

Trans. New Zeal. Instit. for 1890. This figure must be ignored, as the colour is unlike the species and the venation portrayed is also different from any known genus of Cicadidæ.

*Cicadu cossiope*, Huds. l. c. p. 54, = *Melampsalta nervosa*, Walk. List Hom. i. p. 213. n. 166 (1850).

L.—*Contributions towards a General History of the Marine Polyzoa*, 1880–91.—*Appendix*. By the Rev. THOMAS HINCKS, B.A., F.R.S.

[Continued from vol. viii. p. 480.]

‘Annals,’ August 1881 (p. 65 sep.).

*Mucronella teres*, sp. n.

Syn. *Mucronella levis*, MacGillivray, Trans. Roy. Soc. Victoria, July 1882; Prodr. Zool. Vict. decade xii. p. 64, pl. cxvi. fig. 3.

There can be no doubt that MacGillivray’s *M. levis* is identical with the present species, of which it must rank as a synonym. The only differences between the two as described are that in *M. levis* three spines are present in front of the oecium on each side, whilst in the specimens which I examined there were only two, and that the small nodular projection on the inner face of the mucro in *M. teres* is not noted by MacGillivray. These points are quite immaterial.

Ibid. (p. 65 sep.).

*Mucronella spinosissima*, sp. n.

This species is identified by Waters\* with *Mucronella Peachii*, var. *octodentata*, Hincks, and Miss Jelly has taken the same view in her ‘Catalogue;’ but I am quite unable to accept their decision. *M. spinosissima* is, I have no doubt, identical with the fossil form from New Zealand described by Waters (*loc. cit.*); it agrees with his diagnosis even in

\* “Tertiary Cheilostomata from New Zealand,” Quart. Journ. Geol. Soc. for Feb. 1887, p. 56.

minute particulars \*, but it differs essentially from *M. Peachii*, var. *octodentata*. From the latter it is distinguished by its lageniform cells, the tall, neck-like, tubular peristome, which is more than suberect, sometimes standing up almost at right angles to the cell-wall, the rim bearing at the back and round the sides about eight rather short spines set closely together, the front margin carried up into a somewhat broad mucro, often bi- or tridentate, and by its recumbent oocidium. It is also furnished with an oral denticle, but it differs in form and position from that of the variety *octodentata*. The cells of *M. spinosissima* are very ventricose below, the surface is smooth and shining, and a line of small circular pores runs round the margin. I have no doubt of its distinctness from the British form.

In my "Report on the Polyzoa of the Queen Charlotte Islands" I have described a supposed variety of the present species under the name *M. spinosissima*, form *major* †. Further consideration has convinced me that the supposed variety is really a distinct species, with some marked characteristics, of which the tubular structure in the cell-wall is probably the most important. I propose to name it *Mucronella perforata*.

Miss Jelly also ranks *Lepralia multispinata*, Busk, as a synonym of the variety *octodentata* ‡. Upon this I can only remark that the general character and the details of structure seem to me strikingly dissimilar in the two forms. This must be apparent, I think, on a comparison of Mr. Busk's figure with my own. I may direct attention specially to the enlarged figure of the orifice of *L. multispinata* §, which represents a totally different structure from that which is characteristic of *M. spinosissima*.

In his 'Challenger' Report (part 1, p. 160) Busk has described a variety of *Mucronella ventricosa*, which he has named *multispinata* and which he was inclined to think might be identical with my *M. Peachii*, var. *octodentata*. His form, he contends, must be referred to *M. ventricosa* rather than to *M. Peachii*, and judging from the detailed account which he has given of it there can be little doubt that he is right. On the other hand, some of the most

\* It is furnished, like the fossil species, with the broad, flat, oral denticle, directed downwards and overhanging a large portion of the orifice, mentioned by Waters. It may be added that the upper margin of the primary orifice is distinctly erenulate.

† "Report Pol. Q. C. I." p. 27 (sep.), pl. iii. fig. 3.

‡ 'Synonymic Catalogue,' p. 195.

