

2. THE GEOGRAPHICAL DISTRIBUTION OF BOTTOM-FISHES IN THE NORTH ATLANTIC

THE FISHES OF THE ABYSSAL PLAIN¹

In Chapter IV. the areas of the ocean-floor at different depths are given, the percentages being as follows:—

Areas shallower than	100 fathoms	=	7.0 %		
„ between 100 and	500	„ =	5.6 %	or 1.4 %	per 100 fathoms.
„ „ 500	1000	„ =	3.0 %	or 0.6 %	„ 100 „
„ „ 1000	2000	„ =	19.3 %	or 1.9 %	„ 100 „
„ „ 2000	3000	„ =	58.4 %	or 5.8 %	„ 100 „
„ deeper than	3000	„ =	6.7 %		

About two-thirds of the sea-floor is thus covered by more than 2000 fathoms (or 3600 metres) of water, forming an abyssal plain $90\frac{1}{2}$ millions of square English miles in extent, or nearly half the surface of the earth.

What organisms inhabit this abyssal plain? When studying the literature of deep-sea expeditions, we must remember that all the hauls hitherto made in the abyssal area have been effected by means of trawls or dredges, which function not only while being towed along the bottom, but also while being lowered and raised, filtering the immense column of water from bottom to surface. Therefore only organisms like worms, molluscs, holothurians, starfishes, corals, and all sessile forms may safely be considered as having been captured at the bottom. In the case of crustaceans and fishes, however, it may be doubted whether they were really caught at the bottom or in intermediate waters. Lists recording the catches of deep-sea expeditions at great depths cannot therefore be accepted as representing the animal-life on the ocean-floor, for in such lists we often find forms which are now known to live quite close to the surface. Although we have now a much more precise idea of the vertical distribution of pelagic fishes than was previously possible, some surprising facts are occasionally brought to light. Thus, as mentioned in Chapter III., the “Michael Sars” at Station 48, between the Canaries and the Azores, brought up an *Alepocephalus* in the large trawl towed at the bottom in 5000 metres, just as these fishes have been captured by most deep-sea expeditions; on the trawl-rope a small tow-net was fixed in

Difficulty in recognising what animals brought up in the trawl really lived at the bottom.

¹ The mean sphere level, which lies at a depth of about 1700 fathoms, has hitherto been regarded as the depth at which the abyssal plain of the ocean commences, but it will be seen that Dr. Hjort places this depth at 2000 fathoms.—J. M.