

of harling, like the mackerel fishery in the North Sea. It is carried on only during the day, some of the fish weighing over thirty pounds. This is the only fishery I know of in the open ocean over deep water and away from the coast banks, and the species captured visit the coast banks, at all events, some time during the year.

Among pelagic fishes, however, the sardine is the most important to the fisheries on the Atlantic coast banks, and it is captured in the same area as the Atlantic bottom fish, *i.e.* from the Channel along the coasts of Spain and Portugal and Africa. The sardine, the bonito, and the tunny are here probably the only Atlantic pelagic species of economic importance.

### B. THE NORTHERN PELAGIC COMMUNITIES

In the ocean we find no sharply defined border between the animal-communities belonging respectively to the tropics and the polar seas; on the contrary, there are numerous transitions between the extreme conditions of life peculiar to the tropics and the polar regions. It is therefore difficult to classify the communities, and this difficulty is intensified by the fact that most records note merely the occurrence or non-occurrence of certain organisms and not their quantitative occurrence—a vital point in discussing questions of distribution. If I attempt to separate the genuine Atlantic from the northern pelagic animal-communities, it is because I feel that in this way we shall actually gain a better conception of their main features. I believe that a division of this kind will coincide generally with the limit drawn between the areas of distribution peculiar to the southern and northern bottom fish on the Atlantic coast banks, *viz.* the isotherm of 10° C. at 100 metres, running from the Channel, south of Ireland, skirting the south coast of Iceland, and thence to the United States.

Among northern communities it is impossible to separate oceanic and coastal communities so sharply as among Atlantic communities, probably because northern communities are chiefly restricted to comparatively small areas, and the substances carried from the land vary in quantity and quality, giving rise to corresponding variations in the food supply. Neither is the vertical distribution so easily defined as in the Atlantic, certain species having a very different vertical distribution in different areas.

It is extremely important for a true conception of the