

able amount of mud, in the course of 100,000 years about 600 feet would be deposited. At the bottom of the open sea, far away from the coasts, during this long period only some few feet of mud would be deposited. Even on the sea-shores where a comparatively large quantity of mud is deposited the thickness of the strata formed during the course of a century may after all amount to no more than a few inches or lines when condensed into solid stone. In any case, however, all calculations based upon these comparisons are very unsafe, and we cannot even approximately conceive the enormous length of the periods which were requisite for the formation of the systems of neptunic strata. Here we can apply only relative, not absolute, measurements of time.

Moreover, we should entirely err were we to consider the size of these systems of strata alone as the measure of the actual space of time which has elapsed during the earth's history. For the elevations and depressions of the earth's crust have perpetually alternated with one another, and the mineralogical and palæontological difference—which is perceived between each two succeeding systems of strata, and between each two of their formations at any particular spot—corresponds in all probability with a considerable intermediate space of many thousands of years, during which that particular part of the earth's crust was raised above the water. It was only after the lapse of this intermediate period, when a new depression again laid the part in question under water, that there occurred a new deposit of earth. As, in the mean time, the inorganic and organic conditions on this part had undergone a considerable transformation, the newly-formed layer of mud was necessarily com-