of the Alps are formed. An important property of glaciers remains to be pointed out. They have a general movement of translation in the direction of their slope, under the influence of which they make a certain yearly progress downward, according to the angle of the slope. The glacier of the Aar, for example, advances at the rate of about 250 feet each year.

Under the joint influence of the slope, the weight of the frozen mass, and the melting of the parts which touch the earth, the glacier thus always tends downwards; but from the effects of a more genial temperature, the lower extremity melting rapidly, has a tendency to recede. It is the difference between these two actions which constitutes the real progressive movement of the glacier.

The friction exercised by the glacier upon the bottom and sides of the valley, ought necessarily to leave its traces on the rocks with which it may happen to be in contact. Over all the places where a glacier has passed, in fact, we remark that the rocks are polished, levelled, rounded, and, as it is termed, *moutonnées*. These rocks present, besides, striations or scratches, running in the direction of the motion of the glacier, which have been produced by hard and angular fragments of stones imbedded in the ice, and which leave their marks on the hardest rocks under the irresistible pressure of the heavy-descending mass of ice. In a work of great merit, which we have before quoted, M. Charles Martins explains the physical mechanism by which granite rocks borne onwards in the progressive movements of a glacier, have scratched, scored, and rounded the softer rocks which the glacier has encountered in its descent. "The friction," says M. Martins, "which the glacier exercises upon the bottom and upon the walls, is too considerable not to leave its traces upon the rocks with which it may be in contact; but its action varies according to the mineralogical nature of the rocks, and the configuration of the ground they cover. If we penetrate between the soil and the bottom of the glacier, taking advantage of the ice-caverns which sometimes open at its edge or extremity, we creep over a bed of pebbles and fine sand saturated with water. If we remove this bed, we soon perceive that the underlying rock is levelled, polished, ground down by friction, and covered with rectilinear striæ, resembling sometimes small grooves, more frequently perfectly straight scratches, as though they had been produced by means of a graver, or even a very fine needle. The mechanism by which these striæ have been produced is that which industry employs to polish stones and metals. We rub the metallic surface with a fine powder called *emery*, until we give it a brilliancy which proceeds from the reflection of the light from an