

ZOOPHYTOLOGY.

UNDER the above not very scientific term, it is our intention to devote in each number of the Journal one, two, or more plates, as occasion may require, illustrative of new forms belonging to the various classes of animals included under the vague though popularly well understood term of Zoophytes; or, more particularly, of those among them which from their size are necessarily subjects of microscopic research. These are principally the Hydrozoa or Anthozoa hydroida of Dr. Johnston. The Asteroid and Helianthoid divisions, scarcely requiring the microscope for their determination, are not included in our design.

In this department of the Journal we shall give—1. Figures and descriptions of new or hitherto undescribed species from any part of the world, as they may come under our observation or be furnished to us by others. We should therefore be obliged to those who take an interest in this branch of Zoology to aid us by the communication of such observations, with respect to new forms, as they may be desirous of presenting to the world. 2. Observations on the anatomy and physiology, &c., of the creatures comprised in the scope of our design, illustrated or not. And 3. Notices of new species or original observations published elsewhere.

As one very important, if not the most important, object of this undertaking is to assist in the arriving ultimately at some correct notions with respect to the geographical distribution of these creatures—a problem apparently of the most curious kind; it is highly desirable that any localities should be assigned only upon good authority, and, if possible, accompanied with particulars as to the depth, bottom, and nature of the surface upon which the polypidom or polyzoary grows. Specimens for the purpose of representation, or drawings, will be duly preserved and returned.

In the present number we commence with an enumeration of Zoophytes of the two classes of animals above mentioned, collected in the Arctic seas. The majority were brought home by Dr. Sutherland, surgeon to H. M. S. Sophia; others by Sir E. Belcher, in what may perhaps be the last of Arctic voyages; and for two specimens we are indebted to our friend, Mr. C. Peach, whose well-known accuracy is a sufficient guarantee for the correctness of the habitat.

Even in this limited though interesting collection, it will be seen that several new and remarkable forms are contained,

and that other wide-spread species, though extending through the torrid, despise the utmost rigours of the Arctic zone.

The arrangement of the Polyzoa, which it is purposed here to adopt, is that according to which the marine Polyzoa are disposed in the catalogue of those in the British Museum, drawn up by Mr. Busk; the names of already-known species are those there employed, where also figures of every species, and the synonymy will be found.

Class. POLYZOEA.

Order I. P. INFUNDIBULATA.

Sub-order I. CHEILOSTOMATA.

§ 1. Articulata.

§§ 2. Bi-multiserialaria.

1. Fam. SALICORNARIADÆ.

1. Gen. Salicornaria, Cuv.

1. *S. borealis*, n. sp. Pl. I., fig. 1, 2, 3.

Front of cell elongated, slightly contracted below, arched above; surface and raised margin smooth; avicularium on the front of the cell near the bottom; mandible triangular, acute, pointing downwards.

Hab. West Greenland, 73° 20' N. 57° 20' W., 6 to 10 fms. Dr. Sutherland.

A very distinct and well-marked form. The polyzoary, which is composed of club-shaped internodes, varying greatly in size, is irregularly dichotomous, and from one to two inches in height.

Fam. CELLULARIADÆ.

2. Gen. Menipea, Lamx.

1. *M. arctica*, n. sp. Pl. I., fig. 4, 5, 6.

Cells 3—9 in each internode, rhomboidal; aperture oval, contracted below; a marginal spine on each superiorly; central cell at a bifurcation mucronate at the summit. Ovicell smooth.

Hab. W. Greenland, 73° 20' N. 57° 20' W., 6 to 20 fms. Assistance Bay, 74° 50' N. 94° 16' W., 15 fms. Dr. Sutherland.

This species, which at first sight much resembles a Cellularia, differs from all its congeners with which I am acquainted in the absence of any avicularium on the anterior aspect of the cells. The lateral avicularium is also frequently absent, and fragments thus unfurnished could only be distinguished from the genus Cellularia by the rhomboidal form of the back of the cells, and the absence of the perforations which exist on the back of the cells in all species properly belonging to that genus.

Gen. 3. Scrupocellaria.

1. *S. scrupea*? B. M. Cat., p. 24. Pl. XXI., fig. 1, 2.

Hab. Arctic sea. Sir E. Belcher.

The determination of this form having been made from only a very minute specimen, growing on the inside of a valve of *Terebratula psittacea*, is not absolutely certain, but I have little doubt of its correctness.

§ 2. Inarticulata seu continua.

§§ 1. Uniserialaria.

Gen. 4. Hippothoa, Lamx.

1. *H. divaricata*, Lamx. B. M. Cat., p. 30. Pl. XVIII., fig. 3, 4.

Hab. Arctic sea. On valve of *Terebratula psittacea*. Sir E. Belcher.

Fam. MEMBRANIPORIDÆ.

Gen. 5. Membranipora, Johnst.

- 1.
- M. Sophie*
- , n. sp. Pl. I., fig. 7.

An avicularium on either side, on the margin of the aperture. Two marginal spines on either side below the avicularia.

Hab. Assistance Bay (*ut supra*). On fucus. Dr. Sutherland.

