

that deposit, as already described (p. 1661), there is seen, here and there, on the Norfolk coast, a local or intermittent bed of clay containing remains of Arctic plants (*Salix polaris*, *Betula nana*, etc., Fig. 454), together with the little marmot-like rodent *Spermophilus*. These relics of a terrestrial vegetation are drifted specimens, but they cannot have travelled far, and they probably represent a portion of the Arctic flora which had already found its way into the middle of England before the advent of the ice-sheet. Judging from the present distribution of the same plants, we may infer that the climate had become about 20° colder than it was during the time represented by the Forest-bed—a difference as great as that between Norfolk and the North Cape at the present day.<sup>3</sup>

The Northern Ice-sheet.—At the base of the glacial deposits, the solid rocks over the whole of northern Europe and America present the characteristic smoothed flowing outlines produced by the grinding action of land-ice (p. 720). The rock-surfaces that look away from the quarter whence the ice moved are usually rough and weatherworn (*Leeseite*), while those that face in that direction (*Stoss-seite*) are all ice-worn. Even on a small boss of rock or along the side of a hill, it is commonly not difficult to tell which way the ice flowed, by noting toward which point the striæ run and the rough faces look. Long exposed, the peculiar ice-worn surface is apt to be effaced by the disintegrating action of the weather, though it retains its hold with extraordinary pertinacity. Along the fjords of Norway and the sea-lochs of the west of Scotland, it may be seen slipping into the water, smooth, bare, pol-

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<sup>3</sup> C. Reid, Horizontal Section, No. 127 of Geol. Survey, and "Geology of the Country around Cromer" (sheet 68 E), in *Memoirs of Geol. Survey*, 1882.