

Possibly the direction of the succeeding shock may not coincide with that of the valley, a great extent of adjacent country being equally shaken. Still it will usually happen that no permanent geographical change will be produced except in valleys. In them alone will occur landslips from the boundary cliffs, and these will frequently divert the stream from its accustomed course, causing the original ravine to become both wider and more tortuous in its direction.

If a single convulsion of extreme violence should agitate at once an entire hydrographical basin, or if the shocks should follow each other too rapidly, the previously existing valleys would be annihilated, instead of being modified and enlarged. Every stream might in that case be compelled to begin its operations anew, and to shape out new channels, instead of continuing to deepen and widen those already excavated. But if the subterranean movements have been intermittent, and if sufficient periods have always intervened between the severer shocks to allow the drainage of the country to be nearly restored to its original state, then are both the kind and degree of force supplied by which running water may hollow out valleys of any depth or size consistent with the elevation above the sea which the districts drained by them may have attained.

When we read of the drying up and desertion of the channels of rivers, the accounts most frequently refer to their deflection into some other part of the same alluvial plain, perhaps several miles distant. Under certain circumstances, a change of level may undoubtedly force the water to flow over into some distinct hydrographical basin; but even then it will fall immediately into some other system of valleys already formed.

We learn from history that, ever since the first Greek colonists settled in Calabria, that region has been subject to devastation by earthquakes; and, for the last century and a half, ten years have seldom elapsed without a shock; but the severer convulsions have not only been separated by intervals of twenty, fifty, or one hundred years; but have not affected precisely the same points when they recurred. Thus the earthquake of 1783, although confined within the same geographical limits as that of 1638, and not very inferior in violence, visited, according to Grimaldi, very different districts. The points where the local intensity of the force is developed being thus perpetually varied, more time is allowed for the removal of separate mountain masses thrown into river-channels by each shock.

*Number of persons who perished during the earthquake.* — The number of persons who perished during the earthquake in the two Calabrias and Sicily is estimated by Hamilton at about forty thousand, and about twenty thousand more died by epidemics, which were caused by insufficient nourishment, exposure to the atmosphere, and malaria, arising from the new stagnant lakes and pools.

By far the greater number were buried under the ruins of their houses; but many were burnt to death in the conflagrations which almost invariably followed the shocks. These fires raged the more