, somewhat irregular in shape with raised margins and a prominent mucro on the proximal one; elongated avicularia scattered about.

The pores on the surface of the zooecia are not always open; many are closed with a calcareous layer which in some bears a small perforation; the margins of the pores are very slightly raised and expanded, showing a suture between them. The thyrostomes are very irregular in shape owing to the presence sometimes of more than one mucro; the avicularia have a semi-circular cavity and lateral processes at the basal end.

CELLEPORA DOLIARIS, *sp.nov.*

(Plate lxxviii., figs. 10a, 10b.)

Zoaria encrusting. Zooecia barrel-shaped, with encircling ribs, with small pores in the depressed spaces between the ribs; closely aggregated. Thyrostomes orbicular. Peristomes thickened, with broad, flattened spines surrounding the thyrostomes. Small cornucopia-form avicularia between the zooecia.

Obs.—A very singular species. The upper surface shows a series of orbicular thyrostomes surrounded by high, flattened spines, and a few small cornucopia-shaped avicularia. The side view shows it as an aggregation of annulated barrels with a row of small pores between the rings with the funnel-like avicularia. The annulated and perforated side walls are very distinctive features.

ZEUGLOPORA, *gen.nov.*

Zoarium bilaminate, lanceolate. Zooecia on both surfaces, immersed, undefined. Thyrostome suborbicular, with a raised semi-elliptical ridge on proximal margin.

Obs.—This is a very interesting form of an escharine character. The shape of the zoarium is very like a long lanceolate leaf with crenulated edges. The thyrostome with the semi-elliptical ridge extending up each side is very distinctive and warrants the establishment of a new genus for its reception.

ZEUGLOPORA LANCEOLATA, *sp.nov.*

(Plate lxxviii., fig. 11.)

Zoarium bilaminate, lanceolate, with crenulated edges. Zooecia on both surfaces, immersed, totally undefined; surface covered with scattered mamillations and some small oval avicularia. Thyrostome suborbicular with a raised semi-elliptical ridge on the proximal margin and extending about half-way up the sides. Under the microscope the crenulated edges of the zoarium are seen to be due to the projecting parts of the marginal zooecia.

LEKYTHOPORA AVICULARIS, *sp.nov.*

(Plate lxxviii., fig. 12.)

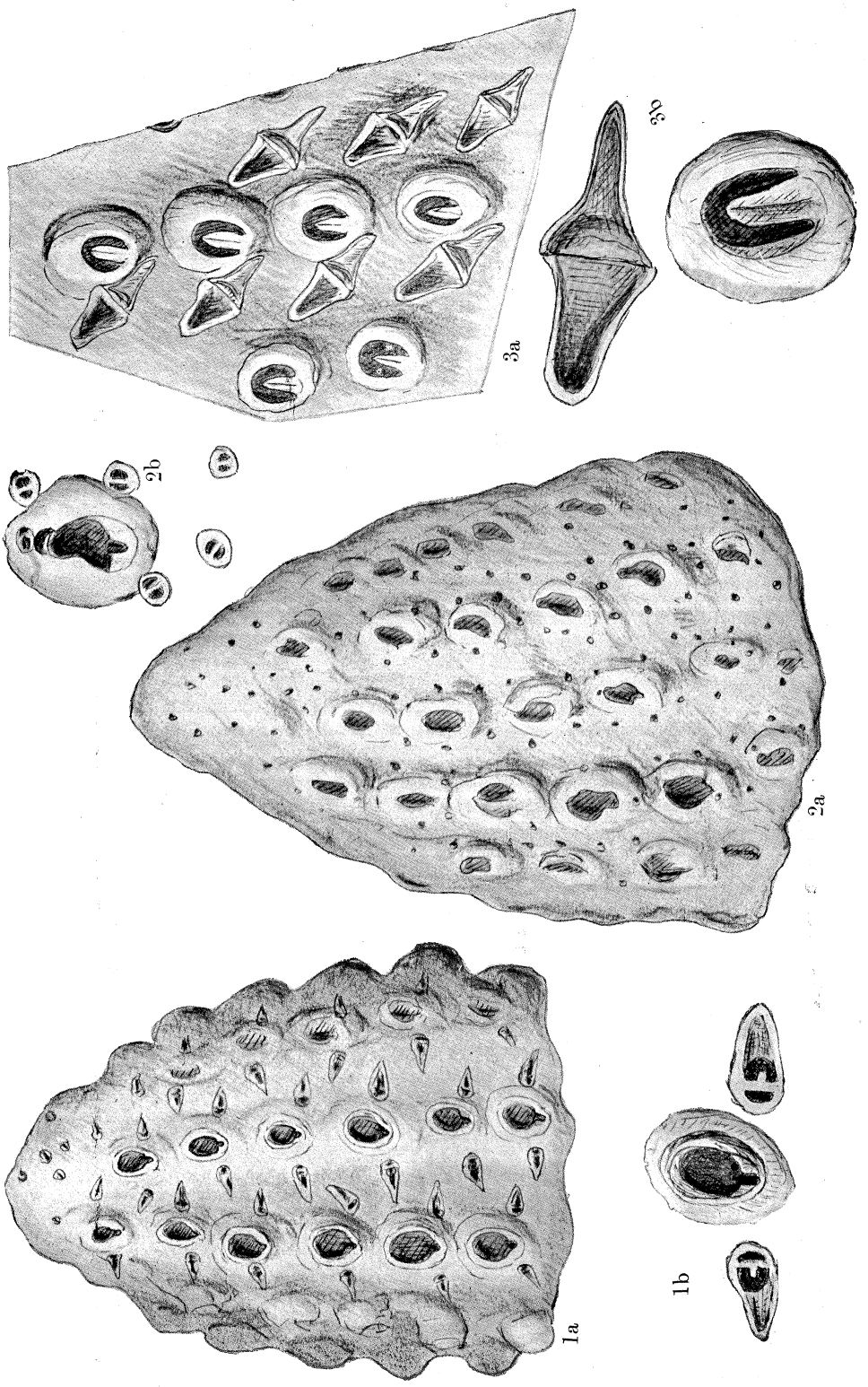
Zoaria erect, with zooecia on all sides. Zooecia flask-shaped, surface minutely granular with a few small perforations. Thyrostome orbicular with a raised margin in which is sometimes a minute pore, probably avicularian. On the front of some of the zooecia there is a long spatulate avicularium.

