

distances without time being allowed for attrition ; alluvium was thrown down unstratified, and often in strange situations, on the flanks or on the summits of hills, while the lowest levels were left bare. The convulsion was felt simultaneously over so wide an area that all the individuals of certain species of quadrupeds were at once annihilated ; yet the event was comparatively modern, for the species of testacea now living were already in existence.

This hypothesis is surely untenable and unnecessary. In the present chapter I have endeavored to show how numerous have been the periods of geographical change, and how vast their duration. Evidence to this effect is afforded by the relative position of the chalk and overlying tertiary deposits ; by the nature, character, and position of the tertiary strata ; and by the overlying alluvia of the Weald and adjacent countries. As to the superficial detritus, its insignificance in volume, when compared to the missing rocks, should never be lost sight of. A mountain-mass of solid matter, hundreds of square miles in extent, and hundreds of yards in thickness, has been carried away bodily. To what distance it has been transported we know not, but certainly beyond the limits of the Weald. For achieving such a task, if we are to judge by analogy, all transient and sudden agency is hopelessly inadequate. There is one power alone which is competent to the task, namely, the mechanical force of water in motion, operating gradually, and for ages. We have seen in the 6th chapter that every stratified portion of the earth's crust is a monument of denudation on a grand scale, always effected slowly ; for each superimposed stratum, however thin, has been successively and separately elaborated. Every attempt, therefore, to circumscribe the time in which any great amount of denudation, ancient or modern, has been accomplished, draws with it the gratuitous rejection of the only kind of machinery known to us which possesses the adequate power.

If, then, at every epoch, from the Cambrian to the Pliocene inclusive, voluminous masses of matter, such as are missing in the Weald, have been transferred from place to place, and always removed gradually, it seems extravagant to imagine an exception in the very region where we can prove the first and last acts of denudation to have been separated by so vast an interval of time. Here, might we say, if anywhere within the range of geological inquiry, we have time enough and without stint at our command.