

rounded or ground down into sand, or even the finest mud, of which the moraine is largely constituted.

As the terminal moraines are the most prominent of all the monuments left by a receding glacier, so are they the most liable to obliteration; for violent floods or debacles are sometimes occasioned in the Alps by the sudden bursting of glacier-lakes, or those temporary sheets of water before alluded to, which are caused by the damming up of a river by a glacier which has increased during a succession of cold seasons, and descending from a tributary into the main valley, has crossed it from side to side. On the failure of this icy barrier, the accumulated waters, being let loose, sweep away and level many a transverse mound of gravel and loose boulders below, and spread their materials in confused and irregular beds over the river-plain.

Another mark of the former action of glaciers, in situations where they exist no longer, is the polished, striated, and grooved surfaces of rocks before described. Stones which lie underneath the glacier and are pushed along by it, sometimes adhere to the ice, and as the mass glides slowly along at the rate of a few inches, or at the utmost two or three feet, per day, abrade, groove, and polish the rock, and the larger blocks are reciprocally grooved and polished by the rock on their lower sides. As the forces both of pressure and propulsion are enormous, the sand, acting like emery, polishes the surface; the pebbles, like coarse graters, scratch and furrow it; and the large stones scoop out grooves in it. Lastly, projecting eminences of rock, called '*roches moutonnées*' (see above, p. 269), are smoothed and worn into the shape of flattened domes where the glaciers have passed over them.

Although the surface of almost every kind of rock, when exposed to the open air, wastes away by decomposition, yet some retain for ages their polished and furrowed exterior: and, if they are well protected by a covering of clay or turf,