The species to which the present form most nearly approaches are—

M. Flemingii, B. M. Cat., p. 58.

M. lineata, Linn.

M. fallax, Fleming.

From the first of these it is distinguished by the position of the avicularia and the number and situation of the marginal spines. From the second by the small number of the spines, and the position of the avicularia. From the third, about whose distinctness Dr. Johnston, as I think erroneously, appears to have doubts, by the number and situation of the avicularia, and the number and situation of the marginal spines. Of the three it most nearly approaches *M. Flemingii*, but I entertain no doubt of its distinctness.

2. *M. Flemingii*. B. M. Cat., p. 58. Pl. LXI., fig. 2; Pl. LXXXIV., fig. 4, 5, 6; Pl. CIV., fig. 2, 3, 4.

Hab. Arctic sea. Sir E. Belcher.

Gen. 6. Lepralia, Johnst.

1. *L. hyalina*, Linn. B. M. Cat., p. 84. Pl. LXXXII., fig. 1, 2, 3; Pl. XCV., fig. 3, 4, 5; Pl. CI., fig. 1, 2.

Hab. Assistance Bay and W. Greenland (*ut supra*). On fucus. 6 to 20 fms.

This species, which is liable to numerous varieties, ranges from the Arctic almost to the Antarctic seas, and abounds in all intermediate latitudes. Its longitudinal range appears to be nearly equally extensive. It occurs, for instance, in the Falkland Islands, *Darwin*; Cape of Good Hope, *Harvey*; California, *Dr. Sinclair*; and is common in the seas of Europe.

2. *L. scutulata*, n. sp. Pl. II., fig. 1, 2.

Cells ovate; a scutiform or ovate space on the front, bounded by a raised line, within which the surface is punctate. Mouth rounded above, lower lip straight; a projecting rostrum below the mouth, sometimes absent. Ovicell

Hab. W. Greenland (*ut supra*). On fucus. Dr. Sutherland.

A very peculiar and distinct form. It is remarkable by the circumstance that the cells gradually diminish in size from the centre to the periphery of the patch formed by the polyzoary.

Fam. ESCHARIDÆ.

Gen. 7. Eschara, Ray.

1. *E. cervicornis*, Ellis and Soland. B. M. Cat. Pl. CIX., fig. 7; Pl. CXIX., fig. 1.

Hab. Arctic sea. Sir E. Belcher.

The fragments collected, which are of some size, indicate that this species flourishes in full vigour in the Arctic ocean.

2. *E.* ? n. sp. ?

Hab. Arctic sea. Sir E. Belcher.

This form, the determination of which has not been made as yet with sufficient certainty, appears to be new. The polyzoary is composed of

slender cylindrical branches. Its description and representation are reserved for a future occasion.

Sub-order II. CYCLOSTOMATA.

Fam. TUBULIPORIDÆ.

1. Gen. Tubulipora, Lamk.

1. *T. ventricosa*, n. sp. Pl. II., fig. 3, 4.

Polyzoarium sub-erect or recumbent attached by a contracted stem, which rapidly expands above into a hollow calcareous vesicle, from which the tubes project irregularly and of various lengths.

Hab. W. Greenland (*ut supra*). On fucus. Dr. Sutherland.

Some of the simple forms of *T. serpens*, or *flabellaris*, might on occasion perhaps be confounded with the present species; but it nevertheless, from comparison of several specimens, appears to me to be quite distinct. The polyzoary, which, though recumbent, is usually wholly unattached above, is about 1-8th of an inch in length. It arises by a contracted portion or stem, which is usually more or less curved or contorted; and speedily expands into a wide ventricose dilatation, in which the upper tubes are immersed for a considerable part of their length. The tubes project irregularly from all parts of the exposed aspect of the polyzoary, and are themselves smooth or faintly ringed with lines of growth, whilst the surface of the vesicular dilatation, which doubtless corresponds with an ovicell, is finely punctate. When perfect the orifice of the tubes exhibits a tooth-like projection on one or two sides.

2. Gen. Discopora, Fleming. Pl. III., fig. 1.

1. *D. ciliata*, n. sp.

Orifice of tubes furnished with numerous slender spines.

Hab. Assistance Bay and W. Greenland. On fucus. Dr. Sutherland.

The figure of this minute species will be given in a subsequent plate. It bears a remote resemblance to *Discopora hispida* (*Tubulipora hispida*, Johnst.), but differs in the numerous slender spines with which the orifice of the tubes is furnished.

Class. HYDROZOA.

Fam. SERTULARIADÆ.

Gen. 1. Sertularia, Linn.

1. *S. polyzonias*? Pl. II., fig. 5, 6.

Hab. Greenland. Peach.

From the small specimen thus characterized, and which is unfurnished with the ovicell, it would appear that this cosmopolite species extends even to the Arctic circle. It seems to abound in all parts of the world.

2. *P. imbricata*, n. sp. Pl. II., fig. 7, 8.

Cells sub-opposite, very close, urceolate, wide and deeply immersed below; contracted and free for a short distance above; margin of mouth slightly raised on each side. Polypidom simply pinnate; pinnæ sometimes forked, long and drooping. Ovicell ?

Hab. Greenland. Peach.

I am unable to reconcile this form with any other, and therefore venture to give it the above designation.