

which, while not precluding differences of a minor degree, is far in excess of that observable in the ocean, where the conditions of life are so profoundly distinct?

While the incessant dispersal of forms tends to hinder the creation of new varieties and species, it must tend to produce types which are hardy and adaptable, and therefore thoroughly fitted to survive. In this connection a suggestion has been put forward which goes a little further than we have ventured, but without denying the essential truth of our assertion. It is that the uniformity of fresh-water organisms is due to the persistence of the hardy adaptable types of cosmopolitan distribution, and the dying-off of local types, as a result of altered conditions. The local varieties, which under more favourable circumstances might have attained specific rank, are regarded as having frequently succumbed to the combined effects of changing conditions and the relentless competition of more adaptable generalised forms. It may be so; but, although our present knowledge of this intricate problem is very far from complete, there is no need to look beyond the exceptional capacity for dispersal for an explanation of this phenomenon.

This, then, is the conclusion we arrive at respecting the general uniformity of the organisms of fresh water. We are able also to assert confidently that fresh-water organisms are the modified descendants of marine ancestors, and we have indicated at considerable length the different ways in which we conceive the colonisation of inland waters to have taken place. On the earlier question we set ourselves—that of the existence of only certain forms in fresh water—it is more difficult to reach a conclusion. Many causes have been enumerated, each of which may have had its effect in preventing this or that type from leaving the littoral zone for the inland waters of a continent, but we are still confronted with exceptions which we cannot explain, both of forms which have unexpectedly succeeded in migrating, and of others which have incomprehensibly failed to do so. We are, in fact, face to face with some of the most profound of Nature's problems, and while we may safely predict that increasing knowledge will throw light upon many obscure matters, the time is far hence when we shall be able to unravel the complex effects produced on living matter by the influence of animate and inanimate surroundings.