

beneath glossy chestnut-brown; legs steel-blue, the femora, except at the apex, luteous yellow.

MESSALIA.

Caput breve, rotundatum; *clypeus* a capite lineatim discretus; *oculi* subapproximati. *Antennæ* longiusculæ, articulis a quinto dilatatis. *Prothorax* convexus, a pleuris linea elevata separatus. *Elytra* oblonga. *Prosternum* postice subacute productum; *mesosternum* antice depressum. *Fedes* elongati, intermedii longiores.

The antennæ are also dilated in this genus; but they are longer, and the dilatation begins at the fifth joint; the sixth and seventh are petiolated; the eleventh oblong, rounded at the apex; all these dilated joints are as long as they are broad. A raised line separates the flanks of the prothorax from its pronotum. The greater length of the intermediate legs marks a return to one of the characters of *Strongylium*.

Messalia varians.

M. oblonga, subcyanea, nitida; antennis nigris. Long. 5 lin.

Hab. Gilolo, Penang.

Oblong, light indigo-blue with purplish or violet reflections; head sparingly punctate, separated from the clypeus by a sharp well-marked line; antennæ black, about three times as long as the prothorax, third and fourth joints subcylindrical, the former longest; prothorax not quite as long as broad, the sides rounded anteriorly, parallel behind, sparsely punctate, the basal margin and scutellum inclining to azure; elytra about three times as long as the prothorax, much broader at the base, finely seriate-punctate; body beneath sparingly punctate; legs darker blue, inclining to violet.

LIII.—*Report on the Polyzoa of the Queen Charlotte Islands.*

By the Rev. THOMAS HINCKS, B.A., F.R.S.

[Continued from vol. x. p. 471.]

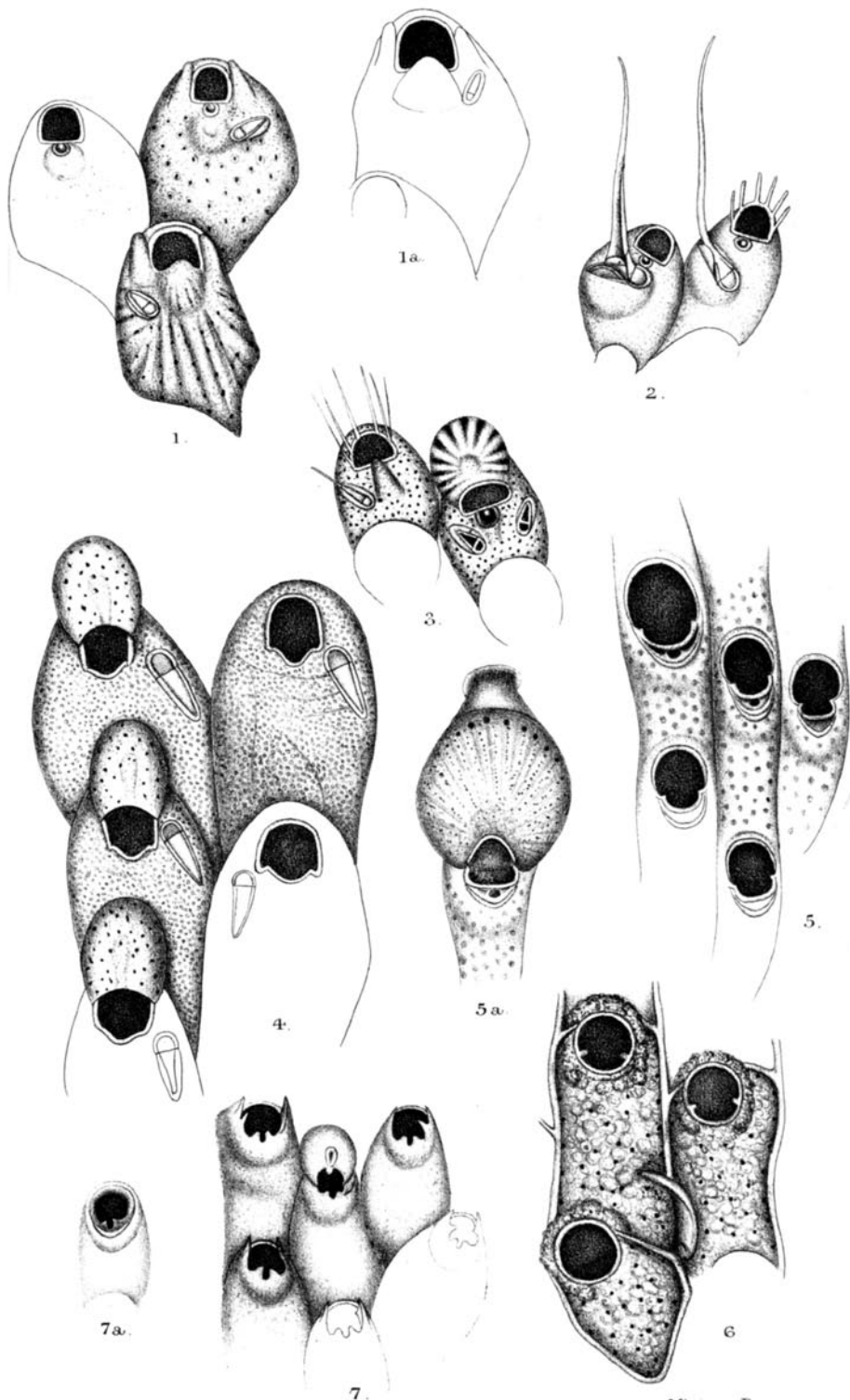
[Plates XVII. & XVIII.]

