

The argument, as we have seen in a previous chapter, for the animal nature of Eozoon depends on our assuming certain parts of this fixity. We suppose that then as now calcium carbonate had been selected as the material for the skeletons of such creatures; that then, as now, minute tubuli and large canals were necessary to enable the soft animal matter to permeate and pass through the skeleton, and that the protoplasmic animal matter of these far back geological periods had the same vital properties of contraction and extension, digestion, etc., that it has to-day. Could any one prove that these determinations of vital and other forces had not been established, or that living protoplasmic matter, with all its wonderful properties, had not been constructed in the Laurentian period, the existence of this ancient animal would be impossible. Yet how much is implied in all this, and though nothing is more unstable chemically or vitally than protoplasm, if it were introduced in the Laurentian, it has continued practically unchanged up to the present time.

If we pass on to the undoubted and varied life of the Cambrian period, we shall find that multitudes of things which might have been otherwise were already settled in a way that has required no change.

In the oldest Trilobites the whole of the mechanical conditions of an external articulated skeleton had been finally settled. The material chitinous or partly calcareous, its microscopic structure, fitted to combine lightness and strength with facility for rapid growth, the subdivision of its several rings, so as to form a protective armour and a mobile skeleton, the arrangement of its spines for defence without interfering with locomotion, the contrivance of hinge joints arranged in different planes in the limbs,—all these were already in full perfection, and just as they are found to-day in the skeleton of a king-crab or any other Crustacean. They have, it is true, been modified into a vast number of subordinate forms and uses,