

to floating ice, during submergence. The signs of glacial action have been traced by Professor Jukes to elevations of 2,500 feet in the Killarney district, and to great heights in other mountainous regions; but marine shells have rarely been met with higher than 600 feet above the sea, and that chiefly in gravel, clay and sand in Wicklow and Wexford. They are so rare in the drift east of the Wicklow mountains, that an exception to the rule, lately observed at Ballymore Eustace, by Professor Jukes, is considered as a fact of no small geological interest. The wide extent of drift of the same character, spread over large areas in Ireland, shows that the whole island was, in some part of the glacial period, an archipelago, as represented in the maps, figs. 39, 40, pp. 276 and 278.

Speaking of the Wexford drift, the late Professor E. Forbes states that Sir H. James found in it, together with many of the usual glacial shells, several species which are characteristic of the crag; among others the reversed variety of *Fusus antiquus*, called *F. contrarius*, and the extinct species *Nucula Cobboldiae*, and *Turritella incrassata*.\* Perhaps a portion of this drift of the south of Ireland may belong to the close of the newer pliocene period, and may be of a somewhat older date than the shells of the Clyde, alluded to at p. 244. They may also correspond still more nearly in age with the fauna of the uppermost strata of the Norwich Crag, occurring at Chillesford, and alluded to p. 211.

The scarcity of mammalian remains in the Irish drift favours the theory of its marine origin. In the superficial deposits of the whole island, I have only met with three recorded examples of the mammoth, one in the south near Dungarvan, where the bones of *Elephas primigenius*, two species of bear (*Ursus Arctos*, and *Ursus spelæus*?), the

\* Forbes' Memoirs of Survey, &c., vol. i. p. 377.