§ Quart. Journ. Micr. Sci., "Zoophytology," n. s. i. p. 78, pl. xxxii. fig. 6.

distinctive features of *M. Peachii* are present in my variety—the smaller cell, the absence of striation on the front wall, the less massive mucro, and the comparative smallness of the oral denticle. The two forms are probably distinct; Mr. Busk's figure in the 'Challenger' Report can hardly be referred to the var. *octodentata*.

*M. Peachii* and *M. ventricosa* are closely allied species and have recently been united by Lorenz. They are liable to much variation, but there is a strongly marked character about the normal *M. ventricosa*.

Ibid. (p. 66 sep.).

*Mucronella tricuspis*, sp. n.

Syn. *Exochella longirostris*, Jullien, Mission du Cap Horn, Bryozoaires, vol. vi. 1888, p. 55, pl. iii. figs. 1-4.

I can see no difference of any moment between this species and *Exochella longirostris*, Jullien. The pores round the margin of the cell in the latter are wanting in my specimens of *M. tricuspis*; but this is a variable character and has no diagnostic value. The difference may be due to the degree of calcification. Except in this one particular there is a close agreement between Dr. Jullien's figure (fig. 4), which is an admirable one, and my own.

As for the genus *Exochella*, it seems to me to be superfluous. It is founded on a single character of no special importance—the elongate tooth on the lower margin of the orifice, "forming a kind of spur," and dividing the lower lip of the peristome into two distinct portions. If genera are to rest on such slight foundations they may be indefinitely multiplied and will lose altogether their significance and value as representative of leading morphological types.

*Additional Loc.* Tierra del Fuego; Chiloe Archipelago (*Darwin*); Simon's Bay, Cape of Good Hope; Prince Edward Island, 80-150 fath. (*Busk*, 'Chall.' Rep.); Port Phillip Heads and New Zealand (*MacG.*). Fossil: Petane (*Waters*); Ile Hoste, baie Orange; Canal du Beagle, au sud de l'île Gable (*Jullien*).

Ibid. (p. 66 sep.).

*Rhynchopora longirostris*, sp. n.

Not identical with *Mucronella tubulosa*, Hincks (see 'Annals' for August 1891, p. 172).

Ibid. (p. 68 sep.).

*Cellepora granum*, sp. n.

For synonyms see Miss Jelly's 'Catalogue.'

Waters has remarked that this species is closely allied to *Lagenipora spinulosa*, Hincks, and *L. lucida*, H. There are no doubt points of resemblance, but the differences in the structure of the zoecium &c. are probably of sufficient importance to justify us in referring them to distinct genera. The first of these species (*L. spinulosa*) he considers to be probably identical with *Cellepora bicornis*, Busk\*. I am indebted to Dr. Günther's courtesy for the opportunity of examining specimens of the latter from the 'Challenger' Collection, and I am inclined to think that they are distinct forms. One of the marked features of *L. spinulosa* is the strongly reticulated surface of the cells. They are completely covered below the tubular peristome with rather large roundish foramina closed in by a silvery-white membrane and surrounded by a raised line, forming a distinct network over the cell-wall. This is the usual and characteristic structure, though occasionally in certain states it may be more or less obscured. Of this there is no mention in Busk's description of *Cellepora bicornis*, nor is there a trace of it in the specimens which I have examined. A few large circular pores are present along the margin of the cell and sometimes round the orifice.

The aviculiferous processes in *C. bicornis*, which are tall and stout, are placed at the front of the peristomial orifice ("præoral," according to Busk), and above them are frequently two spinous processes; in *L. spinulosa* they rise on each side close to the upper margin, and immediately below the oecium, when present. In this species the front margin of the orifice (peristomial) is elevated above the rest, somewhat everted, plain or trimucronate; in *C. bicornis* it is usually sinuated between the aviculiferous processes †.

