PREFACE.

although he always wrote doubtfully on the subject, has now been ascertained to be, not Old Red, but Silurian. In Sir Roderick's last Address to the British Association, he says,-'Professor Sedgwick and himself had thirty-one years ago ascertained an ascending order from gneiss, covered by quartz rocks, with limestone, into overlying quartzose, micaceous, and other crystalline rocks, some of which have a gneissose character. They had also observed what they supposed to be an associated formation of red grit and sandstone: but the exact relations of this to the crystalline rocks was not ascertained, owing to bad weather. In the meantime, they, as well as all subsequent geologists, had erred in believing the great and lofty masses of purple and red conglomerate of the western coast were of the same age as those on the east, and therefore 'Old Red Sandstone.' . . . 'Professor Nicol had suggested that the quartzites and limestones might be the equivalent of the Carboniferous system of the south of Scotland. Wholly dissenting from that hypothesis, he (Sir Roderick) had urged Mr. Peach to avail himself of his first leisure moments to re-examine the fossil-beds of Durness and Assynt, and the result was the discovery of so many forms of undoubted Lower Silurian characters (determined by Mr. Salter), that the question has been completely set at rest, there being now no less than nineteen or twenty species of M'Lurea, Murchisonia, Cephalita, and Orthoceras, with an Orthis, etc., of which ten or eleven occur in the Lower Silurian rocks of North America.'

This change would demand an entirely new map of the Geology of Scotland; for there is clearly ascertained to be an ascending series from west to east, beginning with an

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