

of the rocks out of which it was formed ; but it is, even where least fertile, a better subsoil than the rock itself would have been ; and in many a district it furnishes our heaviest wheat soils. To the sand and gravel formed out of it, and spread partially over it, we owe a class of soils generally light, but kindly ; and the brick clays are not only of considerable value in themselves, but of such excellence as a subsoil, that the land which overlies them in the neighbourhood of Edinburgh still lets at from four to five pounds per acre. I suspect that, in order to be fully able to estimate the value of a subsoil, one would need to remove to those rocky lands of the south that seem doomed to hopeless barrenness for want of one. It is but a tedious process through which the minute lichen or dwarfish moss, settling on a surface of naked stone, forms, in the course of ages, a soil for plants of greater bulk and a higher order ; and had Scotland been left to the exclusive operation of this slow agent, it would be still a rocky desert, with perhaps here and there a strip of alluvial meadow by the side of a stream, and here and there an insulated patch of mossy soil among the hollows of the crags ; but, though it might possess its few gardens for the spade, it would have no fields for the plough. We owe our arable land to that geologic agent which, grinding down, as in a mill, the upper layers of the surface rocks of the kingdom, and then spreading over the eroded strata their own débris, formed the general basis in which the first vegetation took root, and in the course of years composed the vegetable mould. A foundering land under a severe sky, beaten by tempests and lashed by tides, with glaciers half choking up its cheerless valleys, and with countless icebergs brushing its coasts and grating over its shallows, would have seemed a melancholy and hopeless object to human eye, had there been human eyes to look upon it at the time ; and yet such seem to have been the