

American geologists who have so successfully traced its distribution and investigated its structure. The conditions, however, under which the drift rampart in question was formed certainly differed widely from those that determine an ordinary terminal moraine. The constituent materials can hardly have travelled on the surface of the ice, but must rather have lain underneath it or have been pushed forward in front of it. But the mode of formation is a problem which has not yet been satisfactorily solved.

There seems good reason to believe that there are at least two "terminal moraines" belonging to two distinct and perhaps widely separated epochs in the Ice Age. The most southerly and therefore oldest of them begins on the Atlantic border off the southeastern coast of Massachusetts, where it is partially submerged. Rising above the level of the sea in Nantucket Island, Martha's Vineyard, No Man's Island and Block Island, it is prolonged into Long Island, of which it forms the backbone, and where it reaches heights of 200 to nearly 400 feet. A second or later and less prominent line of drift-hills runs along the north shore of Long Island, and is prolonged by Fisher's Island into the southern edge of the State of Rhode Island, whence, striking out again to sea, it forms the chain of the Elizabeth Islands, passes thence into the State of Massachusetts, and runs nearly east and west through the peninsula of Cape Cod. The distance between these two bands of hummocky ridge varies from five to thirty miles. From the western end of Long Island the moraine passes across Staten Island and the northern part of New Jersey, enters Pennsylvania a little north of Easton, and follows a sinuous northwesterly course across that State and for some miles into the State of New York, where, forming a deep indentation, it wheels round in a southwesterly direction, re-enters Pennsylvania, and passes into Ohio. Throughout this long line, the moraine coincides with the southern limit of the drift and of rock-striation, though in western Pennsylvania, in front of the ridge, scattered northern boulders are found over a strip of ground which gradually increases southwestward to a breadth of five miles.⁴⁵ Beyond central Ohio, however, the drift extends far to the south. Taking its limits as probably marking the extreme boundary

⁴⁵ This strip of ground, called by the late Prof. H. C. Lewis the "fringe," widens out southwestward, as stated above, to a breadth of five miles, in which, though there are no rock-striae or drift, scattered northern boulders occur. *Op. cit.* p. 201.