

CHAPTER VI

PELAGIC PLANT LIFE

NOT many years have elapsed since the scientific world became aware that the sea contains plants in abundance floating on and beneath its surface, and that they build up the organic substances upon which marine animals depend. In the open sea the plants are too minute to be detected without the microscope; so that, until this instrument came to be regularly employed by biologists, it was impossible to know anything about them. Historical introduction.

The first to use the microscope for studying unicellular organisms in the sea was the celebrated Danish zoologist, O. F. Müller, who, in 1777, described one of the most important plants of our northern waters, namely, *Ceratium tripos*. He was succeeded by the microscopist Ehrenberg, who laid the foundation of our knowledge regarding the multiplicity of forms, their wide distribution, and their significance in the economy of nature; and also discovered the coverings of diatoms together with coccoliths and the skeletons of various unicellular animals (radiolaria, foraminifera) in deposits on the sea-bottom and in geological strata from previous ages. Ehrenberg aroused interest by pointing out the wonderful structure of these coverings, and improvements in the microscope have resulted in fresh wonders being disclosed, which have induced quite a number of capable amateurs to take up the study of diatoms. O. F. Müller.
Ehrenberg.

Classification of these algæ dates from about the middle of the nineteenth century. It is based on the shape and structure of the cell-wall, less attention having been given to the living contents and to the biology. The pelagic forms have as a rule thinner coverings, and a more indistinct structure, than the robust species nearer the coast, and have therefore been less studied. However, occasional samples have now and then been collected from the surface with nets, and researches have been carried out by J. W. Bailey in the waters off Kamchatka, by Brightwell along Bailey.
Brightwell.