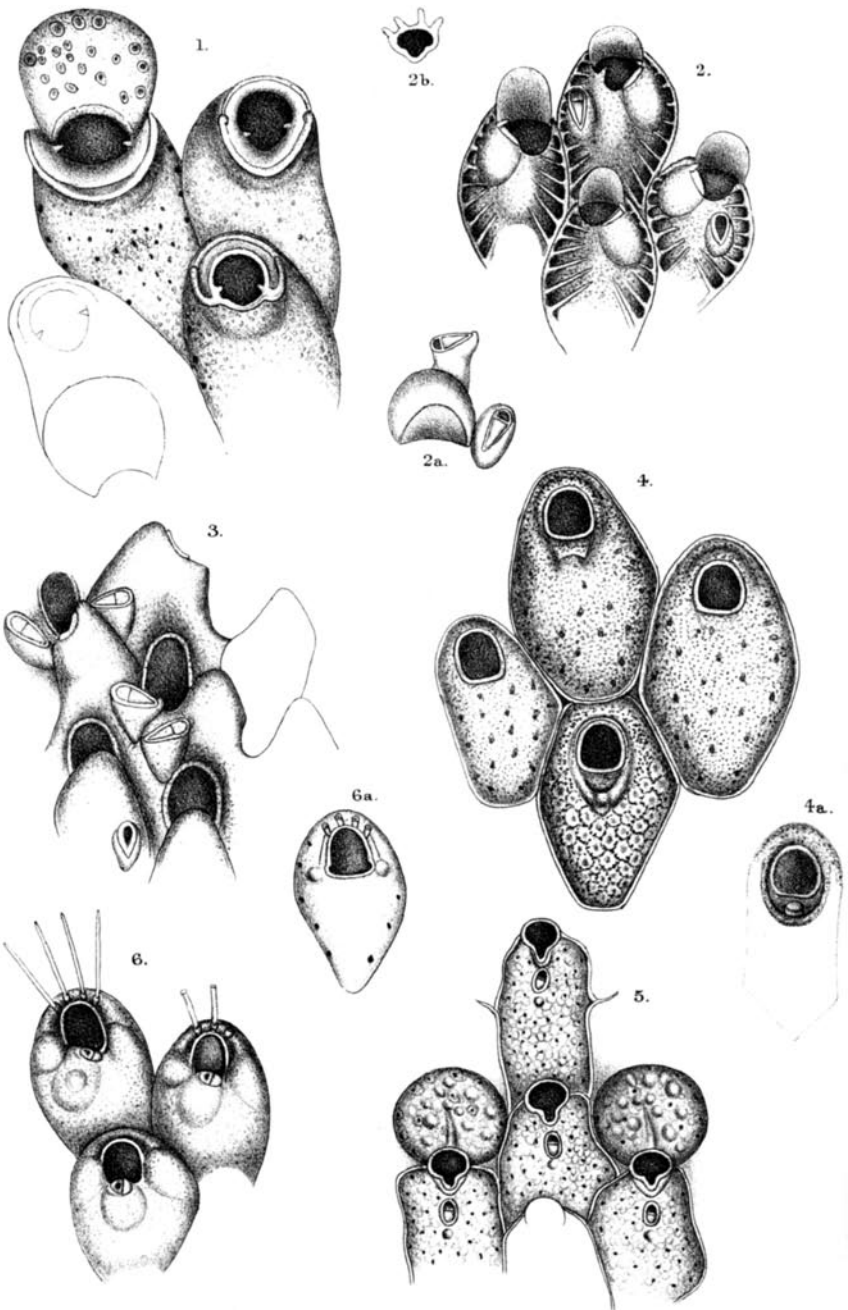
Family Cribrilinidæ.

