

figures, denoting the number of living cells in every litre of surface-water near Dröbak :—

1907.	27/III.	30/III.	2/IV.	9/IV.	15/IV.	20/IV.	4/V.	6/V.	1/VI.	19/VI.
<i>Chetoceras constrictum</i>	20,850	45,850	12,750	59,730	760	44,425	192,500	95,480	1280	0

A quite satisfactory explanation presented itself, however, for the variations turned out to be closely connected with the direction of the winds and currents. The outflowing current in the surface-layers might reduce the quantity of plankton to a mere fraction of the normal amount in the course of a day or two, while the inflowing current might perhaps double the quantity in a few hours. The current exerts so great an influence because the abundant plant life is limited to a thin surface-layer which is sharply differentiated both in salinity and temperature from the water-masses below. On 28th March 1907, for instance, the temperature from the surface down to 20 metres was 2.6°–3.6° C., and the quantity of chlorine worked out at 16.74–17.62 per thousand; from 40 metres down to the bottom at 80 metres the temperature was 6.2° C., and the quantity of chlorine was 18.73 per thousand. The outflowing current carries the surface-layers with their algæ out of the fjord, and the infertile deep water may be sucked up to perhaps 5 metres below the surface. The inflowing current, on the other hand, heaps up the fertile surface-waters. We found, on examining the plankton at different depths, that the bulk of the plants was limited to a very thin surface layer, say 5 metres in depth, after the current had set outwards, whereas subsequent to the inflow of the current they were as abundant down to 30 or 35 metres as at the surface.

At a place like this it was difficult to trace any regular connection between the local conditions of existence and the development of plankton-algæ, in view of the fact that currents caused variations of even greater extent than those actually due to conditions of existence. We had therefore to conduct our investigations on other lines. Supposing it were possible to determine the rate of growth of the algæ we should get a better measure of production, and probably also of the influence due to vital conditions, than variations in the total amount could give us. The number of individuals at any given moment depends not merely upon the rate at which production has