

find a seal, a herring, certain Cumacea and Schizopoda, the mollusc *Cardium edule*, a Polychæte worm, and two Foraminifera of marine type. Lake Baikal, in Eastern Siberia, which is one of the largest fresh-water lakes in the world, is similarly inhabited by a seal, also by certain Harpacticoid Copepods and a Polychæte worm.

It is no wonder, then, that cases such as these, in which sea-organisms are living in fresh-water basins, have aroused wide interest. An inquiry into the past history of these inland seas affords some clue (particularly in the case of the Caspian) as to the meaning of the anomalies. During the early part of the Tertiary period, the Caspian appears to have belonged to a great sea which then covered the southern part of Russia, and was in direct communication with the ocean. Only since then has it become gradually cut off from the sea and gradually freshened. If this is indeed the case, it is not difficult to believe that the marine forms which have been mentioned are forms which have persisted in the lake since it was actually a portion of the ocean.

Inland basins which seem to be the modified remainders of isolated portions of the ocean are sometimes spoken of as relict seas (*Reliktensee*), and the Caspian is manifestly an example of such. The case of Lake Baikal is by no means so satisfactorily proved from a geological point of view; but however that may be, it is clear that in certain instances, at any rate, the existence of what we have called marine animal types in fresh water is merely an indication of the origin of that fresh-water basin, and not of a lack of distinctness between the two great groups of aquatic animals.

If, then, certain apparent exceptions do not really invalidate our conception of a difference between marine and fresh-water organisms, we of necessity ask the question: Why are certain forms present in one case and not in the other? This at once takes us to the root of matters, for it not only involves a study of organisms in relation to their environment, but suggests the additional question: How did fresh-water life originate?

At the present day, the most varied forms of life, both animal and vegetable, are found in fresh water. Representatives of most of the principal groups are known, from the Protozoa up to the mammals themselves, and from the lowest Algæ to the flowering plants. Yet there seems no escape from the conclusion that life had its origin in the ocean, and that all the fresh-water organisms with which we are acquainted must have been derived either directly or indirectly from that source.

Our study of the different groups concerned has shown that, while certain cases exist in which the forms all inhabit one medium or the other, in the greater number of cases some types are capable of exist-