CRIBRILINA, Gray.

Cribrilina radiata, Moll.

Form *innominata*: off Cumshewa; Houston Stewart Channel.





[Form with *vibraculoid setæ*: Britain, chiefly south and south-west coasts; France (south-west), Mediterranean, Madeira, Gulf of Florida].

Some beautiful varieties of this variable species occur: the form which bears vibraculoid setæ is especially remarkable for richness of sculpture and delicacy of structure; it is furnished with a distinct (though minute) lunate pore, placed within the triangular space below the mouth. This character therefore is not distinctive as between the genera *Microporella* and *Cribrilina*, though it is always present in the former and very exceptionally in the latter. Smitt unites these genera in one family (Eschariporidæ*); but the very peculiar structure of the cell-wall in *Cribrilina* seems to entitle it to stand as the type of a separate group.

Family Microporellidæ.

MICROPORELLA, Hincks.

Microporella ciliata, Pallas.

Normal and forms *californica* (Busk), *vibraculifera* and *umbonata*, mihi.

[Normal: Arctic and northern seas; Britain, France (south-west), Mediterranean, Florida, Zanzibar, Australia, New Zealand, &c. Var. *californica*, California.]

Microporella ciliata, form *vibraculifera* †, n. (Pl. XVII. fig. 2.)

Avicularium replaced by a very tall membrano-chitinous vibraculoid process, situated on a rather large mound or swelling, the beak elevated at the sides and somewhat deeply notched or channelled at the extremity.

This is in many respects the most remarkable form which Dr. Dawson's dredgings have yielded. It occurs abundantly and in company with the normal *M. ciliata* and several interesting varieties.

I have already discussed (in the paper referred to) the curious morphological change which the avicularian organ has undergone in this variety, and its significance as illustrating the relation between the two appendages (*avicularium* and *vibraculum*). The mandible of the *avicularium* is frequently

* 'Floridan Bryozoa,' part i. p. 21.

† See a paper by the author "On certain remarkable Modifications of the *Avicularium* in a Species of Polyzoön; and on the Relation of the *Vibraculum* to the *Avicularium*" ('Annals' for January 1882, p. 20).

slightly elongated, and projects a little beyond the anterior extremity of the beak. In the present variety this elongation has been carried very much further, and at the same time a narrow chitinous expansion seems to have been developed along each edge of the setiform process thus formed. In this way a tall vibraculoid organ has taken the place of the normal mandible. The beak survives; but it too has undergone a certain amount of modification, tending to secure freer play for the movable seta. In general character the present variety agrees entirely with the ordinary forms of *M. ciliata*.

