

with the coal strata, and is a part of that formation.* If such a red sandstone, distinct from the new red sandstone, exist any where in England, it is near Oldham and Rochdale in Lancashire. The sandstone of Lancashire is coloured in Mr. Greenough's Geological Map of England, as the new red sandstone, and in Mr. Smith's Geological Map, as the old red sandstone; but I am inclined to believe, that the true position (*gisement*) of this sandstone in many parts of Lancashire, is not yet ascertained: its relations with the coal strata are different from those of the new red sandstone in other parts of England.—I propose to revert to this subject in a subsequent chapter.

Professor Sedgwick, in a paper recently read at the Geological Society of London, but not yet published, has described the red sandstone formation on the north-western side of England, which had not before been sufficiently examined. The formation agrees with that on the eastern side of England in its leading features. First, there rest unconformably over coal measures of Whitehaven,

1. Coarse sandstone of great thickness, or the lower red sandstone.
2. Magnesian conglomerate beds of considerable thickness.
3. Magnesian limestone.
4. Lower red marl and gypsum.
5. Red and variegated sandstone.

The sandstone No. 2. and also other beds of red sandstone, sometimes approach to a position nearly conformable to that of the coal measures. *Too much importance appears to me to be attached to this circumstance; for whenever the coal strata take nearly an horizontal position, the upper unconformable strata will take the same position, and may therefore be conformable in such situations, and unconformable in others where the subjacent strata are more inclined.*

* Le Grès, masse principale de terrain houiller, prend souvent une grand extension, en abandonnant au moins en majeure partie la houille avec l'argile schisteuse qui l'enveloppe.—*Daubuisson, Traité de Géognosie, tome 2.*

M. H. Bonnard, in his *Apperçu Géognostique des Terrains*, p. 144., describes the red sandstone as the upper part of the coal formation.

A. Humboldt, in his *Essai Géognostique sur le Gisement des Roches*, p. 199., mentions a red sandstone passing into porphyry, as the upper part of the coal formation in Germany.

Messrs. Daubuisson, and Bonnard, appears to have mistaken the lowest part of the red marl and sandstone, for a portion of the regular coal strata. M. Humboldt, makes a distinction between the unconformable red sandstone and the porphyritic red sandstone, which he cites as a part of the regular coal formation.