

plunge the traveller into the depths below. Still the treacherous surface is daily crossed by parties of travellers, apparently without any accident. The whole of the ice is moving steadily along the slope on which it rests, at the rate of eight to ten inches daily—the rate of motion is less in winter and greater in summer ; and farther down, where the glacier goes by the name of the Glacier du Bois, and descends a steeper slope, its rapidity is greater ; and at the same time by the opening of immense crevasses its surface projects in fantastic ridges and pinnacles. The movements and changes in the ice of these glaciers are in truth very remarkable, and show a mobility and plasticity which at first sight we should not have been prepared to expect in a solid like ice.¹ The crevasses become open or closed, curved upwards or downwards, perpendicular or inclined, according to the surface upon which the glacier is moving, and the whole mass is crushed upward or flattens out, its particles evidently moving on each other with much the same result as would take place in a mass of thick mud similarly moving. On the surface of the ice there are a few boulders and many stones, and in places these accumulate in long irregular bands indicating the lines of junction of the minor ice streams coming in from above to join the main glacier. At the sides are two great mounds of rubbish, much higher than the present surface of the glacier. They are called the lateral moraines, and consist of boulders, stones, gravel and sand, confusedly intermingled, and for the most part retaining their sharp angles. This mass of rubbish is moved downward by the glacier, and with the stones constituting the central moraine,

¹ I need scarcely say that I adopt the explanation of glacier motion given by Forbes. “The fuller consideration of the physical properties of glacier ice leads essentially to the same conclusions as those to which Forbes was led forty-one years ago by the study of the larger phenomena of glacier motion, that is, that the motion is that of a slightly viscous mass, partly sliding upon its bed, partly shearing upon itself under the influence of gravity.”—Trotter, Proc. Royal Society of London, xxxviii. 107.