

Sailors know well the sky-blue colours peculiar to the tropical surface forms. Herring-fishermen also know that the blackish-brown back of the herring is almost invisible from above, and only when occupying a slanting position or making a sudden turn does the herring become visible, its mirror-like sides emitting a silvery flash. The deep-sea fishermen are equally acquainted with the dark, black, brown, violet, or red colours peculiar to deep-sea animals. No scientist can claim the discovery of these phenomena, which are as well known as the colours of the ocean itself.

When considering the peculiar colours of marine animals, and their variation in different surroundings, many naturalists concluded that the colouring was due to their attempts to adapt themselves to the colours of their surroundings, in order to make themselves invisible or to protect themselves against enemies, just as is supposed to be the case with the land fauna.

This idea requires confirmation by acquiring more exact knowledge as to the conditions of light and the colours of animals from similar depths. Our knowledge regarding the penetration of light in the ocean has been as deficient as our knowledge of the vertical distribution of the animals, and the whole subject has thus been a matter of suppositions and ideas rather than of actual knowledge.

During the Atlantic cruise of the "Michael Sars" we investigated the intensity of light at different depths and also the colours of the animals. The results obtained by the photometer at a few stations in the Sargasso Sea are referred to on pp. 251-2. On a sunny day when the water was perfectly clear and transparent, light-rays of all colours, but very few red rays, were observed at a depth of 100 metres. At 500 metres the light acted strongly on the photographic plates, especially the blue rays, but the green rays were absent; even at 1000 metres the influence of the sunlight could be traced on the plates, but at 1700 metres no influence was noticeable.

Penetration
of light.

As we have seen in Chapter IX. the different water-layers in the Sargasso Sea contain animals of very different colouring, certain general features in the colouring being easily recognisable in certain regions. In the hauls from 500 to 750 metres and deeper we found only black fishes and red crustaceans (prawns). At 300 metres we found the laterally compressed Sternopychidæ with silvery sides and brownish backs. In the upper layers we met with transparent young fish, for instance leptocephali, or silvery Scopelidæ and blue flying-fish.

Animals of
the Sargasso
Sea.