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# STUDIES ON BRYOZOA.

## PART I.

BY

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(Figures 1-3).

### NEOEUTHYRIS: A NEW GENUS TO ACCOMMODATE EUTHYRIS WOOSTERI, *MacGillivray.*

In a paper read before the Royal Society of Victoria, MacGillivray<sup>1</sup> included his description of a new species which he named *Euthyris woosteri*. His description was based on the superficial characters of a small fragment of a specimen collected by Mr. W. H. Wooster at Cooktown, Queensland; and with his description MacGillivray gives his reasons for allotting this form to the genus *Euthyris*.

The holotype is housed in the collections of the National Museum, Melbourne, but the Australian Museum has now acquired the remainder of the original specimen from Mr. Wooster.

This species has not again been referred to by the many authorities on the *Bryozoa*, with the exception of the following remark by Harmer<sup>2</sup>, which has led me to re-examine it. "I feel doubtful whether *Euthyris woosteri*, MacGillivray, is rightly referred to this genus....."

The results of my examination show that "*Euthyris*" *woosteri* has, with one exception, all the characters entitling it to a place in the family Euthyridæ, according to Levinson's diagnosis<sup>3</sup>:—"The *zoecia* are provided with a slightly calcified cryptocyst, and in a larger or smaller part of their surface the surrounding covering membrane is kept distended by ridge-like or rod-shaped processes from the cryptocyst, which has a number of superficial rosette-plates. The interzoecial walls have scattered, uniporous rosette-plates. A compound operculum. No spines and no heterozoecia. There may be endozoecial *oecia* with a projecting ectoecium."

The exception in the case of this form is in the last line of Levinson's diagnosis, which reads "Free, branched colonies." The small specimen obtained by Mr. Wooster was found encrusting marine algae, but what value may be placed on this habit of growth I do not know. MacGillivray and others consider it to be of little importance, and I am of the opinion that the encrusting habit of "*Euthyris*" *woosteri* does not over-ride the structure and give enough reason to place it as yet in a separate family. It must however be considered as generically distinct from the other forms of the family Euthyridæ, and I propose the name of *Neoeuthyris* to accommodate it. From the other genera of the family its differences will be seen from the key. It is closely allied to *Euthyris*, differing firstly in having only one form of the zoecium with no dimorphism of the operculum; and secondly in the presence and disposition of the avicularia.

<sup>1</sup> MacGillivray—Proc. Roy. Soc. Vict., (n.s.) iii., 1891, p. 77, pl. ix., f. 2.

<sup>2</sup> Harmer—Q. J. Mic. Sci., (n.s.) xlvi., 1902, p. 268.

<sup>3</sup> Levinson—Morph. and Syst. Stud. Cheilostomatous Bryozoa, 1909, p. 269.

## GENERIC KEY.

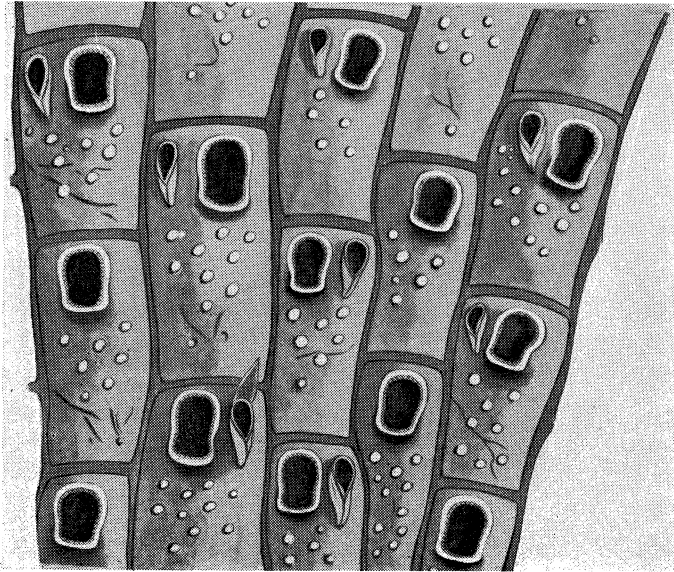
- A. Oœcia occur. The aperture is provided with a narrow sinus. The covering membrane is everywhere kept distended by narrow ridges from the cryptocyst.....*Urceolipora*.
- B. No oœcia, but two different forms of zoœcia are present. The aperture without a sinus, and with an almost straight proximal margin.
- a.* The frontal cryptocyst forms a continuous calcareous surface; the covering membrane is on the frontal, as well as the basal surface, distended by means of rod-shaped processes from the cryptocyst.....*Euthyris*.
- b.* The frontal surface of the cryptocyst is formed by a number of narrow, and only partially meeting ribs; the covering membrane is kept distended only on the basal surface of the colony by means of a wedge-shaped, and projecting central portion of the separate zoœcia.....*Pleurotoichus*.
- C. No oœcia and one form of zoœcium. Aperture without a sinus and with a slightly hollowed proximal margin. The covering membrane is on the frontal as well as the basal surface, kept distended by means of rod-shaped processes from the cryptocyst. An avicularium may be situated to the right or the left of the aperture.....*Neoeuthyris*.

