

ART. XLVIII.—*On Some Calyptoblast Hydroids from the Kermadec Islands.*

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IN 1908 a small party of naturalists sailed to the Kermadec Islands by the New Zealand Government steamer, and stayed on the islands for about ten months—that is, until the next voyage of the steamer to the islands. During their stay Mr. W. R. B. Oliver, of Christchurch, collected some hydroids, and it is through his kindness that I am able to describe those mentioned below.

There is, as far as I can find, no previous record of any hydroids from this group of islands. From their geographical position it would be supposed that the affinities of the fauna of the group would be mainly with New Zealand, since it lies only about eight hundred miles north-east of Auckland, and this supposition is supported by the few hydroids found. The hydroids of New Zealand itself have not been at all completely examined. The species described prior to 1895 are catalogued by Farquhar in the "Transactions of the New Zealand Institute," vol. 28, p. 459, and to that catalogue I shall refer for all papers and synonyms up to that date.

Since Farquhar's list appeared I can find only the three following papers on hydroids from the New Zealand region: viz., Hilgendorf (Trans. N.Z. Inst., vol. 30, p. 200), Hartlaub (Zool. Jahrbuchern, 1901, p. 349), Benham (Subantarctic Islands of N.Z., p. 306).

Besides the hydroids, the collection as handed to me contained a part of a skeleton of an antipatharian, part of a madreporian coral, several floats of a species of a *Physalia*, one or two *Polyzoa*, and some eggs of molluscs. Most of these, however, were not in a fit state for determination or description. They remain in my hands.

Campanularia caliculata var. *makrogona* (V. Lendenfeld).

(For references and synonyms, see Farquhar, Trans. N.Z. Inst., vol. 28, p. 459).

Hab.—Dunedin Harbour and Wellington Harbour, in New Zealand; Australia; Kermadec Islands (on seaweed, Denham Bay, Sunday Island).

In reference to *Campanularia*, Hartlaub (*loc. cit.*) correctly points out that in my paper in Trans. N.Z. Inst., vol. 30, I was wrong in transferring *Campanularia* and *Eucopella* to *Hypanthea*, since this last genus differs from the others in its reproduction.

Halecium tenellum (Hincks).

H. tenellum Hincks, Ann. Nat. Hist., 3rd ser., vol. 8, p. 252; Brit. Hyd. Zooph., p. 226. *H. labrosum* Alder, Ann. Nat. Hist., 3rd ser., vol. 3, p. 354.

Hab.—England; Australia; Kermadec Islands (on *Polyzoa*, in Denham Bay, Sunday Island).

Two species of this genus have been found in New Zealand, but neither here nor in Australia does the genus seem common. Bale (Cat. Aus. Hyd. Zoophytes, p. 65) says he has a specimen that he thinks is *H. tenellum*, and V. Lendenfeld (Proc. Linn. Soc. N.S.W., ser. 1, vol. 9, p. 405) found specimens at Port Phillip that he was inclined to refer to this species. My specimens were not quite typical, having a great tendency to produce only two cups.

Sertularia minima (Thompson).

(For synonyms and references, see Farquhar, Trans. N.Z. Inst., vol. 28, p. 462; also Hilgendorf, Trans. N.Z. Inst., vol. 30, p. 209.)

Hab.—Timaru and Dunedin, in New Zealand; Australia; Cape of Good Hope; Kermadec Islands (on seaweeds cast up on Denham Bay beach, Sunday Island).

Synthecium elegans (Allman).

(For synonyms and references, see Farquhar, Trans. N.Z. Inst., vol. 28, p. 465; also Hilgendorf, Trans. N.Z. Inst., vol. 30, p. 211.)

Hab.—Bluff, Stewart Island, and Dunedin Harbour (New Zealand); Kermadec Islands (Denham Bay, Sunday Island).

The specimens were growing on the base of an *Aglaophenia*, to be mentioned below.

The interthecal spaces were longer than in previous specimens I have seen, being as long as the thecae measured along the outer curve.

Plumularia setacea (Hincks).

(For synonyms and references, see Farquhar, Trans. N.Z. Inst., vol. 28, p. 466; also Hilgendorf, Trans. N.Z. Inst., vol. 30, p. 214.)

Hab.—Timaru and Dunedin (New Zealand); Australia; Europe; Kermadec Islands (Denham Bay, Sunday Island).

This is a very delicate form of the species, and only about $\frac{1}{4}$ in. high.

Aglaophenia laxa Allman. Figs. 1, 2, 3.

A. laxa Allman, 1876, Journ. Linn. Soc. (Zool.), vol. 12, p. 275.

Hab.—New Zealand; Kermadec Islands (Denham Bay, Sunday Island).

This species seems never to have been seen since Allman found it thirty-four years ago in a collection brought home from New Zealand by Mr. Busk. Allman placed the specimen only provisionally in this genus, owing to his not having seen the corbulae. My specimen showed these structures, and a description is attached.

