

To pass to another and very remote part of the world, we have witnessed, so late as January 1855, in the northern island of New Zealand, a sudden and permanent rise of land on the northern shores of Cook's straits, which at one point, called Muko-muka, was so unequal as to amount to nine feet vertically, while it declined gradually from this maximum of upheaval in a distance of about twenty-three miles north-west of the greatest rise, to a point where no change of level was perceptible. Mr. Edward Roberts, of the Royal Engineers, employed by the British Government at the time of the shock in executing public works on the coast, ascertained that the extreme upheaval of certain ancient rocks followed a line of fault running at least ninety miles from south to north into the interior; and, what is of great geological interest, immediately to the east of this fault, the country, consisting of tertiary strata, remained unmoved or stationary; a fact well established by the position of a line of nullipores marking the sea-level before the earthquake, both on the surface of the tertiary and paleozoic rocks.*

The repetition of such unequal movements, especially if they recurred at intervals along the same lines of fracture, would in the course of ages cause the strata to dip at a high angle in one direction, while towards the opposite point of the compass they would terminate abruptly in a steep escarpment.

But it is probable that the multiplication of such movements in the post-tertiary period has rarely been so great as to produce results like those above described in Möen, for the principal movements in any given period seem to be of that more uniform kind spoken of at p. 334, by which the topography of limited districts and the position of the strata are not visibly altered except in their height relatively

* Bulletin de la Société Géologique de France, vol. xiii. p. 660, 1856, where I have described the facts com-

municated to me by Messrs. Roberts and Walter Mantell.