below 100 metres was extremely scanty. The maximum in the ocean nearly always lay at about 50 metres, which is what Lohmann also found in the case of the Mediterranean coccolithophoridæ. At the surface there was less than down in the 20 to 50 metres zone, though the plankton nearly always approached its maximum value as soon as we reached a depth of 10 to 20 metres. At 75 metres the quantity diminished to about half of that found at 50 metres, and at 100 metres it had dwindled to at most a fifth. These were the values on our southern section. On the northern crossing the quantity of plankton fell away even more rapidly as we went deeper down; at Station 92, where there was a slight admixture of coast-water near the surface, and the lighter surface layer was separated from the pure Atlantic water somewhere between 25 and 40 metres, there were upwards of 250,000 plant cells per litre in the surface layer; whereas at 50 metres the plankton was less abundant than at any of our previous stations, and only amounted to 2213 cells per litre.

Schimper's observations in the Antarctic.

These results quite bear out the most valuable investigations so far made regarding the vertical distribution of algæ in the ocean, namely Schimper's observations in the Antarctic during the "Valdivia" Expedition. He found that the entire production was practically limited to the uppermost 200 metres, that the bulk was to be found above 100 metres, and that the maximum lay between 20 and 80 metres, or to be more precise, between 40 and 60 metres. We were able to confirm this, after comparing the volume of the samples taken with nets on those few occasions when there was a sufficiently large quantity of plankton at our stations to make such volume-measurements of any real value. There was, however, a different vertical distribution everywhere along the coasts where diatoms abounded, for then the exuberant plant production was limited to the surface layer, which was mixed with fresh water from the land.

Number of individual plant-cells at 50 and 75 metres at Station 64.

As illustrating our investigations at a station in the warmest part of the Atlantic, I give particulars of what I found at Station 64 (lat. 34° 44′ N., long. 47° 52′ W.) in water-samples from 50 metres (150 c.c.) and 75 metres (300 c.c.). The figures denote the number of individuals per litre.