

circumference of the mountains—the rate diminishing about an inch per mile, in a distance, say of forty miles—this might convert many of the largest and deepest valleys at their lower ends into lakes.

We have no certainty that such movements may not now be in progress in the Alps ; for if they are as slow as we have assumed, they would be as insensible to the inhabitants, as is the upheaval of Scandinavia or the subsidence of Greenland to the Swedes and Danes who dwell there. They only know of the progress of such geographical revolutions, because a slight change of level becomes manifest on the margin of the sea. The lines of elevation or depression above supposed might leave no clear geological traces of their action on the high ridges and table-lands separating the valleys of the principal rivers ; it is only when they cross such valleys, that the disturbance caused in the course of thousands of years in the drainage becomes apparent. If there were no ice, the sinking of the land might not give rise to lakes. To accomplish this in the absence of ice, it is necessary that the rate of depression should be sufficiently fast to make it impossible for the depositing power of the river to keep pace with it, or, in other words, to fill up the incipient cavity, as fast as it begins to form. Such levelling operations once complete, the running water, aided by sand and pebbles, will gradually cut a gorge through the newly raised rock, so as to prevent it from forming a barrier. But if a great glacier fill the lower part of the valley, all the conditions of the problem are altered. Instead of the mud, sand, and stones drifted down from the higher regions being left behind in the incipient basin, they all travel onwards in the shape of moraines on the top of the ice, passing over and beyond the new depression, so that when, at the end of fifty or a thousand centuries, the glacier melts, a large and deep basin representing the difference in the movement of two adjoining