

globe in general. The Coal-measures are grey, black, and blue; but in the upper portion they sometimes change to a red tint. During the Coal-period we have evidence of estuarine conditions; but subsequently the access of the sea was cut off, and the Permian rocks were formed in vast inland lakes.

Prof. HUGHES remarked that the group referred to by Principal Dawson under the head of Permo-Carboniferous could not be considered as in any way proving a passage from Carboniferous to Permian, seeing that the Permian was altogether wanting in Eastern America, unless the fossils approached those of undoubted Permian in Europe. But he pointed out that many large portions of the so-called Permian of Europe had been already proved to be only stained Carboniferous. The fossil lists were founded on a wrong classification of the rocks, which had not yet been set right. Believing, therefore, that the Permian system must be broken up and part given back to the Lower New Red and Magnesian Limestone series, previously so well established, and part to the Upper Carboniferous, he was inclined to refer the Permo-Carboniferous of Principal Dawson to the latter, the difference in the plants being only such as might reasonably be expected between the newer and older portions of a series representing immense lapse of time and changing conditions. Principal Dawson had shown that the beds in question were similar in almost all but colour, and conformable to the underlying undoubted Carboniferous. If, therefore, they were higher than any Carboniferous beds of England, they must be synchronous with the lower part of the unrepresented time between the Carboniferous and so-called Permian; but being more closely connected with the lower rocks, he saw no necessity in the present state of our knowledge for such a term as Permo-Carboniferous.

Prof. RAMSAY could not agree with Prof. Hughes in his opinion as to the value of the term Permian. The staining of rocks occurs in two ways—namely, by infiltration from above through overlying beds, and by direct deposition. Silurian rocks are often stained in the former manner.

Mr. EVANS remarked that this paper had given rise to an interesting discussion. The fact of the two deposits being conformable in one place and unconformable in another, did not, in his opinion, necessarily convert them into one system. He thought there were symptoms that the Permian would eventually be regarded as Upper Carboniferous. He believed that there was a third mode in which rocks were stained—namely, by the oxidation of iron already existing in the beds.