

the Equator; from thence northwards, light variable winds were experienced to the 10th parallel, but north of that parallel a fresh N.N.W. breeze was experienced, which obliged the vessel to stand off on the starboard tack. As the distance from the shore increased, the direction of the wind altered to the northward and N.N.E., which enabled the ship to fetch Porto Praya on the 16th April. On the 10th a very fine water-spout was observed some miles from the ship.

On this trip three dredgings, four soundings, and eight serial temperatures were obtained. The depths ranged from 2010 fathoms to 2450 fathoms, and the deposit in each case was a Globigerina ooze, containing 94 per cent. of carbonate of lime in the former and 65 per cent. in the latter depth. Only one or two small fragments of Pteropod shells were observed in these deposits, in which the carbonate of lime consisted chiefly of the shells of pelagic Foraminifera, Coccoliths, and Rhabdolites. The remains of siliceous organisms did not make up more than 1 per cent. of the whole deposit. The mineral particles were exceedingly minute, and consisted of fragments of felspars, hornblende, augite, and magnetite.

During a few days when the weather was calm there was an extraordinary abundance of life on the surface. Oscillatoria covered the sea for miles, and vast numbers of Radiolaria, belonging to the genus *Collozoum*, which contains all the skeletonless Radiolarian colonies, were taken in the nets. The Foraminifera, belonging to the genera *Pulvinulina*, *Pullenia*, *Sphaeroidina*, and *Globigerina*, were very large and very numerous on the surface, and their dead shells made up the principal part of the deposit at the bottom.

*Pelagic Diatoms.*—Conte Abate Francesco Castracane, who is engaged in the preparation of a Report on the pelagic Diatoms collected by the Expedition, writes:—

“Although the study of the pelagic Diatoms collected by the surface net during the voyage of the Challenger has not led me to any noteworthy general deductions, nevertheless I have made a large number of observations which will greatly increase our knowledge of the biology and morphology of these interesting forms.

“I tried to ascertain whether there existed any laws governing the geographical distribution of Diatoms, but the result was almost *nil*. I found not a few forms common to gatherings made in portions of the sea separated by enormous distances from each other, and these I regard as cosmopolitan; nor is this to be wondered at when it is remembered that the different oceans communicate with each other, and that the action of currents constantly tends to mix the various floras.

“The Antarctic flora has, however, yielded forms of Diatoms, for which new genera must be constituted, such as *Dactyliosolen*, related to *Rhizosolenia*, and *Coretron*, a new type of *Chatoceros*, which have not been found hitherto either in the Arctic waters or in any other seas. But do we know the Arctic and Antarctic floras with sufficient accuracy to be able to speak with authority upon their differences?

“The study of the surface collections has established the distinction between the