A glance at the three varieties represented on Pl. XVII. (figs. 1, 2, 3) will suffice to show what an amount of superficial difference there may be within the limits of one and the same species, and may well suggest those structural elements which should have most significance with the systematist, as indications of genetic affinity.

Microporella ciliata, form *umbonata*, n. (Pl. XVII. fig. 1.)

An umbonate process placed on each side of the orifice. Below the inferior margin a massive mamillary rising, which, when fully developed, conceals the pore. The entire surface thickly covered with rather large punctures, which are sometimes arranged in radiating lines.

Loc. Dolomite Narrows, on stone.

Microporella ciliata, form *californica*. (Pl. XVII. fig. 3.)

Lepralia californica, Busk, Quart. Journ. Micr. Sc. iv. (1856) p. 310, pl. xi. fig. 6.

This variety is abundant amongst the dredgings. The oecium is sometimes very prettily adorned with ribs radiating from a central boss towards the base.

Microporella Malusii, Audouin.

Extremely abundant and very fine; one of the commonest species.

MONOPORELLA, Hincks.

Monoporella brunnea, n. sp. (Pl. XVIII. fig. 4.)

Zoecia ovate or sometimes lozenge-shaped, quincuncial, moderately convex, separated by fine lines, sutures well defined; surface glistening, minutely granulated, punctured and reticulate, the punctures often more or less obliterated by the calcification; orifice arched above, lower margin straight or slightly curved inward, peristome not raised; the cell-wall

elevated below the mouth, so as to inclose a small cavity or chamber, within which is placed a slightly raised circular *avicularium*. *Oecium* (?). *Zoarium* forming a light brownish crust.

In this species the surface glistens as if varnished. The cells are well defined and simple in structure. In the older zoecia the punctures disappear beneath the calcification, the reticulations showing faintly through the stony crust.

Family **Myrionozoidæ** (part.), Smitt.

SCHIZOPORELLA, Hincks.

Schizoporella auriculata, Hassall, form *ochracea*, Hincks.
(Plate XVIII. fig. 5.)

Off Cumshewa. [Britain, coast of Cornwall.]

I have not noticed the normal form of this species; but the variety which I have named *ochracea*, and which is characterized by the presence of an immersed oval avicularium on the front of the cell a short distance below the mouth, is not uncommon.

In the specimens from the Queen Charlotte Islands there is almost always a small nodule immediately below the avicularium, which is wanting in the British form.

Schizoporella Ceciliæ, Audouin.

Incrusting a *Cellepora*; a single specimen.

[Mediterranean, Australia, Britain (south-west), Channel Islands.]

Schizoporella hyalina, Linnæus.

Very abundant.

[Arctic seas, Britain, California, Africa, Australia, New Zealand, Falkland Islands, &c.]

Schizoporella sanguinea, Norman.

On shell, a single specimen of great beauty. Avicularia are altogether wanting.

[Britain (south-west), Mediterranean, Madeira, Florida.]

Schizoporella biaperta, Michelin.

Houston Stewart Channel; Virago Sound. On shell and stone.

[Britain (south), Arctic seas, Mediterranean, Madeira, Florida (deep water), Bass's Straits.]

The surface in the younger cells is thickly covered with minute punctures, which are more or less obliterated as calcification proceeds. A rounded avicularium is present on both sides of the orifice, and the large mamillated form with pointed mandible is also abundant.

Schizoporella sinuosa, Busk.

Shallow water, on shell.

[Scotland (west), and Shetland, Arctic seas, Gulf of St. Lawrence.]

Highly calcified, the oecia being deeply immersed.

Schizoporella crassilabris, n. sp. (Pl. XVIII. fig. 1.)

Zoecia large, elongate, ovate, quincuncial, very distinct, convex; surface dense, punctured (the punctures often obliterated by the calcification); orifice suberect, suborbicular, with a broad, rounded, shallow sinus occupying nearly the whole of the lower margin; peristome raised and thickened, forming a wall round the orifice, often massive in front, where it is carried out into a broad projection, notched or sinuated in the centre. *Avicularia* none. *Oecium* large, rounded, broader than high, with rather large punctures.

