

trees, and the soil in which they are rooted. Some of these masses have slid two or three miles, with an average breadth of a quarter of a mile; and so large are the rocky fragments, that I found some of them, which came down in the Willey Slide, to measure from fourteen to twenty feet in diameter. I also ascertained that the steep slopes of bare rock over which they had passed, were inclined, in some instances, at angles of twenty to thirty degrees with the horizon. After clambering up more than 400 feet above the level of the Saco, on its right bank, I reached a space of naked rock, fifteen feet square, over which my guide, the elder Crawford, told me that the whole contents of the Willey Slide had swept in 1826; which was indeed evident, for it lay in the direct line of the great trench cut through the forest above and below.

There is a small cataract at the spot, where a dyke of basalt and greenstone, four or five feet wide, traverses the granite, all the rocks being smoothed on the surface, and marked with some irregular and short scratches and grooves; but not such as resemble in continuity, straightness, or parallelism, those produced by a glacier, where hard stones, which grate along the bottom, have been firmly fixed in a heavy mass of ice, so that they can not be deflected from a rectilinear course.

I am aware that glaciers and icebergs are not the only means by which the grooving and polishing of the faces of rocks may be caused; for similar effects may arise on the sides of fissures where stony masses have been rent asunder, and moved upward and downward, or made to vibrate during earthquakes, so that the opposite walls are rubbed against each other. But we can not attribute to this cause the superficial markings now commonly referred to glacial action in Europe and North America; and what I saw at the Willey Slide, and other places in the White Mountains, convinced me that a semi-fluid mass of mud and stones must always have too much freedom of motion, and is too easily turned aside by every obstacle and inequality in the shape of the rocky floor, to enable it to sculpture out long and straight furrows.

From the Willey Slide we continued our way along the bot-