

hillsides had never echoed the sound of human voice, but when over hill and valley, over river and sea, there had fallen a silence as of the grave, when one wide pall of snow and ice stretched across the landscape ; to restore, in imagination, the vast ice-sheet filling up the whole wide firth, and creeping slowly and silently southwards, and the valley-glaciers into which this ice-sheet shrank, threading yonder deep Highland glens, which to-day are purple with heather and blithe with the whirring of grouse and woodcock ; to seal up the firth once more in ice as the winter frosts used to set over it, and to cover it with bergs and ice-rafts that marked the short-lived Arctic summer ; to bring back again the Arctic plants and animals of that early time, the reindeer, the mammoths, and their contemporaries ; and thus, from the green and sunny valley of the Clyde, with all its human associations, to pass at once and by a natural transition to the sterility and solitude of another Greenland, is an employment as delightful as man can well enjoy. The contrast, though striking, is only one of many which the same district, or indeed any part of the country, presents to a geological eye. And it is the opening up of these contrasts, based as they always must be upon a careful and often a laborious collection of facts, which entitles geology to be ranked at once among the most logical and yet amid the most imaginative pursuits in all the wide circle of science.

Though the abrasion of the surface of the country was the chief work of the great ice-sheets, it is by no means the only record they have left in the present scenery of the Highlands. The amount of solid rock ground away by the passage of the ice over it was vast, and the quantity of detritus produced must have been proportionately great. The rivers that issue from Alpine glaciers are thickly charged with fine mud made by the friction of the sand and stones