

ZOOPLANTOLOGY.

IN Johnston's 'History of British Zoophytes,' six genera of Vesiculariadan Polyzoa are described, but of which one, *Beania*, is more properly referrible to the cheilostomatous sub-order. To these have subsequently been added two or three others; as *Avenella*, by Sir J. Dalzell, *Mimosella* by the Rev. T. Hincks, and, more recently, a form described under the name *Nolella*, by Mr. Gosse. To this number we have now to add another generic form, new to the British Fauna, and a new species belonging apparently to the established genus *Farrella*, although the characters of that genus, as assigned to it by Van Beneden, will require some modification for its admission.

Order. POLYZOA INFUNDIBULATA.

Sub-order III. CTENOSTOMATA (VESICULARINA).

Fam. 1. VESICULARIADÆ.

§ 2. Polypides without a gizzard.

Gen. 1. *Farrella*, Ehrenberg.

Lagenella, Farre.

Laguncula, Van Beneden.

Char. Cells oblong or tubulous, scattered, arising from a creeping stoloniferous tube.

Farrella gigantea, Busk (n. sp.). Pl. V., figs. 1, 2.

Cells tubulous, sessile, not contracted at the base; tentacles numerous (18—20). Ectocyst flocculent, rendered opaque by imbedded earthy matter.

Hab. Tenby.

This very distinct form is characterized, in the first place, by the comparatively enormous length of the cells, which occasionally exceed 1-10th of an inch in length; and secondly, by the peculiar constitution of the wall or ectocyst. This is not horny and transparent, as in most of the other Vesiculariadians, but appears to be of a soft, flocculent texture, in which is imbedded, as it were, an abundance of earthy matter, apparently derived from the mud in the water in which the creature lives, and consequently composed for the most part of argillaceous and silicious particles. A similar constitution of the ectocyst is observed in *Anguinella palmata*, and may therefore be expected to occur in others of the same family. This peculiarity of the ectocyst, and the extraordinary length of the cells, appear to constitute the chief distinctive characters between *Farrella gigantea* and what I take to be the *Avenella (Farrella) fusca* of Sir J. Dalzell. For specimens

of the latter species I am indebted to Mr. Wyville Thompson; and from one of these, fig. 3, Pl. VI., has been taken for the purpose of comparison; the two having been drawn under the same magnifying power. It should be remarked, however, that the specimen of the latter here figured was in the dry state, and consequently is somewhat distorted. But since these figures were printed I have met with a species of *Farrella*, parasitic upon *Flustra foliacea*, dredged in about 20 fathoms of water off Tenby, which appears to correspond with the *Avenella fusca*, and the examination of which in the living state has satisfied me beyond doubt, that that form and *Farrella gigantea* are quite distinct. In the 'Annals of Nat. Hist.,' 2nd Ser., vol. xvi., p. 35, Plate IV., fig. 29, Mr. Gosse describes and figures a Polyzoan belonging to the same family, under the name of *Nolella*, which would appear closely to approach in some respects, as he himself observes, the *Avenella* of Sir J. Dalzell; and from the semiopacity assigned to the ectocyst, it would also seem to correspond very closely with the form above adverted to, as found upon *Flustra foliacea*. The characters, however, assigned by Mr. Gosse to *Nolella* are apparently sufficient to remove all suspicion of this being the case. He says, that the "cells are erect, subcylindrical, springing singly, but closely from an undefined polymorphous incrusting mat; the tentacles (18) forming a bell." A copy of Mr. Gosse's figure of *N. stipata* is given in Plate V., fig. 4.