Houston Stewart Channel, 15–20 fathoms, on small shells.

Schizoporella crassirostris, n. sp. (Pl. XVIII. fig. 3.)

Zoecia ovate, quincuncially arranged, very convex, much elevated (gibbous) towards the oral region; surface dense, traversed by raised lines or ribs, radiating towards the sides; immediately below the orifice a tall and massive rostrum which occupies a large part of the front of the cell; on the inner side of it towards the base an avicularium placed transversely, mandible pointed, beak sharp and curved at the extremity; below the rostrum a smooth area, extending to the bottom of the cell, arched above, and marked off by a distinct line; orifice orbicular, with a shallow rounded sinus on the lower margin, occupying about two thirds of its width, peristome raised in the older cells; frequently a pointed *avicularium*, placed on the margin of the orifice and attached to one side of the rostrum. *Oecium* (?).

On stone, a single specimen.

A very peculiar form, of which the striking feature is the large rostrum, which appears all the larger from the elevation of the cell-wall below the orifice. The defined area, with smooth surface below the rostrum, is no doubt the site of the oecium, which was not developed in the specimen examined.

Schizoporella longirostrata, n. sp. (Pl. XVII. fig. 4.)

Zoecia large, ovate, disposed in lines, moderately convex (sutures shallow); surface roughened or minutely granulated, covered with an epitheca; orifice arched above, lower margin extended into a wide, rounded, and shallow sinus, which occupies about three fourths of the width; peristome thin, sometimes elevated at each side; on one side of the cell, generally a little below the orifice, an elongate pointed *avicularium*, the mandible (which is broad at the base and tapering above) directed obliquely downwards, usually turned slightly outwards. *Oecium* rounded, depressed in front, thickly punctured, with a shallow oral arch.

Off Cumshewa, on shell.

A curious diversity in the shape of the orifice occurs in this species. It is commonly as described in the diagnosis; but interspersed amongst the normal zoecia are others in which the orifice is of a narrow elongate form, the sinus being deep and pointed, and less distinctly marked off from the rest of the oral opening than in the other case. The shape of the mouth in these cells is very regularly obovate. When covered with its epitheca this species is of a uniform light brown colour, and the granulose sculpture is almost concealed.

Schizoporella insculpta, n. sp. (Pl. XVII. fig. 5.)

Zoarium foliaceous and bilaminate, or incrusting. *Zoecia* large, ovate, or narrow-oblong (often much elongated), quincuncial, depressed, separated by raised lines, sutures shallow; surface vitreous, glossy, thickly covered over its whole extent with punctures; orifice arched above, the lower margin almost entirely occupied by a wide, very shallow sinus; peristome thin, moderately raised, extended in front (beyond the sinus) so as to form a small chamber, in which is a rounded orifice (? avicularian). *Oecia* profusely developed, very large (covering about two thirds of the cell above), elongate, rounded above, with a tall oral arch, thickly covered with slight granulated ridges, which radiate from the opening to the base, sometimes punctured round the base.

Virago Sound, attached to stems, from which it rises in free foliaceous expansions; Cumshewa Harbour. [Vancouver Is.]

The oecium is sometimes extended at the top into a disk-bearing process, by which it is attached to the cell above (Pl. XVII. fig. 5 a).

Schizoporella tumulosa, n. sp. (Pl. XVIII. fig. 2.)

Zoecia quincuncial, very regularly arranged, very convex,

ovate, much elevated centrally below the mouth, the wall sloping steeply down to the margin of the cell; surface dense, smooth, rather glossy, areolated round the edge, ridges radiating towards the centre; orifice orbicular, with a small central sinus, not contracted at the opening; peristome not elevated; immediately below the orifice, at one side of the sinus, a rostrum bearing on one side a pointed *avicularium*, the beak very slightly bent at the extremity, mandible directed upwards, the rostrum rising into a short mucronate point behind the avicularium; very commonly on the front of the cell, near the bottom, a much-raised *avicularium* (mounted on a prominent elevation) with a pointed mandible directed straight outwards. *Oœcium* rounded, smooth, much broader than high, with a tall oral arch filled in by a calcareous plate.

