

district, and is very commonly from north to south, or if it be twenty or thirty or more degrees to the east or west of north, still always corresponds to the direction in which the large angular and rounded stones have travelled. These stones themselves also are often furrowed and scratched on more than one side, like those already spoken of as occurring in the glacial drift of Bedford (p. 165), and in that of Norfolk (pp. 213 and 218).

When we contemplate the area which is now exposed to the abrading action of ice, or which is the receptacle of moraine matter thrown down from melting glaciers or bergs, we at once perceive that the submarine area is the most extensive of the two. The number of large icebergs which float annually to great distances in the northern and southern hemisphere is extremely great, and the quantity of stone and mud which they carry about with them enormous. Some floating islands of ice have been met with from two to five miles in length, and from one hundred to two hundred and twenty-five feet in height above water, the submerged portion, according to the weight of ice relatively to sea water, being from six to eight times more considerable than the part which is visible. Such masses, when they run aground on the bottom of the sea, must exert a prodigious mechanical power, and may polish and groove the subjacent rocks after the manner of glaciers on the land. Hence there will often be no small difficulty in distinguishing between the effects of the submarine and supramarine agency of ice.

*Scandinavia once covered with Ice, and a Centre of  
Dispersion of Erratics.*

In the north of Europe, along the borders of the Baltic, where the boulder formation is continuous for hundreds of miles east and west, it has been long known that the erratic blocks, often of very large size, are of northern origin. Some of them have come from Norway and Sweden, others from