Obs.—This species differs from *L. hystrix* in that the necks of the flask-shaped zooecia are shorter, the thyrostome has a raised margin and in the presence of the long spatulate avicularia on the front of the zooecia. A single specimen.

EXPLANATION OF PLATE LXXV.

POLYZOA.

Fig. 1a. *Bipora biarmata*, Mapl.— × 50.
1b. ,, ,, (thyrostome and avicularia) × 110.
,, 2a. ,, *multiarmata*, Mapl.— × 50.
,, 2b. ,, ,, (thyrostome and avicularia) × 110.
,, 3a. Portion of *Bipora magniarmata*, Mapl.— × 50.
,, 3b. ,, ,, ,, (thyrostome and avicularia) × 110.



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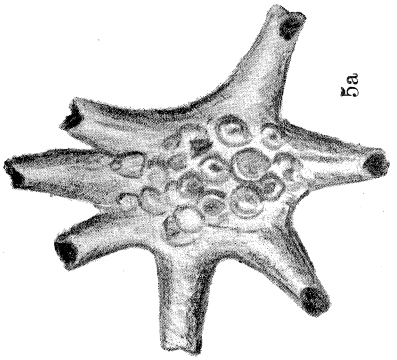
EXPLANATION OF PLATE LXXVI.

POLYZOA.

Fig. 4a. *Bipora ampulla* Mapl. (under surface)— × 26.
,, 4b. ,, ,, (upper surface)— × 26.
,, 5a. ,, ,, young (upper surface)— × 26.
,, 5b. ,, ,, young (under surface)— × 26.



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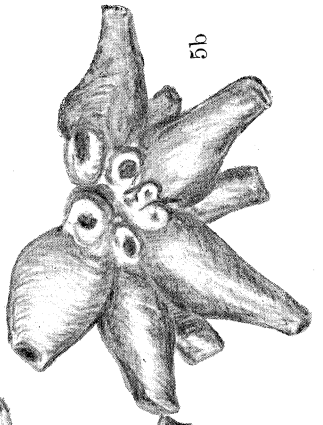

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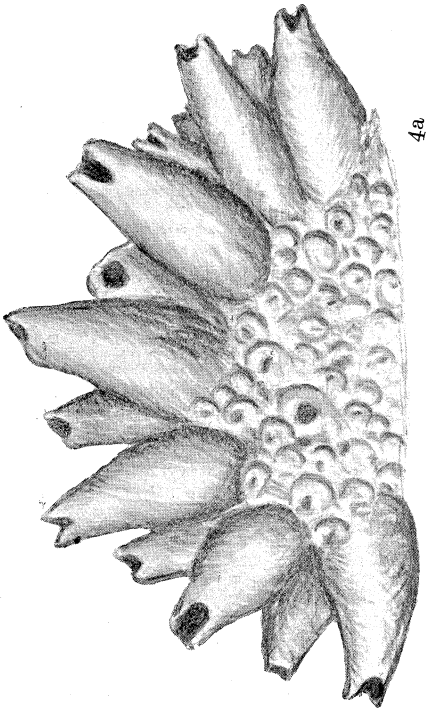