Off Cumshewa, in 20 fathoms, forming a brownish spreading crust.

Schizoporella pristina, n. sp. (Pl. XVII. fig. 6.)

Zoœcia ovate, irregularly disposed and shaped, moderately convex, separated by raised lines; surface thickly punctured, presenting (in older states) a reticulated appearance; orifice rounded above, the lower margin curving out below the opercular denticles into a wide rounded sinus, so that the mouth appears almost circular, peristome not raised, sometimes a thickened granulous border surrounding the orifice in front. *Avicularia* none. *Oœcium* (?).

Dolomite Narrows, on shell.

The oral sinus in this species takes its origin immediately below the denticles on which the opercular valve works, and is somewhat difficult to recognize. At first sight the orifice seems to be circular, as the sinus occupies nearly the whole of the inferior margin. The lower cell in the figure (Pl. XVII. fig. 6), which is represented with the operculum *in situ*, is defective in not showing the contraction below the denticles.

We have here, we may suppose, one of the primitive forms of the sinuated orifice, from which others may have been derived by contraction (more or less) or other modification of the marginal curve. The suboral pore of certain genera probably owes its origin to the isolation of the most specialized form of sinus, a central notch with contracted aperture.

Schizoporella maculosa, n. sp.

Zoœcia quincuncial, rather small, moderately convex, sutures shallow; surface shining, covered with small punctures, which are closed in by a brownish membrane, and give a

spotted appearance to the front wall; orifice arched above, with a shallow bluntly pointed sinus below, not contracted at the opening, peristome slightly thickened; on one side, just below the orifice (or occasionally on both sides), a small rounded *avicularium* on a prominent boss. *Oæcium* (?).

On shell.

The specimens of this form have unfortunately been mislaid; but I hope to be able to give a figure of it in a subsequent portion of the Report.

Schizoporella Dawsoni, n. sp.

Zoæcia ovate, or hexagonal, quincuncial, depressed or very moderately convex, separated by raised lines, highly calcified, vitreous; surface reticulato-punctate (punctures appearing as deep shafts in the vitreous crust); orifice arched above, much broader than high (narrow between the upper and inferior margins), a shallow rounded sinus in the centre of the lower margin, not contracted at the opening; peristome not raised, thickened round the sinus. *Avicularia* none. *Oæcium* rounded, closely united to the cell above, somewhat depressed in front, glossy, covered with rather large punctures; a prominent thickened border round the opening.

Virago Sound, on shell.

SCHIZOTHECA, Hincks.

*Schizotheca fissurella**, n. sp. (Pl. XVII. fig. 7.)

Zoæcia small, quincuncially disposed, ovate, the lower portion flattish, the oral region raised, tubular, suberect; sometimes punctured round the margin, sutures extremely shallow; surface smooth, porcellaneous, shining; orifice immersed, arched above, straight below, with a narrow slit-like sinus; (?) two spines on the upper margin; peristome thickened and elevated round the mouth, so as to form a kind of neck, carried out in front into a projection, which is notched in the centre and bimucronate; on each side a sharp spinous process, often wanting. *Oæcium* rounded, smooth, with a small longitudinal fissure above the opening, and a central tooth-like process just within the oral arch.

Dolomite Narrows; Cumshewa, &c.; not uncommon on shells and stone.

This is a very characteristic member of the genus *Schizotheca*, of which only two species have hitherto been recorded—

* Described as a *Schizoporella*, 'Annals' for September 1882, p. 253.

S. fissa, Busk (Britain and Mediterranean), and *S. divisa*, Norman (Britain). I have only noticed obscure traces of marginal spines, which constitute a very striking character in the British forms.

HIPPOTHOA, Lamouroux.

Hippothoa expansa, Dawson.

