

to make the whole soil-cap, heavy blocks included, creep down even the least slope. I will only mention one or two of these. There is constant expansion and contraction of the spongy vegetable mass going on, as it is saturated with water or comparatively dry; and while with the expansion the blocks slip infinitesimally down, the subsequent contraction can not pull them up against their weight. The rain-water trickling down the slope is removing every movable particle from before them; the vegetable matter on which they are immediately resting is undergoing a perpetual process of interstitial decay and removal. In this way the blocks are gradually borne down the slope in the soil-cap, and piled in the valley below. The only other question is, how the soil is afterward removed and the blocks left bare. This, I have no doubt, is effected by the stream in the valley altering its course from time to time, and washing away the soil from beneath.

This is a process which in some of the great stone rivers in the Falkland Islands must have taken an enormous time. I fear that the extreme glacialists will see in it a danger to this universal application of their beloved theory to all cases of scratching and grooving. I have known too much of the action of ice to have the slightest doubt of its power; but I say that ice had no hand whatever in the production of these grand moraines in the Falkland Islands.

In the West Highlands of Scotland, and in many other parts of the world, I have often noticed that when a hill of such a rock as clay-slate comes down with a gentle slope, the outcrop of the vertical or highly inclined slates covered with a thick layer of vegetable soil or drift containing imbedded blocks and bowlders derived from higher levels, the slates are frequently first slightly bent downward, then abruptly curved and broken, and frequently the lines of the fragments of the fractured beds of slate can be traced for a yard or two in the soil-cap gradually becoming parallel with its surface, and passing down in the