

in 72,900 years. If the whole of Europe (taken at a mean height of 671 feet) were denuded at the same rate, it would be levelled in rather less than half a million of years.

It is not pretended that these results are strictly accurate. On the other hand, they are not mere guesses. The amount of water flowing into the sea, and the annual discharge of sediment, have been in each case measured with greater or less precision. The areas of drainage may perhaps require to be increased or lessened. But though some change may be made upon the ultimate results just given, it is hardly possible to consider them attentively without being forced to ask whether those enormous periods which geologists have been in the habit of demanding for the accomplishment of geological phenomena, and more especially for the very phenomena of denudation, are not in reality far too vast. If the Mississippi is carrying on the process of denudation so rapidly that at the same rate the whole of North America might be levelled in four and a half millions of years, surely it is most unphilosophical to demand unlimited ages for similar but often much less extensive denudations in the geological past. Moreover, that rate of erosion appears, on the whole, to be rather below the average in point of rapidity. The Po, for instance, works more than eight times as fast. But as the physics of the Mississippi have been more carefully studied than those of perhaps any other river, and as that river drains so extensive a region, embracing so many varieties of climate, rock, and soil, we shall probably not exaggerate the result if we assume the Mississippi ratio as an average. It is, of course, obvious that as the level of the land is lowered, the rate of subaerial denudation decreases, so that on the supposition that no subterranean movements took place to aid or retard the denudation, the last stages in