

64. SEQUENCE OF GEOLOGICAL CHANGES.—Let us now review the sequence of those stupendous changes, of which our examination of the geological phenomena of the south-east of England has afforded such incontrovertible evidence. From the facts brought before us, we learn that at a period incalculably remote, there existed in the northern hemisphere an extensive island or continent, possessing a climate of such a temperature, that its surface was clothed with coniferous trees, arborescent ferns, and plants allied to the cycas and zamia; and that the ocean which washed its shores was inhabited by turtles and reptiles of extinct genera. This island and its forests suffered a partial subsidence, which was effected in such manner that many of the trees, although torn and rent, still retained their erect position; and the zamia, and a considerable layer of the vegetable mould in which they grew, remained undisturbed. In this state an inundation of fresh-water covered the once flourishing forest, and deposited upon the soil and around the trees a calcareous mud, which gradually consolidated into fine limestone; water, holding flint in solution, percolated through the mass, and silicified the now submerged trees and plants. A further depression took place—a body of fresh water, brought down by land-floods and rivers, overwhelmed the petrified forest, and heaped upon it accumulations of debris, which their parent streams had washed away from the rocks over which they