

In the 'Belfast Dredging Com. Report' for 1858, I have recorded this species as *Avenella dilatata*. But the *Avenella* of Sir John Dalycell is a very doubtful genus, and I prefer, for the present, to refer it to *Farrella*, as defined by Mr. Busk, in the 'Micr. Journal,' vol. iv, p. 93.

II. CATALOGUE of the POLYZOA collected by J. Y. JOHNSON, Esq., at MADEIRA, in the years 1859 and 1860, with descriptions of the NEW SPECIES. By G. BUSK, F.R.S.

I. CHEILOSTOMATA.

Fam. 1. CATENICELLIDÆ.

Gen. 1. *Catenicella*, Blainv.

1. *C. elegans*, Bk.

Hab.—Madeira, on fishermen's baskets, abundant, *J. Y. J.*; (?) Mediterranean, *Savigny*; South Africa; Australia; New Zealand.

Fam. 2. SALICORNARIIDÆ, Bk.

Gen. 2. *Salicornaria*, Cuv.

1. *S. Johnsoni*, Bk.

Hab.—Madeira, *J. Y. J.*; Shetland, *Barlee*.

Fam. 3. CELLULARIIDÆ, Bk.

Gen. 3. *Scrupocellaria*, Van Beneden.

1. *S. Maderensis*, n. sp.

Cellulis elongatis; aviculario parvo; orificio ovali, peristomate simplici glabro; operculo suborbiculari glabro integro; spinis marginalibus sex, equidistantibus; ovicellulâ glabrâ non punctatâ.

Cells elongated; avicularium small; orifice oval, peristome simple, not granular; pedunculate operculum sub-orbicular, smooth, entire; six equidistant marginal spines above; ovicell smooth, not perforated.

Hab.—Madeira, *J. Y. J.*

This species differs from *S. pilosa*, Audouin (sp.), in several respects. 1st. In the form of the cell, which in that species is represented as elongated, and of nearly equal diameter throughout, especially as viewed on the dorsal aspect. 2dly. In the disposition of the marginal spines, which in *S. pilosa* are depicted as four on the upper and outer margin, and a single one some distance apart on the inner border of the orifice. 3dly. In the ovicell, which in *S. pilosa* appears to be perforated. They agree somewhat in general aspect, in

the considerable number of spines, in the simple, smooth peristome, and in the form of the pedunculate operculum.

As the only specimen brought on this occasion by Mr. Johnson is small and imperfect, and has moreover been injured since it came under my inspection, I have deferred making a figure of the species until further specimens, as I hope, may enable me to do so with greater advantage.

2. *S. Macandrei*, Bk.

This species may be at once distinguished by the broad, granular peristome, and contracted, sub-orbicular form of the orifice. In the B. M. Cat., I have described and figured it as being usually without marginal spines, but in the present instance it has two or three on the outer and upper margin, and one or sometimes two on the inner. From *S. Delilii*, Aud. (sp.), it is distinguished by the total absence of anterior avicularia. The present species may perhaps be identical with *S. ciliata*, Aud. (sp.) ('Egypt,' pl. xii, fig. 2), but if so, the drawing does not exhibit the granular peristome, nor the toothed, radical tube; and moreover, in that species the lowest marginal spine on the outside is represented as forked.

Fam. 4. CABERIDÆ, Bk.

Gen. 4. *Caberea*, Bk.

1. *C. Boryi*, Audouin.

Thus adding another stage in the progress of this species from the southern hemisphere towards the British Channel.

Fam. 5. SCRUPARIIDÆ, Bk.

Gen. 5. *Scruparia*, Oken.

1. *S. diaphana*, n. sp. Pl. XXXI, figs. 1, 1 a.

Polyzoario libero, suberecto, irregulariter ramoso; cellulis elongatis, diaphanis, antice sparse perforatis; orificio orbiculari, infra sinuato, peristomate valde producto superne emarginato; ramis, cellula parte superiori uno latere surgentibus.