NEOEUTHYRIS WOOSTERI, *MacGillivray*.

(Fig. 1).

*Euthyris woosteri*, MacGillivray, Proc. Roy. Soc. Vict. (n.s.) iii., 1891, p. 77, pl. ix., f. 2. *Il.* Harmer, Q. J. Micr. Sci. (n.s.) xlvii., 2, 1903, p. 268.

Zoœcia slightly calcified, arranged alternately in a longitudinal series, elongate oval in shape, and rounded anteriorly but flattened basally.

Fig 1. *Neoeuthyris woosteri*.

The covering membrane is hyaline, thickly covered with irregularly sized and arranged, minute elevations, and indistinctly marked with longitudinal grooves. Aperture lofty, broadly arched, contracted at the lower third, the proximal margin slightly hollowed. A compound operculum is present. A large avicularium may be situated to the right or the left of the aperture in the majority of the zoecia; it is broad above, with a triangular mandible produced into a downwardly projecting acuminate process. Numerous uniporous rosette-plates are present on the inter-zoecial walls, and the covering membrane is kept distended by chitinous filiform or rod-shaped processes. Oecia absent. Colony encrusting on marine algæ.

*Locality*.—Cooktown, Queensland.

*Paratype* in the Australian Museum (U. 875).

*Obs.* From Levisen's<sup>4</sup> observations on a supposed form of *Euthyris obtecta*, Hincks, in which he mentions that the single form of operculum is present, and remarks that it may be regarded as a new species, I should think that this form described may be referable to *Neoeuthyris*.

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#### ON POLLAPLOECIUM.

In September of last year the Rev. Dr. Thos. Porter of Petersham, N.S.Wales, presented two slides of Bryozoa to the Australian Museum representing, as he contended, a new species of *Pollaploecium*.

The specimens from which these slides were prepared were dredged in Bass Strait by Mr. J. Wilson of North Fitzroy, Victoria, a gentleman to whom microscopical science owes much, and it is with pleasure that I associate his name with this new species.

The genus *Pollaploecium* was created by Maplestone<sup>5</sup> to accommodate his new form from the Gilbert Islands. He remarks on the differences between this and *Diploecium*, but with Kirkpatrick<sup>6</sup> he does not allot his genus to a family. I have not seen *Diploecium*, but my examination of the species about to be described, and the paratype of *P. gilbertensis*, shows that *Pollaploecium* should be accommodated in the family Onchoporidæ according to Levisen's<sup>7</sup> diagnosis:

“The slightly calcified *zoecia*, the frontal surface of which is covered by a closely adhering (chitinous?) membrane, are generally provided with

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<sup>4</sup> Levisen—1. c. p. 273.

<sup>5</sup> Maplestone—Proc. Roy. Soc. Vict., (n.s.) xxi., 2, 1909, p. 417.

<sup>6</sup> Kirkpatrick—Ann. Mag. Nat. Hist., (6) i., 1888, p. 73.

<sup>7</sup> Levisen—1. c. p. 259.

a number of superficial, uni- or multiporous rosette-plates, which are most often situated in the distal part of the zoecium. The distal wall, which is bent from side to side, has a number of uniporous or one multiporous rosette-plate, while the distal half of each lateral wall has a single multiporous plate. No *avicularia*. The strongly projecting hyperstomial *oecia*, the aperture of which may be closed by the zoecial operculum, consist of two membraneous (chitinous?) layers, between which there is a cryptocyst layer, which springs from the distal wall. Free, branched colonies."

The key to the genera of this family, accommodating *Pollaploecium*, is thus presented.

