

separate glaciers filling many a valley now wooded with fir and birch. Lastly, under the influence of the Gulf Stream, and various changes in the height and extent of land in the arctic circle, a melting of nearly all the permanent ice between latitudes 60° and 70° north, corresponding to the parallels of the continental ice of Greenland, has occurred, so that we have now to go farther north than lat. 70° before we encounter any glacier coming down to the sea coast. Among other signs of the last retreat of the extinct glaciers, Kjerulf and other authors describe large transverse moraines left in many of the Norwegian and Swedish glens.

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We may now consider whether any, and what part, of these changes in Scandinavia may have been witnessed by Man. In Sweden, in the immediate neighbourhood of Upsala, I observed, in 1834, a ridge of stratified sand and gravel, in the midst of which occurs a layer of marl, evidently formed originally at the bottom of the Baltic, by the slow growth of the mussel, cockle, and other marine shells of living species intermixed with some proper to fresh water. The marine shells are all of dwarfish size, like those now inhabiting the brackish waters of the Baltic; and the marl, in which myriads of them are imbedded, is now raised more than a hundred feet above the level of the Gulf of Bothnia. Upon the top of this ridge (one of those called osars in Sweden) repose several huge erratics, consisting of gneiss for the most part unrounded, from nine to sixteen feet in diameter, and which must have been brought into their present position since the time when the neighbouring gulf was already characterised by its peculiar fauna. Here, therefore, we have proof that the transport of erratics continued to take place, not merely