the southern half of the North Sea forming a plain watered by the Rhine. The *Yoldia* (*Leda*) *myalis* bed, resting transgressively sometimes on the Forest Bed and sometimes on the Weybourn Crag, indicates a slight depression of the estuary, and the prevalence of boreal and arctic conditions. At the top of this sequence we find the arctic fresh-water bed with plant-remains, proving a great lowering of temperature, which, in the opinion of Mr Clement Reid, may have allowed the seas to be blocked with ice during the winter, and glaciers to form in the hilly districts. From these data it would appear that at this stage in Norfolk the relative position of land and sea must have been much the same as at the present time. Evidence tending to support this conclusion has been recently obtained in the south of Ireland. In view of these data, there can be little doubt that the refrigeration of climate which culminated in the glacial period was a slow and gradual process.

Before proceeding to describe the glacial phenomena of Scotland, we ought to call special attention to the fact that the main valley systems of the country and the dominant features of the High Plateau had been determined in pre-glacial time. The prolonged glaciation of the mainland and the outer islands produced important modifications of these physical features, which have survived to the present day.

Throughout Scotland there is overwhelming evidence of the intense glaciation of the northern part of Britain. The phenomena point to (1) a period of maximum glaciation, when the Scottish and Scandinavian ice-sheets coalesced on the floor of the North Sea; (2) a period of valley glaciers which became confluent in certain areas. Each epoch is characterised by different centres of ice dispersal, by different methods of ice erosion, and by distinctive glacial accumulations.

MAXIMUM GLACIATION

During the period of maximum extension the ice must have enveloped the whole country and radiated from three great centres; the first being situated in the Northern Block, to the north-west of the Great Glen; the second, in the Central Block, between the Great Glen and the eastern border of the Highlands; and the third, in the Southern Uplands. The ice-shed of the Northern Block ran approximately north and south, and over a large part of the area lay to the east of the present watershed; that of the Central Block appears to have had a short axis trending generally east and west, and situated in the region of the Moor of Rannoch; while that of the Southern Block ran in a north-east and south-west direction along the crest of the Southern Uplands, from Broadlaw in Peeblesshire to the Merrick in Kirkcudbrightshire. Beyond these main