What is meant precisely by the expression "undefined, polymorphous incrusting mat," from which the cells spring, is not very clear. In all known Vesiculariadan Polyzoa, except *Anguinella*, the cells spring "singly" from a common tube; and if, as the use of the word "mat" might imply, the "polymorphous crust" is composed of tubes, the character is intelligible enough, and the species in accordance, so far, with its congeners; but if, as the expression might also be taken to convey, and as the figure certainly indicates, this crust is a continuous substance,—the condition is so peculiar as at once to raise the genus in which it is found to the rank of, at least, a distinct family group. It is more probable, however, that upon farther examination Mr. Gosse will find that the cells do really arise from a creeping adnate tube; in which case the genus will fall to the ground, and *Nolella stipata* have to be referred to *Farrella*, with the characters as here modified. If so, it would seem to correspond in all respects with *Avenella fusca*, Dalzell; or, at any rate, with the form occurring in *Flustra foliacea* above noticed, and which, if not the *Avenella*, is apparently as yet undescribed.

Between *Farrella* (*Laguncula*) *elongata*, V. B. (Rech. sur les Bryozoair.), p. 26, Pl. II. (*b*), of which an outline sketch (reduced from the original figure) is given in Plate VI., fig. 4, and *F. gigantea*, the difference is sufficiently obvious. This species has not yet, so far as I am aware, been observed upon the British coast, though it will in all probability be found to be a native.

The only situation in which *F. gigantea* has as yet been met with is in the neighbourhood of Tenby, and there chiefly in a cave in St. Catherine's Isle, which is only open at spring tides. In the autumn of 1854 the walls of this cave were in parts densely covered with this Polyzoan, growing in a close and thick pile, but inconspicuous among the numerous Sponges and minute vermidoms of similar colour and aspect, with which the surface of rock is covered. In the present year, however, the species is far less abundant in the same locality.

The species, as has been said, is remarkable for the gigantic size of the cells, which are often more than 1-10th of an inch in length. The polypide, however, is not beyond the average size in other Polyzoa. It has from 20 to 30 long slender, highly flexible tentacles.

Gen. 2. *Anguinella*, V. B. Rech. sur les Bryoz., p. 58.

Char. Cells tubulous, cylindrical, supported on a common stem (one springing from the base of another).

A. palmata, V. B. Pl. VI., figs. 1, 2.

The only species—

A. palmata, V. Bened. Rech. sur les Bryoz., p. 58. Pl. VII., figs. 18, 24.

Hab. Ostend, Van Beneden; Britain, Busk; River Deben, Suffolk; Tenby; Charleston, S. Carolina, U. S., Harvey.

The very peculiar conformation of the polyzoary in this species at once distinguishes it from all its congeners. It is farther distinguished from most of them by the constitution of the ectocyst, which contains imbedded in a soft, or rather flocculent substance, so large a quantity of argillaceous and silicious matter, that when exposed to the flame of a spirit lamp, it is converted into a kind of red earthenware, retaining its pristine form and dimensions, or nearly so.

It grows to a large size; many tufts or bunches reaching three or four inches in length. It is found on dead or living shells, and on stones, and closely resembles a small *Fucus* covered with mud. This peculiar colour and habit have probably been the reason that it has so long escaped notice on our coasts, where it will, in all probability, be found to

be pretty generally distributed, especially in muddy situations. Its wide distribution in the world is indicated by its occurrence at such a distant locality as South Carolina, the specimens from which in my possession were collected by Dr. Harvey.

In the river Deben, in Suffolk, which is more properly speaking an estuary than a river, scarcely a dead or living oyster-shell can be dredged up which is not covered by it. At Tenby it occurs, very sparingly, in the caves in St. Catherine's Isle.

ZOOPHYTOLOGY.

DESCRIPTION OF FIGURES.

PLATE V.

Fig.

- 1.—*Farrella gigantea*, natural size.
- 2.—The same magnified.
- 3.—Mouth of cell, with the polypide partially extruded.
- 4.—*Noletta stipata*, Gosse.

PLATE VI.

- 1.—*Anguinella palmata* magnified.
- 2.—Portion of cell, with polypide partially extruded.
- 3.—Outline sketch of *Avenella fusca*, which had been dried and compressed.
- 4.—Outline sketch of *Farrella (Laguncula) elongata*, Van Beneden.



