

ure and mode of nutrition that they should do so. What may be their extreme limit I am not prepared to say; some straggling plants may occur at much greater depths, but certainly what is usually understood by *vegetation* is practically limited to depths under 100 fathoms. Very few of the higher Algæ live even occasionally on the surface of the sea. The notable exception is the gulf-weed (*Sargassum bacciferum*), which scatters its feathery islets over vast areas of warm, still water, and affords rest and shelter to the peculiar nomadic fauna to which I have already alluded (vol. i., p. 180, etc.).

Confervoids and unicellular Algæ occur, however, frequently, and sometimes in such profusion as to discolor the water over an area of many miles. If Diatoms are to be regarded as plants, these are found abundantly on the surface, more particularly where the specific gravity of the water is comparatively low. The frustules of Diatoms occur in all the deep-sea deposits in greater or less number; and in some places, as at a few of the stations in the Indian Ocean, they form the bulk of the sample brought up by the sounding-machine. Over the area occupied by this siliceous deposit, the higher fauna were found to consist mainly of forms with but little carbonate of lime entering into the composition of their tests, such as very thin-shelled irregular urchins, and especially an abundance of Holothuridea. These were often modified in a singular way; the perisom was reduced to a mere membrane, and the stomach and intestine were expanded so as to occupy nearly the whole of the body-cavity; and distended with the "diatom ooze" so completely that the animal looked like a thin transparent bag filled with it. There can be little doubt that the diatoms sink to the bottom still retaining a small portion of their organic matter, which is slowly extracted by the alimentary canal of the Holothurid.

Radiolarians were met with throughout the whole of the Atlantic; and often in great abundance, the sea being not unfre-