

rubbish that the glacier deposits at its lower ends, in some cases almost as fast as it is formed, perhaps, I might rather say, as slowly as it is formed, because day after day we may see scarcely any difference in the details of certain moraines, though, when being worked upon by water, all stones of moderate size that have been shed from the ice are in the long run apt to be carried down the valley by the ever-changing streams that flow from the ends of glaciers along the length of many terminal moraines. In some cases, however, it happens that, from various circumstances, both terminal and lateral moraines have been so well preserved from destruction, that they form long enduring features in the scenery.

Something remains to be said about moraine-stones before I describe the glacial phenomena of our own island. When an immense weight of glacier ice, in some cases hundreds, or in Arctic and Antarctic regions even two or three thousand feet in thickness, passes over solid rocks, by the pressure of the moving mass, the rocks in the valley over which it slides become smooth and polished—not flatly, but in flowing lines, presenting a largely mammillated surface. Furthermore, the stones of the surface-moraines frequently fall into fractures called crevasses, and the small *débris* and finely powdered rocks that more or less cover the glacier are borne into these crevasses by the water that flows upon the surface, and much of this matter finds its way to the bottom of the ice, fig. 78. The bottom of a glacier, therefore, is not simple bare ice, but between the ice and the rock over which it flows there are blocks of stone imprisoned, and fine silicious and often felspathic *débris* (chiefly worn from the floor itself), which may be likened to emery powder. The