

Algological Notes.

By

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THE following is a list of the most important finds since the report in the last number of this Journal.

NEW TO BRITAIN.

MYXOPHYCEÆ.

Oscillatoria rosea, Crn. (Queen's Ground).

**Symploca atlantica*, Gom. f. *purpurea*, Batt. in lit. (Yealm).

**Hyella caespitosa*, Born. et Flah. var. *nitida*, Batt.

PHÆOPHYCEÆ.

Ralfsia disciformis, Crn. (Yealm).

FLORIDEÆ.

**Acrochaetium endophyticum*, Batt. in lit. (Off west-end of Breakwater).

**Cruoria rosea*, Crn. f. *purpurea*, Batt. (Yealm).

Cruoriopsis cruciata, Duf. (Queen's Ground).

„ *Hauckii*, Batt. (Off west-end of Breakwater).

Peyssonelia rupestris, Crn. (Queen's Ground).

NEW TO PLYMOUTH DISTRICT.

CHLOROPHYCEÆ.

Cladophora hirta, Kütz. (Drake's Island).

PHÆOPHYCEÆ.

Lithoderma fatiscens, Aresch. (plurilocular sporangia, not previously found in Britain.) (Bovisand Bay).

„ *simulans*, (Kuck.) Batt.

FLORIDEÆ.

Acrochaetium microscopicum, Näg. (Andern Point).

Peyssonelia Harveyana, Crn. (Queen's Ground).

Rhododermis elegans, Crn. (Queen's Ground, etc.).

Lithothamnion Strömfeltii, Foslie. (Queen's Ground).

Peyssonelia Rosenvingii, Schm. (Wembury Bay).

Those marked thus * are species, or forms, new to science.

The new species of *Acrochaetium* is interesting on account of the main part of the thallus being endophytic, the sporangia being raised above the surface of its host *Dasya coccinea*, on short one—to a few-celled stalks. This plant therefore occupies a place in the genus *Acrochaetium* similar to that of *Rhodochorton membranaceum* in its genus. The latter plant, however, is not endophytic, but grows within the polypary of various hydrozoa. *A. endophyticum* was described in its barren condition at the Linnean Society's meeting of 19th December, 1895. The sporangia were not found till January, 1896.

Cruoria rosea, Crn. f. *purpurea*, Batt. in lit., is probably only a more advanced stage in the life-history of *Cruoria rosea*, Crn., than had hitherto been recognised. It is so like the figure of Crouan's *Cruoria purpurea* that it would have been identified as such by Mr. Batters and myself but for the fact that our solitary specimen showed several intermediate stages.

Cruoriopsis Hauckii, Batt. in lit., is an interesting member of the Squamariaceæ, dredged off the west end of the Breakwater. The tetraspores showed almost every transition from zonate to cruciate. It most nearly resembles *Cruoriella armorica* of Hauck (non Crouan). As one of the two species bearing the name of *Cruoriella armorica* will have to be re-named, Mr. Batters proposes to call our plant as above.

The other finds do not call for special mention here.

Certain cultivation experiments were carried on which gave interesting results, chiefly with regard to the germination of spores. The most important of these was obtained in the case of *Ahnfeltia plicata*, Fr. The nature of the fructification of this alga had not been satisfactorily cleared up, the late Prof. Fr. Schmitz maintaining that what had hitherto been regarded as the fructifying nemathecium was a parasite. His view, however, while widely accepted by algologists, was opposed by Reinke and others. Specimens of this alga, richly fruited, were placed alone in a glass jar, in sterilised sea-water, on the 1st February, 1896, and after two months (30th March) a very great number of germinated spores, in the shape of small discs, were found on the sides and bottom

of the glass jar. The structure and appearance of these discs was such as to practically leave no doubt that they were early stages in the growth of *Ahnfeltia plicata*, and not of a parasite. As a result of this experiment, I am strongly of opinion that Prof. Fr. Schmitz's genus *Sterrocolax* will have to be sunk, and in this view I am supported by Mr. Batters. Unfortunately, owing to the difficulties of cultivation, I did not succeed in getting the culture beyond the disc stage. As the Royal Society has generously renewed the grant by the aid of which these investigations are being carried on, I hope to repeat the culture, with more success, when the season comes round again.

As part of my investigation, I am studying the attaching discs of the red sea-weeds, or Florideæ, in order to ascertain to what extent the conditions found in *Dumontia filiformis*, Grev., prevail in other species. So far I have found no other alga which shows a mode of development, from an attaching disc, similar to that described for *D. filiformis*. Cf. "On the Development of the Filamentous Thallus of *Dumontia Filiformis*," *Journal of the Linnean Society*—Botany, vol. xxx. A large number of red sea-weeds (*e.g.* Gigartina, Polyides, Stenogramme, Phyllophora, Ahnfeltia) are connected with their attaching discs by a simple parenchyma-like tissue; one or two forms present different and interesting features in the development of the vertical frond from the attaching base, and when their structure is more fully worked out will, in due course, be described and published, but these conditions in no wise resemble what was found to be the case in *D. filiformis*.

The germination of the spores of *Glaeosiphonia capillaris* has yielded interesting results with regard to the mode of formation of the attaching disc. On germinating, the spore sends out a few-celled filament, which by the radiate branching of one or two of the cells forms a well-marked disc.

My friend Mr. Edw. Batters has continued to give me his invaluable aid in the identification of species, &c. Two or three of the above finds are entirely due to him (*e.g.* *Peyssonelia rupestris*, Crn., *Lithothamnion Strömfeltii*, Foslie), he having recognised them in material forwarded from the Laboratory.

The new species and forms will be described by Mr. Batters in the forthcoming number of the *Journal of Botany* (*i.e.* in September).