

comes to rest upon the ice. As the glacier threads its way down the valley, its surface becomes discoloured with the earth, stones, and mud washed from the slopes; piles of rubbish collect along its sides in long lines called *moraines*. These are slowly borne onward upon the ice, till at last, when the glacier melts, they are thrown down. The confused heaps of earth and stones thus formed are apt to be washed away by the escaping river, as fast as they are deposited. Where, however, they remain, they form along or across the valley a more or less continuous rampart, which is continually growing by the addition of fresh materials as the ice reaches its farthest limit. Should a period of milder temperature come and cause the glacier to retire up the valley, this rampart-like pile of rubbish will be left behind to mark where the ice once reached. Another prolonged halt at a higher part of the valley will give rise to another set of moraine mounds. And thus, by the intermittent recession of the glacier, successive lines of such piles of debris may be thrown down, each line marking a pause in the retreat of the ice, and a sojourn of the glacier-end at that place. Now, as will be afterwards pointed out, this characteristic relic of glacier work is to be found in many Scottish valleys. Moraine mounds, singularly fresh, still dam up the drainage from the surrounding slopes as they did when the ice drew back from them (Figs. 61, 70, 71), and huge boulders, once carried on the ice from the higher recesses of the hills, still lie scattered on the heaps of rubbish, or perched on hill and crag where the ice dropped them (Figs. 54, 55, 56, 57).

While land-ice is thus a most powerful geological agent in new-modelling the surface of the earth, its operations are not entirely confined to the dry land. As already stated, it creeps along the sea-bottom for some distance from land,