

usually almost globular development-stages that live in symbiosis with various animals, and, in particular, with radiolaria. Of these radiolaria, which would seem from Brandt's investigations to derive special benefit from the assimilation-products of algæ, we occasionally get the colony-forming species and Acanthometridæ in such myriads among the surface-layers, that they contribute a very large proportion of the organic substance produced. I have previously stated that the brown algæ also regularly associate with a whole series of Dinophysidæ. Another family of brown flagellates includes the species of *Phæocystis*, which form large colonies visible to the naked eye, and enveloped in a loose slime (see Fig. 240). In cold waters these have actually

Brandt.

been known to occur in sufficient numbers to stop up the meshes of silk nets, and render them ineffective in working.<sup>1</sup>

It is the brown algæ that, properly speaking, characterise the plant-world of the sea. Still there are two other important series, the cyanophyceæ and the chlorophyceæ, which preponderate in fresh water, and are, no doubt, represented in salt water also, though by only a few species.

The Cyanophyceæ are chiefly to be met with in warmer seas, if we except the brackish water forms that may be found along the coasts

Cyanophyceæ.

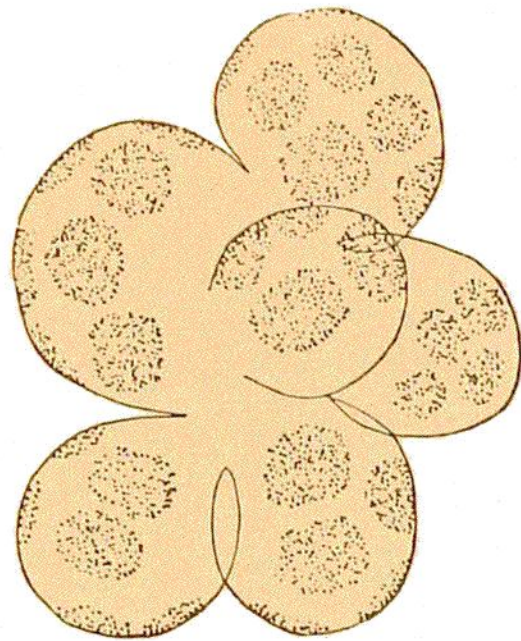


FIG. 240.—*PHÆOCYSTIS POUCHETI*.  
(Lagerheim.)

of North Europe in the height of the summer. The genus *Trichodesmium* appears as clusters of threads, composed of brownish-yellow or red cells, which are either parallel to one another, or twisted together, or matted and tangled, and radiating in all directions. Wille, who described these forms collected by the German Plankton Expedition in 1889, showed that all the types may belong to the same species, *Trichodesmium thiebaulti*, under different development-forms. The clusters may be seen sometimes when they collect near the surface in calm weather, and resemble yellowish-brown snowflakes. Like the different kinds of fresh-water forms, they can raise themselves in the water by means of vacuoles that, according to Klebahn, contain air. When abundant they sometimes

*Trichodesmium*.

Wille.

Klebahn

<sup>1</sup> See Summary of Results Chall. Exp., p. 499, 1895.