Polyzoarium free, phytoid, sub-erect, irregularly branched; cells elongate, walls transparent, sparsely punctured in front; orifice orbicular, sinuated below, peristome thin, produced, notched above; branches springing from one side of cell at the top.

Hab.—Madeira, abundant, *J. F. J.*

A beautiful and very distinct form. From the extreme transparency of the walls, they appear at first sight as if they were composed simply of a chitinous substance, but when incinerated, sufficient calcareous matter is left perfectly to retain the form of the cell.

From the peculiar delicacy of the walls this species would afford perhaps the best subject yet met with for the study of the living animal in the cheilostome Polyzoa.

Gen. 6. *Ælea*, Lamx.

1. *Æ. truncata*, Bk.

Fam. 6. BICELLARIDÆ, Bk.

Gen. 7. *Bugula*, Oken.

1. *B. gracilis*, Bk.
2. *B. avicularia*, Lk. (sp.)

Fam. 7. FLUSTRIDÆ.

Gen. 8. *Carbasea*, Gray.

1. *C. ligulata*, n. sp. Pl. XXXI, fig. 2.

Polyzoario phytoido, erecto, ramoso, ramis irregularibus, ligulatis, gracilibus, rectis, divaricatis; cellulis, bi-triseriatis, elongatis, fusiformibus, sub-cylindraceis, inferne attenuatis, clausis, poro centrali lunato, et duobus minoribus simplicibus, infra orificium, ornatis, lateribus punctatis, dorso glabro; orificio semicirculari, labio inferiori recto, superiori spinis marginalibus sex munito; ovicellulis, subglobosis erectis, superficie delicatule rugosis.

Polyzoarium phytoid, branched; branches irregular, very slender, straight, divaricate; cells bi-triserial, elongated, fusiform, sub-cylindrical, tapering downwards, closed in front, with a lunate pore in the centre, and two smaller, round, simple pores immediately below the orifice; orifice semi-circular, lower lip straight, upper margin furnished with six spines; ovicell sub-globose, erect, finely wrinkled on the surface; cells smooth and rounded behind.

Hab.—Madeira, J. Y. J.

This very peculiar and well-marked species is at once distinguished from all its congeners by the habit of the polyzoary, which is thoroughly phytoid, except that the branches are all in one plane. At first sight it resembles a fucus or sertularian zoophyte. On the sides of the branches are frequently placed radical tubes, as in several others of the Flustridæ.

Fam. 8. MEMBRANIPORIDÆ.

Gen. 9. *Membranipora*, Blauv.

1. *M. Rosselii*, Aud. (sp.)
- ? 2. *M. Lacroixii*, Aud. (sp.)

I am not quite sure that this form is rightly referred to *M. Lacroixii*, but it so closely resembles that Mediterranean species as to render their identity highly probable. Whether this may be the case or not, there can, however, be no

doubt that the present form is the same as *M. irregularis*, D'Orbigny ('Amer. Mérid.' pl. viii, figs. 5, 6), with which may also, perhaps, be associated the same author's *M. simplex* (ib., figs. 7, 9). The cells are for the most part oval, not contiguous, very irregular in size and position. The margin is granular, and wholly unarmed, and there is no appearance of avicularia in any part of the two or three patches submitted to examination.

The following may be taken, I think, as the synonymy of this protean species:

- M. Lacroixii*, Aud.; Bk.; Alder.
M. irregularis, *M. simplex*? D'Orb.
Frustra distans, Hassall; Johnst.; W. Thompson (Belf.)

3. *M. lineata*, Linn. (sp.)

4. *M. Calpensis*, Bk.

Gen. 10. *Lepralia*, Johnst.

1. Armatae.

a. With oral spines.

1. *L. discoidea*, Bk.

For a full account and corrected character of this species, see Mr. Hincks's observations, *supra*.

2. *L. innominata*, Johnst.

3. *L. radiata*, Moll.

