

moraines ; and beneath all—for the underlying Old Red Sandstone of the district is not exposed amid the level wastes of Culbin—rested the boulder clay, the memorial of a time of submergence, when Scotland sat low in the sea as a wintry archipelago of islands, brushed by frequent icebergs, and when sub-arctic molluses lived in her sounds and bays. A section of a few feet in vertical extent presented me with four distinct periods. There was, first, the period of the sand-flood, represented by the bar of pale sand ; then, secondly, the period of cultivation and human occupancy, represented by the dark plough-furrowed belt of hardened soil ; thirdly, there was the gravel ; and, fourthly, the clay. And that shallow section exhausted the historic ages, and more ; for the double band of gravel and clay belonged palpably to the geologic ages, ere man had appeared on our planet. There had been found in the locality, only a few years previous to this time, a considerable number of stone arrow-heads,—some of them only partially finished, and some of them marred in the making, as if some fletcher of the stone-age had carried on his work on the spot ; and all these memorials of a time long anterior to the first beginnings of history in the island were restricted to the stratum of hardened mould.

I carried on my researches in this—what I may term the chronological—direction, in connection with the old-coast line, which, as I have already said, is finely developed in the neighborhood of Cromarty on both sides of the Frith, and represented along the precipices of the Sutors by its line of deep caves, into which the sea never now enters. And it, too, pressed upon me the fact of the amazing antiquity of the globe. I found that the caves hollowed by the surf, when the sea had stood from fifteen to five-and-twenty feet above its present level, or, as I should perhaps rather say, when the land had stood that much lower, were deeper, on the average, by about one-third, than those caves of the present coast-line that are still in the course of being hollowed by the waves. And yet the waves have been breaking against the present coast-line during the whole of the historic period. The ancient