

tained their wish. The other reason assigned for our conclusions is the difficulty we have found "of conceiving the aggregate results of a great number of minor revolutions." In this there may be a slight mistake, for we may have rightly conceived the effects that would be produced by a number of minor revolutions, but that conception may not agree with the one formed by our opponents. To defend the supposition that the mountain chains were elevated by a paroxysmal force rather than a series of minor convulsions, would lead us to a series of arguments which must be extended to a much greater length than our now limited space would admit; and it would be necessary for those who maintain an opposite opinion, to state, first of all, whether the series of forces mentioned by them had at all times the same degree of intensity, or were in this particular as variable as at the present moment.

Mr. Lyell, however, gives, in another part of his "Principles of Geology," a more definite view of his objections to Beaumont's theory. In determining the period of a disturbance or an elevation, it is of course only possible to state that it happened during an interval anterior to one event, and posterior to another, and that interval may have been an instant or a protracted period of time. Mr. Lyell assumes, that the periods of revolution were of considerable duration, and that successive operations of the volcanic force produced the mountain chains. This opinion is evidently maintained as consistent with his theoretical opinions in general; for, in another place, he says—"before we can reasonably attribute extraordinary energy to any known cause, we must be sure that its usual force would be inadequate, though exerted for indefinite ages, to produce the effects required." This might be done, we think, by comparing the present condition of rocks forming mountains with what might be supposed to result from a long-continued operation of a cause not more violent than that which is now active. But this is more than can be required of those who believe continents and mountain chains to have been produced by a sudden paroxysmal force. It is sufficient to know that the volcanic cause has not, within the period of history, produced any effect that bears an analogy to those of which we have been speaking; for it has only produced a few isolated cones, and in one or two instances raised a district to an insignificant height. Con-