The whole specimen was creeping over a piece of sponge about 1 in. long and $\frac{1}{2}$ in. wide. It is light brown in colour, and $1\frac{1}{2}$ in. in height. The hydrocaulus is simple and sparingly branched, the sketch in fig. 2 showing the most elaborately branched hydrocaulus found. The corbulae are about as long as one of the pinnae springing from the hydrocaulus. Each corbula consists of a rachis, from which spring about 18 costae, those on one side of the rachis alternating with those on the other. The rachis is jointed for every costa. The costae are narrow, so that the corbula is an open basket closed only by the overfolding of the lateral projections from

the costae. These projections are poorly developed on the proximal two costae, and still more poorly on the distal two. Even on the medial costae the lateral projections are developed on only one side of the proximal portion of each costa, but on both sides of the medial and distal portions. The



FIG. 1.



FIG. 2.

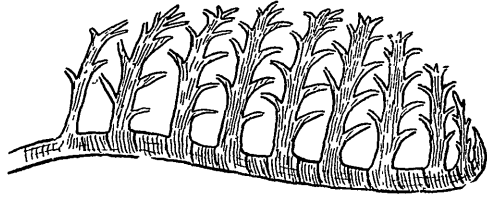


FIG. 3.

- Fig. 1.—*Aglaophenia laxa*; magnified.
 Fig. 2.— „ „ natural size.
 Fig. 3.— „ „ corbula; magnified.

distal ends of the costae from one side of the rachis overlap the distal ends of those from the other side so as to close the corbulae above, and its extremity is closed by the upcurling of the distal end of the rachis. The specimen from which this description is taken is in the Canterbury Museum.

Aglaophenia ? x. Fig. 4.

This specimen is probably an *Aglaophenia*, but it is impossible to tell without the corbulae. I can find no previous description of any form like the one under consideration, and probably the species is new.

Trophosome.—Colony 90 mm. in height, sparingly branched; all the pinnae are in one plane, so that the whole colony is somewhat fan-shaped.

The pinnae are alternate. Colour uniformly brown. Hydrocaulus with two not very distinct nodes to each hydrotheca, one opposite the base and one opposite the bend of the hydrotheca. Hydrothecae close together, not deeply inserted in the hydrocaulus, only slightly bent. The front wall of the hydrothecae bulges considerably below the origin of the intrathecal ridge. The thecostome has two teeth on each side, and none in back or front. The intrathecal ridge springs from only the outer side, and is inclined at about 45° to the hydrocaulus.

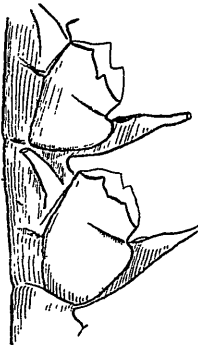


FIG. 4.

Aglaophenia ? x;
 magnified.

The mesial nematophore is very long, and projects for more than half its length clear away from the hydrotheca; it stands almost at right angles to the hydrocaulus; there are basal and terminal openings in this nematophore, but in the upper hydrotheca sketched on fig. 4 the basal opening has been obliterated by faulty drawing. The lateral nematophore is long and strongly bent backwards, reaching more than half-way back over the hydrocaulus.

Gonosome.—Not present.

Hab.—Denham Bay, Sunday Island, Kermadec Islands.

Type in Canterbury Museum, under the name of "*Aglaophenia? x.* Kermadec Islands." It is on the base of this specimen that *Synthecium elegans* is growing.

Aglaophenia? y. Fig. 5.

This is probably another *Aglaophenia*, but, like the last, cannot be identified in the absence of the corbula. It also is probably new.

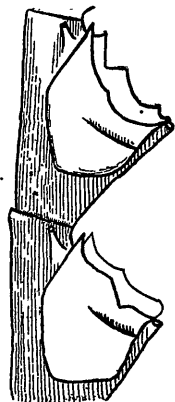


FIG. 5.
Aglaophenia? y;
magnified.

Trophosome.—Colony 80 mm. in height, and probably more, as the specimen is obviously incomplete. The base of the hydrocaulus is 3–4 mm. in thickness, but it is incrustated by *Polyzoa* and the hydrothecae of an undistinguishable hydroid. Colour of the main stem dark brown, and of the pinnae light horn; the whole very much branched, giving a tangled mass of pinnae. The hydrocaulus bearing the hydrothecae is divided into very distinct nodes, one opposite the base of each hydrotheca. The hydrothecae are relatively far apart, almost globular, deeply inserted, and have a distinct bend in the middle; they are much lighter in colour than the hydrocaulus. The thecostome is widely open, and has three teeth on each side. The intrathecal ridge springs from the outer edge. The mesial nematophore is closely applied throughout to whole length to the front wall of the hydrotheca, and opens just at its lip. The lateral

nematophores are short, and directed backwards; they do not reach to the node between the hydrothecae.

Gonosome.—Not present.

Hab.—Cast up on Denham Bay beach, Sunday Island, Kermadec Islands. Type in the Canterbury Museum, under the name of "*Aglaophenia? y.* Kermadec Islands."

The following table shows the distribution of the species :—

—	Kermadecs.	New Zealand.	Australia.	South Africa.	Europe.
<i>Aglaophenia x</i> ..	x	..	..	..	..
<i>Aglaophenia y</i> ..	x	..	..	..	..
<i>Aglaophenia laxa</i> ..	x	x	..	..	..
<i>Synthecium elegans</i> ..	x	x	..	..	..
<i>Campanularia caliculata</i>	x	x	x	..	..
<i>Sertularia minima</i> ..	x	x	x	x	..
<i>Plumularia setacea</i> ..	x	x	x	..	x
<i>Halecium tenellum</i> ..	x	..	x	..	x