

shallower waters. *Halosphæra* is oceanic, and so also are the species of *Trichodesmium*; but there are several blue-green species that are brackish-water forms, and they must of course be accounted neritic (*Anabæna baltica*, *Nodularia spumigena*, *Aphanizomenon flos-aquæ*).

Several of the neritic algæ practically only occur locally. *Detonula cystifera*, for instance, appears in the Limfjord in Denmark and along the south coast of Norway, while *Lithodesmium undulatum*, *Coscinodiscus granii*, *Navicula membranacea*, and *Streptotheca thamensis* belong to the English Channel and to the southern portion of the North Sea. I could mention additional examples, but the greater number of them are far more widely distributed. It has been found possible to allocate all the species along the coasts of the Northern Atlantic to three comprehensive main groups, namely, the arctic, temperate, and tropical. This is perhaps rather an arbitrary arrangement, as these groups encroach to a very great extent upon one another; so that we get northern forms a long way south in the winter, and in the autumn the southern forms extend northwards. Further researches, too, might result in a stricter classification, while it is known that there are species which, biologically speaking, unite the groups, and might with equal reason be assigned to the one or to the other.

(1) *Arctic neritic species* are mainly those which Cleve termed Sira-plankton, and consist principally of diatoms. The characteristic forms are the species of *Thalassiosira* from which this name was derived. They are composed of long strings of short cylindrical cells united by a central thread of slime. *Thalassiosira hyalina* has its southernmost limit off the north of Norway, while *T. gravida* and *T. nordenskioldii* occur in winter as far south as Central Europe. A series of species belonging to the genera *Fragilaria*, *Achnantes*, *Navicula* and *Amphiprora* are also distinctly arctic forms, and are characterised by having their cells bound together like ribbons. These include *Fragilaria oceanica*, *F. islandica* and *F. cylindrus*, *Achnantes tæniata*, *Navicula septentrionalis*, *N. vanhoeffenii* and *N. granii*, and *Amphiprora hyperborea*. The usually predominant genus *Chætoceras* is only represented by two purely arctic species, namely, *Chætoceras furcellatum* and *C. mitra*. We must likewise add the well-known *Biddulphia aurita*. Besides these diatoms, there are the peridinean *Gonyaulax triacantha*, and the brown flagellate *Phæocystis poucheti*, with its naked cells in large slimy round or lobate colonies.

Arctic neritic species.

(2) *Temperate neritic species* are even more numerous. The warmth-loving species fall under Cleve's designation of Didymus-plankton, with *Chætoceras didymum* as the most characteristic form. It is, however, a better arrangement, perhaps, to associate with them a series of other species with a slightly more northerly character, that cannot be really

Temperate neritic species.