

situations as can only lead the observer to suppose that they were submerged by causes that acted without violence. Some information may also be obtained from an examination of the fossils themselves; for, while some beds contain the remains of animals known to exist in fresh water, others are crowded with the remains of marine animals. Assuming, then, that the habits of these animals were, at the time in which these stratified rocks were deposited, the same as now characterize animals of the same species or genera, a geologist may classify the stratified rocks under the two heads of fresh water and marine. This species of evidence has perhaps been, in many instances, too readily applied, and it is by no means judicious to form an opinion from the presence of one or two specimens. But, when the remains generally have such characters as warrant the observer in the supposition that animals lived in the same medium, he can feel no difficulty in deciding upon the question—was the bed formed in the sea, in a river, or in an inland lake? There are many animals that are known to exist in either fresh or in salt water, and there are many others which may be inured to a change of residence. It may be hoped that this subject will receive a more careful attention than has hitherto been devoted to it; for it is not possible to determine with precision how much dependance can, under certain circumstances, be placed upon the deductions to which we have referred, until it has been ascertained whether animals inhabiting fresh or salt water may not, by a gradual process, be able to exist in, and at last prefer that medium in which they could not live if the transition were sudden. But, however this may be, it is evidently injudicious to form an opinion of a deposit from the presence of a few marine or fresh-water shells, as they may have been brought by some local cause into the situation in which we find them, or they may have had an habitual residence in the fluid by which the bed itself was deposited.

The presence of organic remains in rocks also enables the geologist to compare the present state of the earth, so far as relates to the provisions for the sustenance of life, with its probable condition at the periods when the successive strata were formed. Assuming, again, that the habits of animals were the same then as in the present day, the naturalist may readily determine the conditions which must have existed for