

site of the submerged forests. But that the sea, even though tenanted in these northern parts by a limestone-making fauna, was not so clear and well suited for the development of animal life during some of these submergences as it was further south, seems to be proved by the paucity and dwarfed forms of the fossils, as well as by the admixture of clay in the stone.

Ireland presents a development of Carboniferous rocks which on the whole follows tolerably closely that of the sister island. In the northern counties, the lowest members are evidently a prolongation of the type of the Scottish Calciferous Sandstones. In the southern districts, however, a very distinct and peculiar facies of Lower Carboniferous rocks is to be observed. Between the Old Red Sandstone and the Carboniferous Limestone there occurs in the county of Cork an enormous mass (fully 5000 feet) of black and dark-gray shales, impure limestones, and gray and green grits, which have been so affected by slaty cleavage as to have assumed more or less perfectly the structure of true cleaved slates. To these rocks the name of Carboniferous Slate was given by Griffith. They contain numerous Carboniferous Limestone species of brachiopods, echinoderms, etc., as well as traces of land-plants in the grit bands. Great though their thickness is in Cork, they rapidly change their lithological character and diminish in mass, as they are traced away from that district. In the almost incredibly short space of 15 miles, the whole of the 5000 feet of Carboniferous Slate of Bantry Bay seems to have disappeared, and at Kenmare the Old Red Sandstone is followed immediately and conformably by the Limestone with its underlying shale. This rapid change is probably to be explained, as Jukes suggested, by a lateral passage of the slate into limestone; the Carboniferous Slate being, in part at least, the equivalent of the Carboniferous Limestone. Between Bandon and Cork the Carboniferous Slate is conformably overlain by dark shales containing Coal-measure-fossils, and believed to be true Coal-measures. Hence in the south of Ireland, the thick calcareous accumulations of the limestone series appear to be replaced by a corresponding depth of argillaceous sedimentary rocks.²¹¹

The Carboniferous Limestone swells out to a great thickness, and covers a large part of Ireland. It attains a maximum in the west and southwest, where, according to Mr.

²¹¹ J. B. Jukes, *Memoirs Geol. Survey, Ireland. Explanation of Sheets 194, 201 and 202, p. 18; Explanation of Sheets 187, 195 and 196, p. 35.*