

ably, and fossils discovered in the north of Scotland by Mr. Peach prove that Lower Silurian rocks (somewhat metamorphic) rest unconformably on both.

Till within the last few years it was customary to consider that all formations which had not yielded fossilised fresh-water shells were of marine origin. Mr. Godwin-Austen first broke through this fallacy, and often insisted that the Old Red Sandstone, as distinct from the Devonian rocks, was deposited in fresh-water lakes.

In 1871, I published two memoirs in the *Journal of the Geological Society*, in which I attempted to prove that in a broad sense, the red formations of Britain were deposited in lakes, salt or fresh, or in inland areas in which salt and fresh water alternated. In one of these,¹ I ventured to state 'that the absence of marine mollusca in the Cambrian rocks' of North Wales and the Longmynd, as yet observed, may be due to the same cause that produced their absence in the Old Red Sandstone (see p. 106), and that 'the presence of sun-cracks and rain-pittings in the Longmynd beds favours this suggestion.' The occurrence of marine fossils, chiefly in the grey slates and 'olive-green grits and shales' of St. David's, as described by Mr. Hicks, 'may,' I state, 'possibly mark occasional influxes of the sea into inland waters, due to oscillations of level,' producing the same kind of alternations of marine and fresh-water strata that occur in the Carboniferous series, and in the Miocene beds of Switzerland and the Rhine.

It is but right to state, however, that, as regards the Cambrian rocks, mine is not the usual opinion.

The LOWER SILURIAN rocks which conformably

¹ On the Red Rocks of England of older date than the Trias. March 1871, '*Journal of the Geological Society*,' vol. xxviii.