I have some doubts whether these two may not, strange as it may seem, prove to be varieties of each other, in which case Moll's name will, of course, have precedence.

4. *L. porcellana*, n. sp. Pl. XXXI, fig. 3.

Cellulis latis, subrhomboidis, immersis, superficie rugosá, granulósá, nitidá: orificio superne rotundato, infra coarctato, labio inferiori integro, superiori spinis tribus, saepius absentibus, munito; aviculario, mandibulo triangulari acuto superne et ad externum spectante, utroque lateri cellulaeposito.

Cells broad, ovate or rhomboidal, deeply immersed; surface uneven, bossed, granular, polished, porcellanous; orifice rounded above, contracted below, with an entire lower lip, and three marginal spines above, often absent or to be found only on the younger cells; a raised avicularium on each side of the cell, about the middle; the mandible triangular acute, pointing upwards and outwards.

Hab.—Madaira, on shell, *J. Y. J.*

The remarkably polished or porcellanous surface gives the patches formed by this *Lepralia* so peculiar an aspect,

that it may, by that character alone, be at once distinguished. In the younger patches the surface is shining and glossy, and, in this condition, the three marginal spines are usually present; and the outline of the orifice is distinct and free. Very soon, however, the walls appear to thicken, and to become irregularly bossed, especially around the orifice, which is thus lodged in a sort of irregular depression.

5. *L. vulgaris*, Moll.

6. *L. marsupiata*, n. sp. Pl. XXXI, fig. 4.

Cellulis ovatis, superficie granulosa, obscure punctata; orificio semi-circulari, labio inferiori recto, integro, superiori spinis sex validis, articulatis quarum infimis furcatis armato; poro lunato medio infra orificium rostro poculiformi oblecto; ad unum latus cellulæ vibraculo, setâ nigra.

Cells ovate; surface granular, with scattered fine puncta; orifice semi-circular or arched above, lower lip straight, entire; six large articulated spines on the sides and above, the lowermost of which on either side is forked at the extremities; a lunate pore in the middle, a short distance below the orifice, protected below and on the sides by a pouch-like rostrum; a long, slender vibraculum, with a black seta on one side of the cell, towards the upper part.

Hab.—Madeira, on shell, *J. Y. J.*

A very well-marked and beautiful species. The marginal spines are distinctly articulated, as in *L. Gattyæ*, Bk., and one or two others, by a horny substance of a black colour. They are consequently readily broken off.

7. *L. Woodiana*, Bk.

This agrees in all essential characters with *L. Woodiana* of the Crag, and which has been found in the living state in Ireland by Mr. Hincks. The Madeiran specimens, however, differ in some respects, and chiefly in the greater development of the cup-like peristome, and the apparently larger size of the avicularia on the shoulders of the cell. Another difference also may be found in the apparent absence of the series of marginal punctures observable in *L. Woodiana*. If it should prove a distinct species, it will probably be found to coincide with *L. Dutertrei*, Audouin (sp.)

8. *L. sceletos*, Bk.

β. No oral spines.

L. unicornis, Johnst.

10. *L. alba*, Hincks.

11. *L. concinna*, Bk.

2. Inarmatæ.

a. Without oral spines.

12. *L. Mangnevilla*, Aud. Pl. XXXI, fig. 5.

Cellulis ovatis, superne liberis suberectis, crebrè punctatis; orificio superne arcuato infra coarctato, peristomate producto, infundibuliformi in cellulis sterilibus integro in fertilibus superne alte emarginato; ovicecellulâ parvâ, recumbente, immersâ.

Cells ovate, free and sub-erect above, surface uneven, punctured; orifice arched above, contracted towards the lower part, surrounded by a much raised, infundibuliform or sub-tubulose peristome, which is entire in the sterile and deeply emarginate above in the fertile cells; ovicecell small, recumbent, immersed.

Hab.—Madeira, *J. Y. J.*; Mediterranean, *Savigny*.

