

ments would be left. In cases where no prominent ridges interrupted the march of the ice-sheets, and where the ground was low and covered with soft loose deposits, blocks of hard crystalline rocks might continue to be recognizable far from their source. Thus in the stony clay and gravel of the plains of northern Germany and Holland, besides the abundant locally-derived detritus, fragments occur which have had an unquestionably northern origin. Some of the rocks of Scandinavia, Finland, and the Upper Baltic are of so distinctive a kind that they can be recognized in small pieces. The peculiar syenite of Laurwig, in the south of Norway, has been found abundantly in the drift of Denmark; it occurs also in that of Hamburg, and has been detected even in the boulder-clay of the Holderness cliffs in Yorkshire. The well-known rhombenporphyr of southern Norway has likewise been recognized at Cromer and in Holderness. Fragments of the Silurian rocks from Gothland, or from the Russian islands Dago or Oesel, are scattered abundantly through the drift of the North German plain, and have been met with as far as the north of Holland. Pieces of granite, gneiss, various schists, porphyries, and other rocks, probably from the north of Europe, occur in the till of Norfolk.¹⁰ These transported fragments are an impressive testimony to the movements of the northern ice. No Scandinavian blocks have been met with in Scotland, for the Scottish ice was massive enough to move out into the basin of the North Sea, until it met the northern ice-

¹⁰ These erratics, from their petrographical characters, appear to me to be certainly not from Scotland. Had that been their source they could not have failed to be accompanied by abundant fragments of the rocks of the south of Scotland, which are continuously absent. See V. Madsen, *Quart. Journ. Geol. Soc.* xlix. 1893, p. 114.