The avicularium of this species is minute as compared with that of the 'Challenger' form. There are also differences in the oecium. That of *C. bicornis* is small, globular, smooth and glossy, with a roundish foramen closed in by membrane ("fissure," Busk) in front, surrounded by a raised line; while that of *L. spinulosa* is semicircular, usually placed far back, and often considerably below the orifice of

\* 'Challenger' Report, part 1, p. 202, pl. xxx. figs. 1 and 12.

† These processes appear to rise from the primary orifice.

the peristome, the front flattened, and surrounded by an arched line, within which the surface is minutely pitted. The cells also differ in shape in the two species—those of *C. bicornis* are very much swollen below and erect; the walls are smooth and entire. The large spatulate avicularia are not present in *L. spinulosa*.

*Additional Loc.* Off East Monocœur Island, Bass Straits, 38 fath. (*Busk, 'Chall.' Rep.*); New Zealand; Port Jackson, 8 fath.; Naples (*Waters*).

Ibid. (p. 68 sep.).

*Lunulites incisa*, sp. n.

This species seems to belong to the genus *Conescharellina*, d'Orb. A question arises as to its specific name. Haswell described it in 1880 as *Conescharellina conica*; my account of it appeared in 1881. So far therefore as time is concerned Haswell's name has precedence. But it has been suggested by Mr. Waters that as a *Batopora conica* and *Lunulites conica* had been previously published, Haswell's name should be rejected and *incisa* retained. How far this will hold good can only be settled when the genera of the Selenarian family have been more accurately determined.

Ibid. (p. 69 sep.).

*Membranipora roborata*, sp. n.

In the original account of this species I have left its systematic position undetermined, referring it provisionally to *Membranipora*. But I have no longer any doubt that it is rightly placed in this genus. Its zoœcium is strictly conformed to the Membraniporidan type; the mere habit of growth we now know to be absolutely immaterial, whilst the curious modification of the radical fibres (or tubes) is associated with the most diverse zoœcial characters and has no generic significance. I am therefore unable to accept Mr. MacGillivray's genus *Craspedozoum*\*, which, so far as the essential points in the diagnosis are concerned, is a synonym of *Membranipora*. The peculiarity in the radical tubes occurs in *Microporella*, in *Menipea*, in *Schizoporella* (probably), and no doubt elsewhere. This structure is specially liable to modifications correlated with diversities of habitat, and has no significance as an indication of genetic affinity.

\* "Descriptions of new or little-known Polyzoa," part ix. fig. 4.

MacGillivray describes two species which he regards as new, *C. ligulatum* and *C. spicatum*; but the differences between these forms and *M. roborata* must be regarded, I think, as merely varietal. The unilaminate condition of the zoarium has certainly no specific value; cases are not rare in which the bilaminate structure and the unilaminate occur in one and the same species. The other points relied upon—the more slender branches, the occurrence of one avicularium instead of two, the slight differences in the spines, and the spike-like process on the oecium—are all well within the limits of specific variation\*.

Ibid. (p. 70 sep.).

*Membranipora amplexens*, sp. n.

This interesting form is entitled to rank as the type of a new genus on the ground of the remarkable structure of its ovicelligerous cells. The oecium itself is not merely a variation upon the ordinary form, but has a distinct morphological character.

Family **Membraniporidæ**.

HETEROŒCIUM, gen. nov.

*Zoecia* pyriform, aperture large, occupying about two thirds of the front, closed in by a membranous covering and furnished with marginal spines (calcareous); immediately below the aperture a tall articulated spine. *Oecium* borne on gigantic cells, which are elongate and of considerable width, extending over almost the whole of the aperture, which is covered by a roof composed of rib-like processes springing from the opposite sides of the cell-wall, and bending slightly inward so as to meet in the centre, where their extremities are soldered together, whilst they are united laterally by a calcareous expansion, the oral arch pointed; *ovicelligerous cells* placed between the divergent lines of zoecia at a bifurcation.