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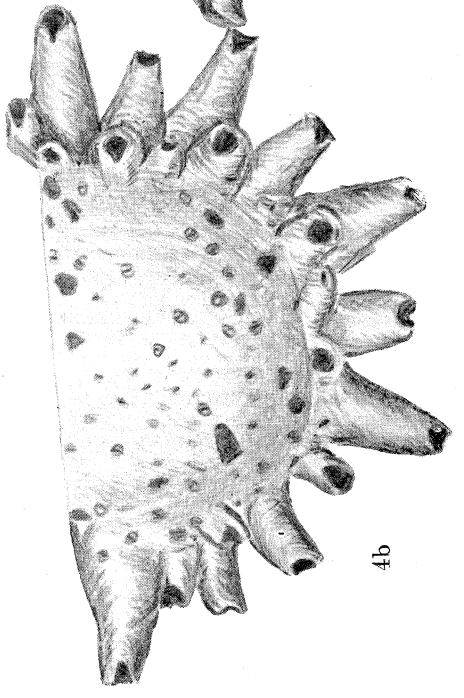

4b

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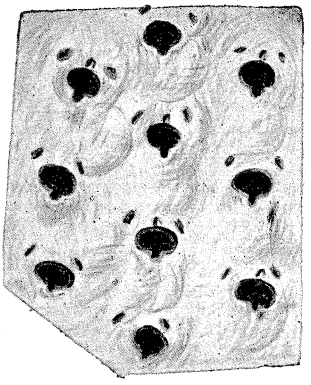
EXPLANATION OF PLATE LXXVII.

POLYZOA.

Fig. 6a. *Bipora eburnea*, Mapl. (portion of upper surface)— × 50.
,, 6b. ,, ,, (portion of under surface)— × 26.
,, 7. *Bipora mamillata*, Mapl. (portion of upper surface)— × 50.
,, 8. *Selenaria nitida*, Mapl. (portion of upper surface)— × 50.



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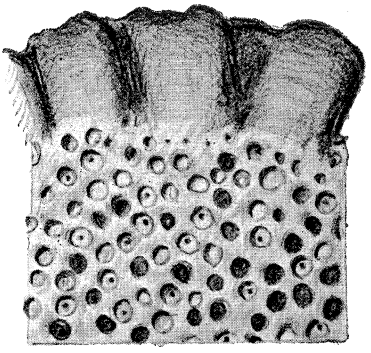

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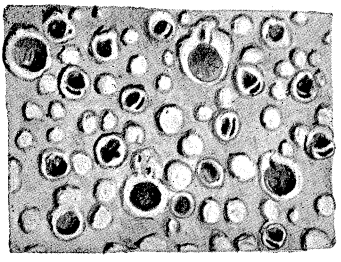

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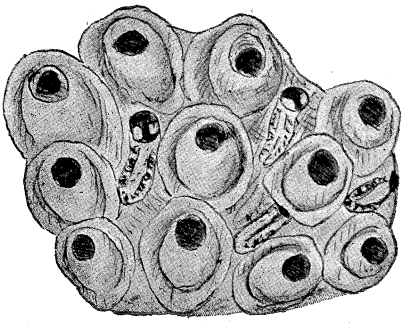

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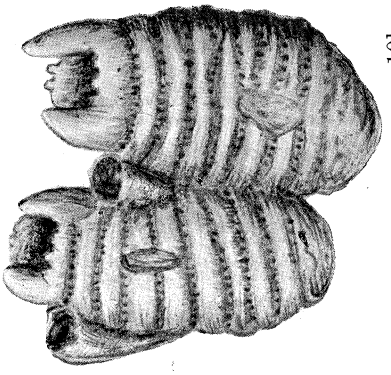
EXPLANATION OF PLATE LXXVIII.

POLYZOA.

Fig. 9. *Hiantopora perforata*, Mapl.— × 50.
,, 10a. *Cellepora doliaris*, Mapl. (viewed from above)— × 50.
,, 10b. ,, ,, (side view)— × 50.
,, 11. *Zeuglopora lanceolata*, Mapl. — × 50.
,, 12. *Lekythopora avicularis*, Mapl. — × 50.