- A. The compensation sac opens outwards through a crescentic ascopore.
- a. The zoecium consists of three different segments, a short proximal, a long stem-like middle, and a widened distal one. The operculum may be compound or simple.....*Calwellia*.
- b. The zoecium does not consist of three different segments.
- ba. A simple operculum. The oecia with two proximal and free rib-like processes .....*Onchopora*.
- bb. A compound operculum. The oecia without free rib-like processes. ....*Onchoporella*.
- B. The compensation sac does not open outwards through a pore, but immediately on the proximal side of the operculum.
- a. Without pores.....*Onchoporoides*.
- b. With pores.....*Pollaploecium*.

*POLLAPLOECIUM WILSONI*, *sp. nov.*

(Fig. 2).

*Polyzoary*.—A free branching colony, made up of internodes of ten to twelve zoecia situated back to back. Internodes connected by short corneous tubes.

*Diagnosis*.—Zoecia pyriform, slightly calcified and covered by a closely adhering membrane. The aperture is directed sideways, semicircular in shape and with a short spine at each side of the hollowed lower border. The frontal surface is covered by large and irregularly placed circular pores, and occasional small spine-like processes. Oecium globose, situated above and continuous with the zoecium, a slight suture showing the line of demarcation. Avicularia absent.

*Colour* (in Canada Balsam) brown.

*Locality*.—Bass Strait, Tasmania.

*Holotype* and *Paratype* in the Australian Museum (U.878 and U.879).

A paratype of *Pollaploecium gilbertensis*, Maplestone, is in the collection of the Australian Museum, and from the following figure and description its differences from *P. Wilsoni* will be seen.

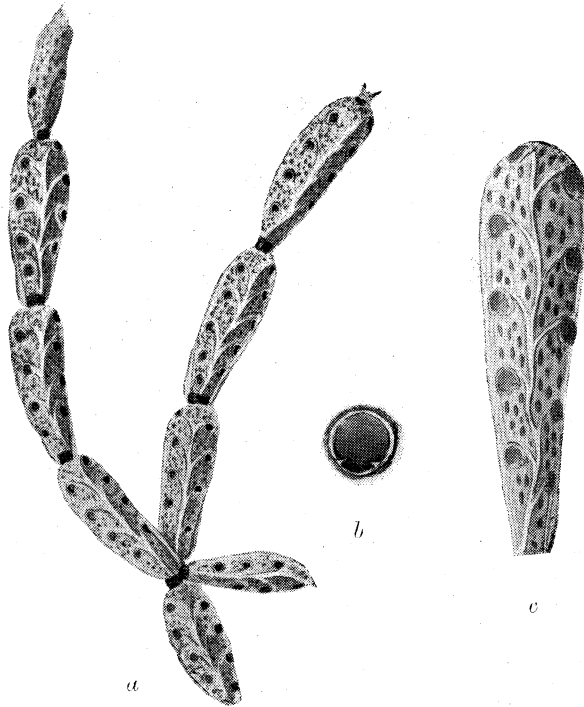


Fig. 2. *Pollaploecium wilsoni*. a Polyzoary enlarged. b Orifice. c Internode cleared and enlarged.

POLLAPLOECIUM GILBERTENSIS, Maplestone.

(Fig. 3).

*Pollaploecium gilbertensis*, Maplestone, Proc. Roy. Soc. Vict., (n.s.) xxi., 2, 1909 p. 417, pl. xxviii., f. 18.

*Polyzoary*.—A free branching colony made up of internodes of from six to ten zoecia situated back to back. Internodes connected by short corneous tubes.

*Diagnosis*.—Zoecia oval or pyriform, ventricose, slightly calcified and covered by a closely adhering membrane. The aperture is strongly

arched above with a straight lower border bearing a deep central sinus. The frontal surface is minutely punctate, but otherwise without decoration.

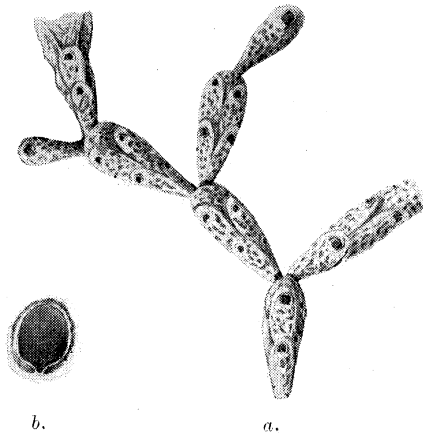


Fig. 3. *Pollaploccium gilbertensis*. a Polyzoary enlarged. b Orifice.

The oöcia are situated above and are continuous with the zoöcia, a slight suture showing the line of demarcation. Avicularia absent.

*Colour* (dry) dirty white.

*Locality*.—Marshall Group, North Pacific Ocean.

*Paratype* in the Australian Museum (U. 877).