

surface might be degraded, they would maintain their place so long as the land remained above water. Nothing short of some stupendous convulsion, that should destroy the surface of the land, would be able to efface them. But of such a catastrophe there is no trace. On the contrary, all the evidence goes to show that the valleys are due to prolonged erosion. They must consequently be regarded as among the most ancient topographical features in the country. Strange and almost paradoxical as the statement may seem, it is nevertheless true that they are of higher antiquity than the mountains that rise from them. The mountains, in fact, have emerged out of the original bulk of the land, in proportion as the valleys have been excavated. Their position has been determined by the lines of valleys, and their forms have been shaped by the process of degradation.

We must conceive the denudation to have been continuously in progress, so long as the ground stood above the level of the sea ; that, in short, unless interrupted, it would only cease when it had reached its lowest possible limit, and had reduced the land to a submarine plain. We know that there were prolonged intervals when it entirely ceased : periods of depression when the ground lay below the sea-level, and when, in some cases, it was buried under thousands of feet of accumulated sedimentary material. These masses of sediment would, of course, completely fill up the drainage-lines of the submerged land, and when the region reappeared above the water, a new and independent series of lines would at once begin to be eroded upon its surface. The excavations of one period have thus been filled up by the deposits of another. We must also remember that, from time to time, subterranean movements would variously affect the flow of water and the lines engraven by it over the surface of the land.