

and viscosity occurs. Especially convincing is the fact that although this rise occurs at very different depths in the three localities mentioned, the increase in the volume of small organisms captured in the nets in every case coincides with the rise in the specific gravity.

An important point for our conception of the animal life of the Atlantic is that the greatest volume of pelagic crustacea has never been found in the upper 100 or 200 metres, where the production of minute plants takes place; the great majority of small pelagic crustacea live everywhere in the deeper intermediate layers. The examples cited above show further that the volume of organisms captured differs greatly in corresponding depths at the different stations, being strikingly small in the Sargasso Sea compared with the boreal waters off Newfoundland and the southern part of the Norwegian Sea.

All these investigations indicate the quantity of organisms present only at the moment of examination. We cannot, from our results, conclude that similar conditions always prevail, nor that the aggregate quantities of food-animals which live and

die during the year are proportionate to the quantities found at a given moment in the different localities. The quantity of food-animals changes first according to seasons and second according to the intensity of production, but very little is known about these two important factors. Only in restricted areas of the coastal waters have attempts been made to investigate these questions systematically at different seasons, and at present we can only compare the conditions found in different localities. Such comparisons have led us to recognise a vast difference between boreal and subtropical conditions, which we may with advantage consider separately.

The boreal waters are mainly characterised by great seasonal changes. We have previously noted the great seasonal changes in temperature principally in the surface layers where pelagic plants are produced. A no less important part is played by the changes in light intensity from summer to winter

Seasonal changes in the abundance of minute crustacea.

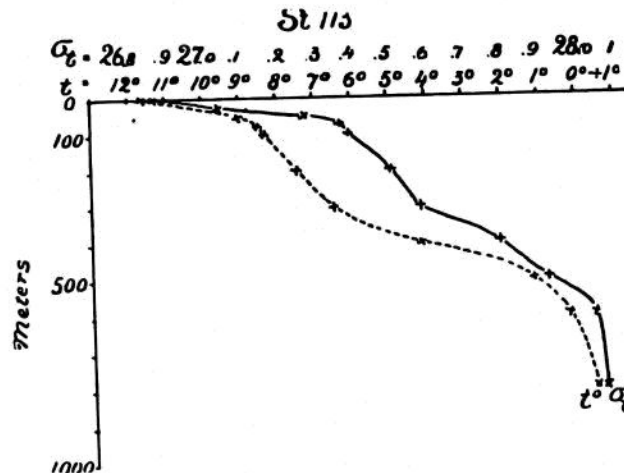


FIG. 519.—CURVES OF TEMPERATURE (t°) AND SPECIFIC GRAVITY (σ_t), STATION 113. (North of Wyville Thomson Ridge.)