months in the year. The temperature of the mud at the bottom was between 32° and 33° Fahrenheit, and that of the water at the surface 41°, and of the air 33° Fahrenheit.

In Greenland, north of Disco island, between latitude 70° and 71° N., in a deep channel of the sea, separating the peninsula of Noursoak from the island of Omenak, a region where the largest icebergs come down into Baffin's Bay, Dr. Torell dredged up besides more than twenty other mollusks, *Terebratella Spitzbergensis*, living at a depth of 250 fathoms. This shell I found fossil in 1835, at Uddevalla, in the ancient glacial beds, far south of its present range. The bottom of the sea in the Omenak Channel consisted of impalpable mud, and on the surface of some of the floating bergs was similar mud, on which they who trod sank knee-deep; also numerous blocks of granitic and other rocks of all sizes, most of them striated on one, two, or more sides. Here, therefore, a deposit must be going on of mud containing marine shells, with intermingled glaciated pebbles and boulders.

A species of Nucula (*Leda truncatà* or *Yoldia truncata* Brown), now living in the seas of Spitzbergen, North Greenland, and Wellington Channel, Parry Islands, was found by Dr. Torell to be one of the most characteristic species in the mud of those icy regions. Of old, in the glacial period, the same shell ranged much farther south than at present, being found embedded in the boulder clay of the south of Norway and Sweden as well as of Scotland. It has lately been observed by the Rev. Thomas Brown, together with many other exclusively arctic species, at Elie, in the south of Fife, in glacial clay, at the level of high-water mark. I have myself collected it in a fossil state in the glacial clay of Portland and other localities in Maine in North America. It is the shell well known as *Leda Portlandica* of Hitchcock.

In ponds and lakes in 'the outskirts' of North Greenland, in Disco Island for example, no freshwater mollusca were ever met with by Dr. Torell, though some species of crustacea of the genera Apus and Branchipus inhabit such waters. This may help us to explain the want of fossils in all glacial deposits of fluviatile or lacustrine origin. The discoveries above referred to show that the marine glacial beds of the Clyde (p. 244) and those of Elie in Fife, with their arctic shells, are precisely such formations as might be looked for as belonging to a period when Scotland was undergoing glaciation as intense as that to which Spitzbergen and North Greenland are now subjected.