

Finland, and their present distribution implies that they were carried southwards, for a part at least of their way, by floating ice, at a time when much of the area over which they are scattered was under water. But it appears from the observations of Boetlingk, in 1840, and those of more recent inquirers, that while many blocks have travelled to the south, others have been carried northwards, or to the shores of the Polar Sea, and others north-eastward, or to those of the White Sea. In fact, they have wandered towards all points of the compass, from the mountains of Scandinavia as a centre, and the rectilinear furrows imprinted by them on the polished surfaces of the mountains where the rocks are hard enough to retain such markings, radiate in all directions, or point outwards from the highest land, in a manner corresponding to the course of the erratics above mentioned.*

Before the glacial theory was adopted, the Swedish and Norwegian geologists speculated on a great flood, or the sudden rush of an enormous body of water charged with mud and stones, descending from the central heights or watershed into the adjoining lower lands. The erratic blocks were supposed in their downward passage to have smoothed and striated the rock surfaces over which they were forced along.

It would be a waste of time, in the present state of science, to controvert this hypothesis, as it is now admitted that even if the rush of a diluvial current, invented for the occasion and wholly without analogy in the known course of nature, be granted, it would be inadequate to explain the uniformity, parallelism, persistency, and rectilinearity of the so-called glacial furrows. It is moreover ascertained that heavy masses of rock, not fixed in ice, and moving as freely as they do when simply swept along by a muddy current, do not give rise to such scratches and furrows.

* Sir R. I. Murchison, in his 'Russia and the Ural Mountains' (1845), has indicated on a map, not only the southern limits of the Scan-

dinavian drift, but by arrows the direction in which it 'proceeded eccentrically from a common central region.'