

of typical surface fish (Scopelidæ, young fish), besides the silvery fishes of the intermediate layer, the Sternoptychidæ and the Stomiatidæ found mainly between 150 and 500 metres, live just in the specifically light and thin water-layers (see Fig. 526, representing an adult *Argyropelecus hemigymnus*, only 34 millimetres long, but with almost ripe ovaries). Excepting the long ribbon-like Trachypteridæ, *Regalecus glesne*, etc., these minute fishes are, as far as we know, the principal if not the only ones peculiar to these light water-layers. In the surface-layers it is possible to recognise three distinct types: (1) the minute Scopelidæ; (2) the larger oily fish like the sunfish; and (3) the species which live near solid floating objects, such as the Sargasso fish.

One meets exceedingly few large fish in the ocean belonging to the good swimmers, for instance, mackerels, pilot fish, swordfish, and sharks. Little is really known about the distribution of all these, but several of them spend at least some part of their lives in coast waters.

Boreal
pelagic life.

A comparison of the fauna of the Norwegian Sea and that of the Atlantic is very interesting. We have seen in Chapter IX. that numerous fishes which live mainly in the Atlantic have been found in the Norwegian Sea as very rare visitors. From the notes of Professor Collett, covering many decades, I have given a list (see p. 643) recording the frequency of the occurrence of these Atlantic forms. The most remarkable feature is the fact that most of them have been found at the very surface, or have drifted ashore and have been found stranded on the beach. Among these fishes there are several species, for instance those belonging to the genus *Argyropelecus*, which live at 300 metres in the Atlantic and have not been captured at these depths in the Norwegian Sea. Figs. 504-506 show that the lines of temperature, specific gravity, and viscosity situated in 300 to 500 metres in the Sargasso Sea rise up to the very surface as we approach the Norwegian Sea. In this direction the Gulf Stream runs, at all events in the northern part of the section.

The facts pertaining to the occurrence of boreal species in the Atlantic are just the reverse. In Chapter IX. we have learnt that on our track from Newfoundland to Ireland we found boreal species, *Clione limacina*, *Aglantha*, *Calanus*, *Euchaeta*, and several others, at depths between 750 and 1000 metres, while in the Sargasso Sea we took *Calanus hyperboreus* and *Euchaeta* at 1000 metres. At these depths we find the same specific