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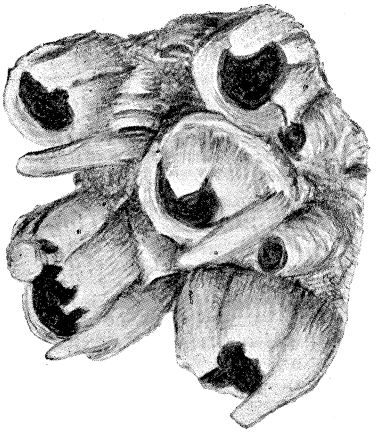

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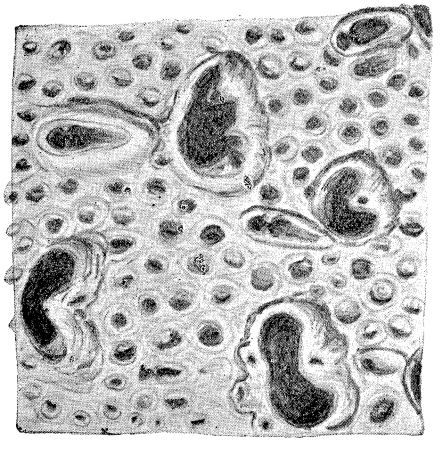

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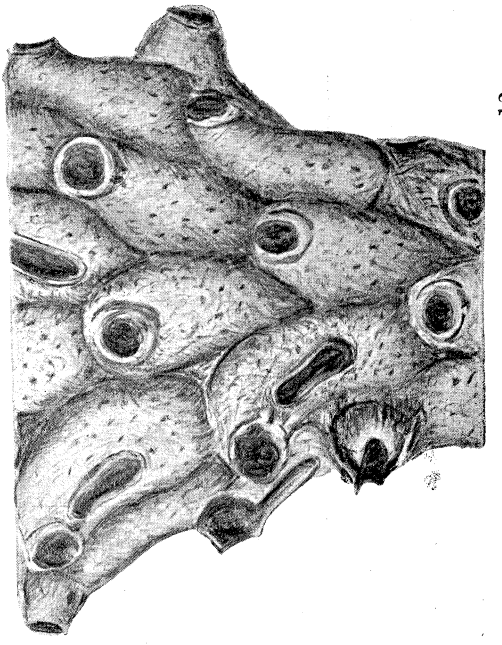

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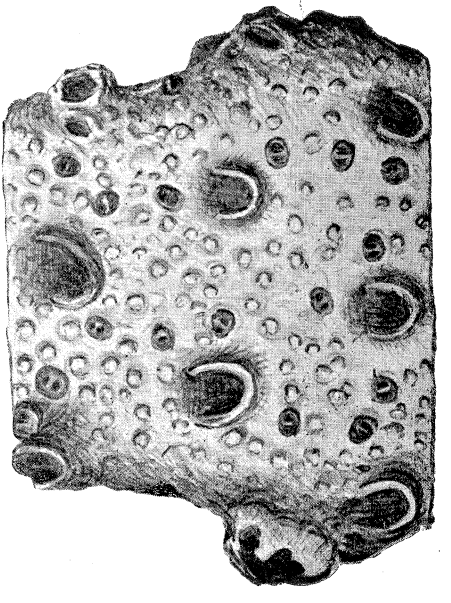

11

C. M. MAPLESTONE, del.

[The following corrections were published in the Table of Contents for Volume 7 in February, 1910—Sub-Editor, September, 2009]

CORRECTIONS.

———

Page 132, line 11—add "*C.*"

,, ,, line 22—delete "*u.*"

,, 213, line 5—for "*bullocki*" read "*bullockii.*"

,, 214, line 4—for "*æmulœ*" read "*æmula.*"

,, 215, line 13 from the bottom—for "silk on *stabilimentum*" read "silk or *stabilimentum.*"

,, 221, line 22—for "Belle View Hill" read "Belle Vue Hill."

,, 262—*Chiton torri*, Hedley and Hull. As this name is preoccupied by Mr. H. Suter (Proc. Malac. Roc., vii., 1907, p. 295) for a New Zealand species, the Australian shell may be known as *Chiton torriana*, Hedley and Hull.

,, 270, line 4—for "avicircularia" read "avicularia."

,, 285, line 3—for *Bothriembyron gunni*" read "*Bothriembryon gunnii.*"

,, 285, line 8—for "*Bulinus gunnii*" read "*Bulimus gunnii.*"

,, 285, line 14—after "Mt. Farrell" insert "Family Helicidæ,"

,, 330, under heading No. 5, line 3—after "Adelaide" insert "Johnston."

,, 331, line 1—omit "8."

,, ,, line 8—for "9" read "8."

,, ,, line 12—for "10" read "9."

,, 335, line 11—for "Australia" read "Australian human."

,, 336, under heading 23, line 2—omit the comma after "which."

Plate xiii., explanation—lines 3 and 5 for "Inorthographic" read "Orthographic."

,, l., explanation—for "Amboipo" read "Amboiba."

,, li., explanation—for "Amboida" read "Amboiba."

,, liii., explanation—for "Amboida" read "Amboiba."

,, lxiii., explanation—for "*Gasteracantya*" read "*Gasteracantha.*"

,, lxxii., explanation—for "fig. 28" read "fig. 23."

,, lxxxi.—transpose 2 and 3.