This form is nearly allied, so far as the structure of the zoecium is concerned, to the group of Membraniporidæ which Busk (following d'Orbigny) has referred to the family Electrinidæ †, but is separated from it and from all the Cheilo-

\* *C. ligulatum* and *C. spicatum* are placed amongst the synonyms of *Membranipora roborata* in Miss Jelly's 'Catalogue.'

† 'Challenger' Report, pt. 1, p. 77.



stomatous genera by its oöcial characters. Its ovicelligerous cell differs essentially from the *gonæcium* or sexual cell which occurs amongst the *Adeoneæ*. The latter is an enlarged and otherwise modified zoöcium set apart for reproductive functions. In the present genus there is a true external oöcium or special chamber for the reception of the embryo, but instead of being an appendage of the zoöcium, as is usual, it is an integral part of it, occupying the whole of the upper (or anterior) portion of the cell which is inclosed by a ribbed roofing. This bears a close resemblance in structure to the front wall of the Cribiline zoöcium, and like it has originated in a modification and adaptation of the marginal spines.

The morphological history, then, of the oöcium in this form is unique and its structural elements differ altogether from those which are met with in ordinary species. There is certainly a valid claim to generic rank.

In the absence of living specimens and of specimens preserved in spirit it is hardly possible to interpret the structure and its functions fully; but we may hope that the observations of the Australian naturalists will soon enable us to complete the history.

Ibid. (p. 72 sep.) \*.

*Membranipora variegata*, sp. n.

This species appears to be identical with *M. echinata*, d'Orb. (Voy. Amér. mérid. pt. 4, p. 16). D'Orbigny does not mention the pedicellate avicularia, and his diagnosis is wanting in fulness; but there can be no doubt that he had the present species in view. It will rank as *M. echinata*, d'Orbigny.

*Additional Loc.* Chili and Peru (*d'Orb.*); Queen Charlotte Islands (*Dr. Dawson*).

Ibid. (p. 73 sep.).

*Diachoris (Beania) distans*, sp. n.

Waters ("Australian Bryozoa," 'Annals' for August 1887, p. 94) identifies this species with *Diachoris spinigera*, MacG. He says, "There is considerable irregularity in the number of spines, and from this specimen I consider that *D. distans*, Hincks, is too closely allied to be separated as a species."

\* See also 'Annals' for February 1882, ser. 5, vol. ix. p. 81 (sep.).

I have already pointed out the many and important differences which there are between the two forms. A comparison of MacGillivray's figure with my own will show that they are more or less dissimilar in almost every element of the structure. It is not the mere *number* of the spines which is different; the difference in character is much more important. MacGillivray's description, "long, slender, incurved spines," does not apply to those of *B. distans*. Their form and arrangement, as shown in his figure, offer a complete contrast to those of the present species\*.

It is unnecessary that I should repeat here the careful comparison of the two forms which is embodied in the original account of *B. distans*; but I may emphasize the differences in the avicularia, of which enlarged figures are given.

'Annals,' Feb. 1882 (p. 80 sep.).

*Membranipora pilosa*, Linn., form *multispinata*.

This form was referred doubtfully to *M. pilosa*, but I now regard it as a distinct species which will rank as *M. multispinata* (see the original description, *loc. cit.* and the figure on plate v.).

[To be continued.]

#### BIBLIOGRAPHICAL NOTICES.

*Catalogue of the Type Fossils in the Woodwardian Museum, Cambridge.* By HENRY WOODS, B.A., F.G.S. With a Preface by T. McKENNY HUGHES, M.A., F.R.S. 8vo. 189 pp. Cambridge, 1891.

To enable biologists to be within their rights, and not to infringe on those of others, in giving original names to new genera of animals and plants, there have been provided published lists (and very lengthy catalogues they are) of the appellations already appropriated; and lists of specific names are available to a limited extent; but still the recorder of a new species has to be *assured* whether or no his specimens differ from or agree with already published forms; and to this end it is requisite that he should see those that have been already described, the published figures and descriptions not being always satisfactory.

\* 'Polyzoa of Victoria,' decade v. p. 32. pl. xlvi. figs. 3.