

STUDIES ON RECENT PETRALIIDAE (BRYOZOA).

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(Figures 1-19.)

INTRODUCTION.

Tropical and sub-tropical Petraliidae have, within the last decade, assumed considerable prominence. Several authors¹ have remarked upon the unsatisfactory grouping of the species and the lack of accommodation for recently described forms.

To obtain satisfactory characters for subdivision, a study of the skeletal morphology of selected members of this group was undertaken. The author is chiefly indebted to the authorities of the Australian Museum, National Museum (Melbourne), South Australian Museum and United States National Museum for loan and exchange of relevant material, and to Mr. A. A. Livingstone (Assistant Zoologist, Australian Museum), for many helpful suggestions.

For the study of the skeletal morphology, dry specimens were incinerated over a gas flame and fragments were mounted in various positions, dissections being then carried out with the aid of fine needles to display the frontal, lateral and distal walls, the basal lamina and the structures pertaining to radicular insertion. It was found necessary to draw the preparations within the next two or three days, since they began to deteriorate if left much longer.

Family **PETRALIIDAE** Levinsen, 1909.

Petraliidae Levinsen, *Morph. Syst. Stud. Cheil. Bryozoa*, 1909, p. 350.

Petraliidae Levinsen, Canu and Bassler, *U.S. Nat. Museum, Bull.* 100, ix, 1929, p. 250.

Observations.—The author would restrict Petraliidae to include only those species which have a finely-perforated hyperstomial ovicell opening above the normal plane of the zooecial aperture, whose zoarium has some form of radicular attachment, and whose zooecia have an aperture with a pair of cardelles situated close to the proximal rim.

Ecology.

The unilaminate zoaria of all Petraliidae live in situations distinct from those of completely encrusting forms, since their radicles permit attachment to insecure and irregular substrata upon which completely encrusting species could not develop. Hundreds of the brilliant vermilion zoaria of *Mucropetraliella ellerii* (Macgillivray, 1869) have been observed on the reef at Point Leo, Shoreham (Western Port, Vic.), growing over masses of coralline algae or loosely adherent to calcareous sponges,

¹Hastings.—*Sci. Repts. Grt. Barrier Reef Exped.* (1928-29), *Polyzoa*, iv, 12, 1932, p. 435. Levinsen.—*Morph. Syst. Stud. Cheil. Bryozoa*, 1909, p. 351. Livingstone.—*Vidensk. Medd. fra Dansk Naturh. Foren.*, lxxxvii, 1929 p. 76.