becomes firmer, passing into the condition of *névé* or *firn* (p. 258). Gradually, as the separate granules are pressed together and the air is squeezed out, the mass assumes the character of blue compact crystalline ice. From a geological point of view, a glacier may be regarded as the drainage of the snowfall above the snow-line, as a river is the drainage of the rainfall. A glacier, like a river, is always in motion, though so slowly that it seems to be solid and stationary. It descends as a brittle, thick-flowing substance, like pitch or resin. The motion is unequal in the different parts, the centre moving faster than the sides and bottom, as was first ascertained through accurate measurement by J. D. Forbes, who found that in the Mer de Glace of Chamouni, the mean daily rate of motion in the summer and autumn was from 20 to 27 inches in the centre, and from 13 to 19½ near the side. Helland has observed that on the west coast of Greenland the glacier of Jacobshavn has a remarkably rapid motion, its rate for twenty-four hours ranging from 48·2 feet to 64·8 feet. The ice of the fjord of Torsukatak, nearly five miles wide, moves with a mean rate of 24 feet in a day; that of Karajak, four and a half miles broad, moves 30 feet daily. G. F. Wright, from observations made by him in Alaska, inferred that the Muir glacier there enters a sea-inlet at an average rate of forty feet per day (70 feet in the centre and 10 feet near the margin) in the month of August;[224] but a more recent measurement by Dr. Reid in the summer of 1890 gives a maximum rate of only seven feet in a day.

The consequence of this differential motion is seen in

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[224] Amer. Journ. Sci. xxxiii. 1887, p. 10. For the glaciers of the United States see Wright's "Ice-Age in America"; H. P. Cushing, American Geologist, 1891, p. 207; Hayes, National Geographic Magazine, iv. 1892, p. 150; Russell, Amer. Journ. Sci. xliii. 1892, p. 169. 5th Ann. Rep. U. S. Geol. Surv. 1885.