

that their sequence is otherwise untraceable, the geologist can confidently assign their relative position to each of the fractured masses. He knows, for instance, using for our present purpose the letters of the alphabet to denote the sequence of the formations, that a mass of limestone containing fossils typical of the formation B must be younger than another mass of rock containing the fossils of A. A series of strata full of the fossils of H resting immediately on others charged with those of C, must evidently be separated from these by a great gap, elsewhere filled in by the intervening formations D, E, F, G. Nay, should the rocks in the upper part of a mountain be replete with the fossils proper to D, while those in the lower slopes showed only the fossils of E, F, and G, it could be demonstrated that the materials of the mountain had actually been turned upside down, for, as proved by its organic remains, the oldest and therefore lowest formation had come to lie at the top, and the youngest, and therefore highest, at the bottom.

Of absolute chronology in such questions science can as yet give no measure. How many millions of years each formation may have required for its production, and how far back in time may be the era of any given group of fossils, are problems to which no answer, other than a mere guess, can be returned. But this is a matter of far less moment than the relative chronology, which can usually be accurately fixed for each country, and on which all attempts to trace back the history of the land must be based.

While, then, it is true that most of the materials of the solid land have been laid down at successive periods under the sea, and that the relative dates of their deposition can be determined, it is no less certain that the formation of these materials has not proceeded uninterruptedly, and that they have not finally been raised into land by a single movement.