

broken crust. Lyell, on the other hand, showed that we can explain the formation of such enormous chains of mountains quite naturally by the same slow and imperceptible risings and depressions of the earth's surface which are still continually taking place, and the causes of which are by no means miraculous. Although these depressions and risings may perhaps amount only to a few inches, or at most a few feet, in the course of a century; still, in the course of some millions of years they are perfectly sufficient to raise up the highest chains of mountains, without the aid of mysterious and incomprehensible revolutions. In like manner, the meteorological action of the atmosphere, the influence of rain and snow, and, lastly, the breakers on the coasts, which by themselves seem to produce an insignificant effect, must cause the greatest changes if we only allow sufficiently long periods for their action. The multiplication of the smallest causes produces the greatest effects. Drops of water produce a cavity in a rock.

I shall afterwards be obliged again to recur to the immeasurable length of geological periods which are necessary for this purpose, for, as we shall see, Darwin's theory, as well as that of Lyell, renders the assumption of immense periods absolutely necessary. If the earth and its organisms have actually developed in a natural way, this slow and gradual development must certainly have taken a length of time which surpasses our powers of comprehension. But as many men see in this very circumstance one of the principal difficulties in the way of those theories of development, I beg leave here to remark that we have not a single rational ground for conceiving the time requisite to be limited in any way. Not only many ordinary persons, but even eminent