

the sea, whereas the limit of perpetual snow is 8,500 feet. Ever melting on its surface, in its mass, and at the end, each glacier is yet ever renewed by yearly falls of snow, and by direct gravity on the slopes, and by pressure of accumulating snow and ice behind, and by melting and regelation, it is urged down the valley and maintains its average size. I will not enter into all the details of the structure of the ice of glaciers, because that will not help us in the special geological investigation now in view; but I will describe what are the effects produced by a glacier in the country over which it slides, and various other glacier-phenomena affecting the scenery of the Alps, and therefore affecting the scenery of our own country in past times when glaciers existed here, and still affecting it in the relics they have left.

A glacier slides more or less rapidly according to the mass of ice that fills the valley, and to the greater or less inclination of the slope, for in these respects it behaves very like a river. If we have a vast river like the Mississippi flowing down a broad valley, although the slope of the valley may be gentle, still the river flows with rapidity, in consequence of the greatness of the body of water; so if we have a mass of ice, which represents the snow-drainage of a large tract of country, *covered with perpetual snow*, then the *glacier flows with a rapidity proportionate to the mass of ice*, and that rate of progress is modified, increased, or diminished, in accordance with the fall and width of the valley, so that when it is steep, the glacier flows comparatively fast, and when the angle at which the valley slopes is small, it flows with comparative slowness. Like a river also when the valley expands in width, so does the glacier broaden to meet the mountain sides on