

foot of the bare high grounds down to the inner edge of the terrace of the last raised beach, where it runs as a steep sinuous grassy bank worn here and there into some of its characteristic and fantastic forms.¹ The lowlands of Moray between the hills and the sea owe much of their fertile character to their covering of boulder-clay and gravelly drift. The green rampart-like slopes along the coast, and the steep grassy banks and raw clay 'scaurs' along the river-courses, are traceable northward to the far headlands of the Pentland Firth. The high boulder-clay cliffs at Rosemarkie are conspicuous from almost all parts of the Moray Firth. Inland, too, at Tain, the same deposit rises in a line of bold bluffs, that mark the limits of an ancient shore. At the Ord of Caithness it is seen capping the headlands of granitic rock, but northward, where the mountainous tracts of Sutherland sink into the plains of Caithness, it spreads far and wide over the surface, choking up the shallow valleys, and forming green banks in the inner parts of sheltered bays. The Caithness boulder-clay contains abundant fragments of marine shells, which, taken together with the evidence of the ice-markings on the rocks, and of transport furnished by the striated stones, show that the ice crossed the bed of the Moray Firth, and was pushed up north-westward across the plains of Caithness.

In most Highland glens, boulder-clay may be found covering the bottoms, and rising up into the hollows on either side. So distinct is the smooth rush-covered surface of the ground over this deposit, that its limits can be traced by the eye even at a distance of a mile or more. But the debris of the ice-sheet in these high grounds has been to a large extent scraped off, or buried by the local glaciers

¹ See Hugh Miller's description of this scenery in his *Schools and Schoolmasters*.