Common on shells; Houston Stewart Channel. [Shetland, Gulf of St. Lawrence, Davis Straits.]

Hippothoa distans, MacGillivray.

Cumshewa; Houston Stewart Channel. [Britain, Mediterranean, Singapore, Australia.]

MYRIOZOOM, Donati.

Myriozoom coarctatum, Sars.

Cumshewa; Houston Stewart Channel, 15–20 fms.; abundant and fine. [Vancouver Island, Campbell Island (British Columbia), Arctic seas, Norway.]

Family *Escharidæ* (part.), Smitt.

LEPRALIA (part.), Johnston.

Lepralia nitescens, n. sp. (Pl. XVIII. fig. 6.)

Zoecia quincuncial, short-ovate, very ventricose; surface dense, vitreous, highly polished and glistening, smooth, with obscure radiating ridges, punctured, sometimes areolated round the margin; orifice much higher than broad, immersed in the older cells, arched above, slightly contracted a short way above the lower margin, which is a little curved outward; peristome not raised, the inner edge of the oral aperture finely denticulate, 3 or 4 spines above; on each side, in a line with the lower margin, a strong nodulous process; about the centre of the margin an *avicularium*, with rounded mandible, placed on a swelling, which extends some way down the cell, and facing sideways, mandible directed upwards; often on the front of the cell near the bottom (towards one side) a bracket-like projection, bearing a rounded *avicularium*. *Oœcium* (?).

Zoarium forming a brownish patch on shells.

Houston Stewart Channel; Cumshewa; Virago Sound (probably).

EXPLANATION OF THE PLATES.

PLATE XVII.

- Fig. 1. *Microporella ciliata*, Pallas, form *umbonata*, Hincks.
 Fig. 2. *Microporella ciliata*, Pallas, form *vibraculifera*, Hincks.
 Fig. 3. *Microporella ciliata*, Pallas, form *californica*, Busk.
 Fig. 4. *Schizoporella longirostrata*, n. sp.
 Fig. 5. *Schizoporella insculpta*, n. sp. 5 a. Oœcium.
 Fig. 6. *Schizoporella pristina*, n. sp.
 Fig. 7. *Schizotheca fissurella*, n. sp. 7 a. A zoœcium showing the primary orifice.

PLATE XVIII.

- Fig. 1. *Schizoporella crassilabris*, n. sp.
 Fig. 2. *Schizoporella tumulosa*, n. sp. 2 a. Oœcium. 2 b. Orifice of marginal cell.
 Fig. 3. *Schizoporella crassirostris*, n. sp.
 Fig. 4. *Monoporella brunnea*, n. sp. 4 a. Zoœcium showing the suboral avicularium.
 Fig. 5. *Schizoporella auriculata*, Hassall, form *ochracea*.
 Fig. 6. *Lepralia nitescens*, n. sp. 6 a. A young zoœcium.
 [A figure of *Schizoporella Dawsoni* will be given hereafter.]

BIBLIOGRAPHICAL NOTICES.

Cassell's Natural History. Edited by P. MARTIN DUNCAN, M.B. (Lond.), F.R.S., &c. 6 vols., large 8vo. London: Cassell, Petter, Galpin & Co., 1877-82.

THE enterprising publishers of the book of which the above is the title have brought out a considerable amount of popular scientific literature, some of it good, some indifferent, or even worse. A former natural history of animals, we think in four volumes, fell under the second of these categories; and the publishers, in commencing the issue of a new work with the same scope, have certainly acted wisely in entrusting its superintendence to the hands of a naturalist of repute like Prof. Duncan. The advantage of such a course is pretty clear in the quality of the work produced, which, although somewhat uneven, owing to the varying idiosyncracies of numerous authors and to another cause to which we shall have to advert, is certainly much higher than we are accustomed to meet with in books of the same description.

In connexion with the first of the above-mentioned causes of difference in the treatment of different departments of the subject, it must be remarked that it would be impossible for any amount of editorial supervision entirely to prevent such divergence, complete uniformity of treatment being attainable only in the case of the