Algological notices.

By

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Pelvetia canaliculata (L.) Dcne & Thur. f. *radicans* nob.

Through the kindness of dr. J. Hagen I got some specimens of a curious form of the named Alga, collected by him some years ago at Rindenleret not far from Levanger (in the inner part of the Trondhjem-fjord). It grew gregarious in great numbers in shallow pools with clayish bottom and probably brackish water, rather far from the sea but close to a brook called Rindelven, the lower part of the latter being under influence of the tide. It is unknown whether the pools, too, may be under the influence of the tide, but the surrounding ground is at any rate saltish.

The plant is 2—2.5 cm. high, forming extensive and rather interwoven, fastigiate patches. In ramification it coincides with the typical form of the species, but the lower part of the frond is somewhat creeping, provided with more or less numerous rhizoids connecting the particular individuals to one another, and penetrating about 1 cm. into the clay. The branches are sometimes roundish, sometimes and more commonly a little compressed, 0.5—1 mm. broad and 0.3—0.5 mm. thick. The margins are partly bent a little inwards but not distinctly canaliculated as in the typical form.

The specimens were steril when collected in the beginning of May.

The typical form of *Pelvetia canaliculata* is common and abundant at Trondhjem, but I do not know as yet whether it is found as far as the inner part of the fjord.

Later I hope to be able to describe living individuals of this interesting form of a true pelagic Alga, and the locality where it grows. It will be distributed in Hauck et Richter, Phykotheka universalis.

Ralfsia pusilla (Strömf.) nob.

Stragularia pusilla Strömf. in Notarisia 1888, p. 382.

The genus *Stragularia* constituted by Strömfelt (Isl. Algveg. p. 49) differs from *Ralfsia* thereby, that the cell-rows of the thickening layer consist of straight, vertical filaments rising from a single horizontal layer, while in *Ralfsia* the filaments are more or less curved, and the sporangia forms indefinitely extended, finally confluent sori.

The first species described, *Stragularia adhærens* Strömf. Isl. Algveg. p. 49, has proved to be identic with *Ralfsia clavata* (Carm.) Cr. I lately found this species at Trondhjem growing on woodwork in the litoral region, and it seems to be very rare here, bearing sporangia in the middle of October.[1]) It represents an intermediate form between *Ralfsia* and *Stragularia*, however, without doubt most nearly related to the former. Cp. Rke. Algenfl. westl. Ostsee, p. 48, and Atlas, p. 9, t. 5—6.

I agree with Batters, Mar. Alg. Berwick-on-Tweed, p. 67 in regarding *Stragularia* only as a subgenus of *Ralfsia*, but not referring *R. clavata* (and *R. spongiocarpa?*) to the former, as the filaments not seldom are curved and the sori, so far as known never confluent. Cp. Rke. l. c.

The other species referred by Strömfelt l. c. to his genus *Stragularia*, now the type of the named subgenus, the above quoted *Ralfsia (Stragularia) pusilla*, was first found on the leaf of *Laminaria saccharina*, forming small crusts scarcely visible to the naked eye.

I got a *Ralfsia* from F. S. Collins collected at Marblehead, Mass. U. S. A. in April and provided with sporangia, which except as to the mode of growth fully coincides with *R. pusilla*. It sur-

[1]) *Ralfsia verrucosa* (Aresch.) J. Ag. was at the same time found in the neighbourhood forming extensive strata on woodwork and provided with sporangia.

rounds the threads of *Chætomorpha ærea,* sometimes even continuous in a length of up to 15 mm. It bears some few scattered hairs.

Another form probably belonging to the same species has been found by H. H. Gran at Espevær on the south-western coast of Norway. It forms small patches of indefinite shape on old leaves of *Zostera marina* about 0.5—1.5 mm. in diameter and often confluent. In elder crusts the thickening layer is about 50—100 μ high. The plant bears here and there small bundles of hairs. In some of the elder specimens I found young sori, the bearers of the sporangia breaking through the cuticula layer and rather much developed (60—80 μ long), but the sporangia was not yet in development. The plant was collected in the later half of July.

In reference to the size and different shape on different substrate *Ralfsia pusilla* is analogous to *Myrionema strangulans.* It is when growing on *Zostera* not to be separated from the latter without microscopic examination.

The colour of *R. pusilla* also seems to differ rather much. Thus the specimens from Marblehead are almost black in a dryed state, while the mentioned form on *Zostera* from Espevær has a light olive brown colour.

Haplospora globosa Kjellm.?

On an excursion to Munkholmen in the Trondhjem-fjord in the middle of October I found an Alga, which as to its vegetative system most nearly coincides with the quoted species. It grew on a small specimen of *Ceramium diaphanum* fastened to *Zostera marina* in about 2 fathoms water. It is only 1 cm. long and scanty branched, with branches of 2 or seldom 3 orders. The branches of the first order are few in number, but not seldom opposite. These as well as the main axis bear rather numerous but generally very short, scattered branchlets issuing under a right or nearly right angle, or sometimes bent downwards. The greater number of the branchlets are transformed into plurilocular reproductive organs, or bear a terminal one.

The main axis and the branches of the first order are partly

polysiphonous. The cells are, however, mostly divided into a small number of segments, and often very irregular. Sometimes a cell may be divided by an oblique wall into two triangular segments. The topcell of the main axis and those of the branches of the first order are not seldom divided by a longitudinal wall into two segments, each of them bearing a terminate plurilocular reproductive organ or a branchlet, or the one a reproductive organ and the other a branchlet.

The main axis is about 40 μ thick, the branches of the first and second order gradually thinner.

The plurilocular reproductive organs much resemble those in *Scaphospora speciosa* Kjellm. They appear scattered on the main axis and branches of the first order, partly terminate, partly and more often sessile on a wart-like prominence. They are very different in shape, subcylindrical or more common cylindric-conical, spool-shaped or clavate, and sometimes much contracted in the middle, 35—155 μ long and 25—45 μ thick.

Plurilocular reproductive organs have not with certainty been found in *Haplospora globosa*, and I am not sure whether the specimen in question may be referred to the named species, or perhaps to *Scaphospora speciosa*. However, the latter has always been found with unilocular reproductive organs on the same individuals bearing plurilocular ones.

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