From a general resemblance to *Savigny's* figure, I venture to refer the present species to *Audouin's L. Mangnevilla*; but at the same time, since some doubt may be entertained on the subject, I have thought it best to give a figure and diagnosis of the Madeiran form.

In the figure, the surface is incorrectly represented more as if it were granular than merely uneven and punctured.

(To be continued.)

ZOOPHYTOLOGY.

DESCRIPTION OF PLATES XXX & XXXI.

PLATE XXX.

Fig.

- 1.—*Membranipora imbellis*. (p. 275.)
- 2.—*Lepralia armata*. (p. 275.)
- 2 a.—Ovicell.
- 3, 3 a.—*L. eximia*. (p. 276.)
- 4.—*L. discoidea*, $\times 25$ diam. (p. 276.)
- 4 a.— „ $\times 50$ diam. (p. 276.)
- 5.—*Cellepora tubigera*? (p. 278.)
- 6.—*Alecto incurvata*. (p. 279.)
- 7.—*Farrella dilatata*. (p. 279.)

PLATE XXXI.

Fig.

- 1.—*Scruparia diaphana*. (p. 281.)
- 2.—*Carbasea ligulata*. (p. 282.)
- 3.—*Lepralia porcellana*. (p. 283.)
- 4.— „ *marsupiala*. (p. 284.)
- 5.— „ *Manguevilla*? (p. 284.)

ZOOPHYTOLOGY.

Plate XXX.

Fig. 2.

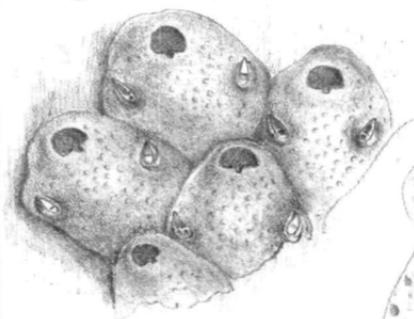


Fig. 2^a



Fig. 3.

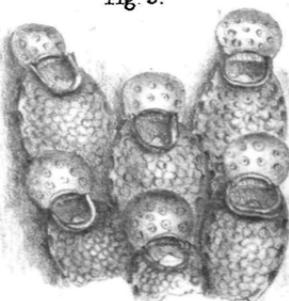


Fig. 3^a



Fig. 5.

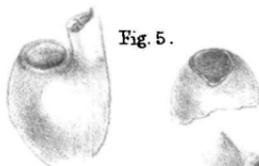


Fig. 4^a

Fig. 4.



Fig. 6.

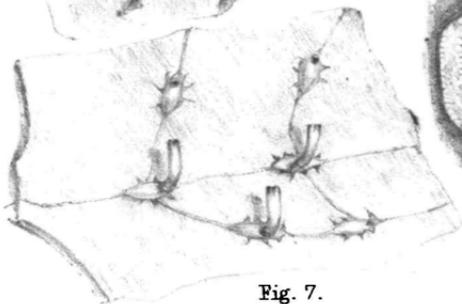


Fig. 7.

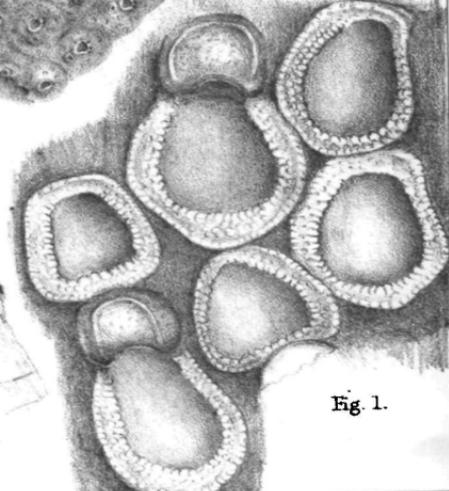


Fig. 1.

ZOOPHYTOLOGY.

Plate XXXI.

