

species and varieties of the genera *Peridinium* and *Gonyaulax* might be employed with equal advantage, but they are more difficult to determine, and so little studied as yet that the determinations of Hensen and Karsten are unserviceable. Owing to so little being known about their distribution, I have decided to ignore them for the present.

The oceanic species may also be divided into three main groups:—

(1) *Arctic forms*, corresponding to Cleve's Tricho-plankton and Chæto-plankton. Most of them occur also in antarctic waters. Arctic oceanic species.

Diatoms: *Thalassiothrix longissima*, *Coscinodiscus subbulliens*, *Chætoceras criophilum*, *C. boreale*, *C. convolutum*, *C. atlanticum*, *C. decipiens*, *Rhizosolenia hebetata* (*semispina*), *Nitzschia seriata*.

Peridineæ: *Ceratium arcticum*, *C. longipes*, *Dinophysis granulata*.

(2) *Temperate-Atlantic forms*, corresponding to Cleve's Styli-plankton and Tripos-plankton. The latter of these two designations comprises a small community of species, which are less exacting as regards salinity, and are therefore produced in quantities along the coasts of North Europe. Temperate oceanic species.

Diatoms: *Rhizosolenia styliiformis*, *R. acuminata*, *R. alata*, *Coscinodiscus radiatus*, *C. centralis*, *C. stellaris*, *Chætoceras densum*, *C. dichæta*, *Corethron criophilum*, *Dactyliosolen antarcticus*, *Thalassiosira subtilis*, *Coscinosira æstrupi*, *Asteromphalus heptactis*, *Bacteriastrum delicatulum*, *B. elongatum*.

Peridineæ: *Ceratium tripos*, *C. bucephalum*, *C. azoricum*, *C. macroceros*, *C. intermedium*, *C. lamellicorne*, *C. reticulatum*, *C. fusus*, *C. furca*, *C. lineatum*, *Dinophysis acuta*, *D. hastata*, *D. homunculus*.

Coccolithophoridæ: *Coccolithophora pelagica*, *Pontosphæra huxleyi*.

Chlorophyceæ: *Halosphæra viridis*.

(3) *Tropical-Atlantic forms*, corresponding to Cleve's Desmo-plankton, and comprising a series of species, especially peridineæ and coccolithophoridæ. Cleve's guiding form is the blue-green alga *Trichodesmium thiebaultii*. The following are some of the commonest:— Tropical oceanic species.

Diatoms: *Coscinodiscus rex*, *Planktoniella sol*, *Gosleriella tropica* (see Fig. 245), *Rhizosolenia castracanei*, *Chætoceras coarctatum*, *Asterolampra marylandica*, *A. rotula*.

Peridineæ: species of *Ceratium* of all groups (*prælongum*, *cephalotum*, *gravidum*, *candelabrum*, *pennatum*, *extensum*, *palmatum*, *massiliense*, *carriense*, and several others), species of *Oxytoxum* and *Podolampas*, *Ceratocorys horrida*, species of *Phalacroma*, *Dinophysis schütti* and *D. uracantha*, species of *Amphisolenia* and *Triposolenia*, *Ornithocercus magnificus*, *O. quadratus*, *O. steinii* and *O. splendidus*, *Pyrocystis noctiluca* and *P. fusiformis*.

Coccolithophoridæ: *Coccolithophora leptopora*, species of *Syracosphæra*, *Calciosolenia murrayi*, *Michaelsarsia elegans*, and many others.

The boundaries of the areas populated by these communities of species are as variable as the limits of distribution for the