

after their deposition and their remaining so until the Old Red period had passed ; or to the Old Red having been deposited on the Silurian, the whole elevated above the sea and subjected to denudation sufficient to remove the Old Red ; in either case when the land was again submerged the formation then in process of deposit would be laid down directly on the Silurian. One thing should be carefully noted, viz., that the rocks never occur in an inverted order, *i.e.*, no one of the Cambrian beds is to be found resting on any of the Silurian, nor any of either of these on a representative of the Old Red.

As each superimposed stratum is older than that underlying it, so the fossils contained in an overlying bed are less ancient than those in the bed beneath, and thus the succession of organic remains are the evidences of the growth and development of living forms.

As aforesaid, each formation and each of its subdivisions is characterized by a peculiar assemblage of fossils, and, owing to this, when we find the peculiar assemblage repeated, we know that we have a repetition of the formation in which it was originally discovered ; and thus a knowledge of the fossils contained in any particular bed or group of beds, enables us to determine the relative age and position of the beds compared with other beds in the same region or other regions. How far this test may be applied with certainty to minor rock groups or sub-divisions, we have not time here to consider, but its value to determine formations has never been questioned. Further, although the combination or assemblage of fossils is peculiar to that formation or sub-division, each fossil of it is not, for it may go on upward through several formations before it disappears : one thing, remember, that when it once disappears it never reappears.

Let us suppose that in any one country we discover the order and relative succession of the rocks, and that we have examined and noted the mineral character of the beds as well as the fossils they contain. Now to identify any outlying beds throughout the neighbourhood, the mineral character alone would be a sufficient means of identification for most of the beds, while superposition would do for the remainder. But to determine the stratigraphical position of rocks in a far off region from mineral evidence obtained in this country would be vain—here a comparison of the fossils would be the only reliable test. For instance, the