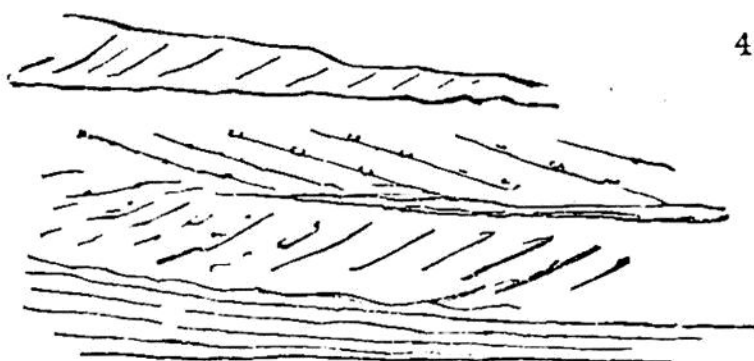


chert occur in the north of England (Swaledale), and many sandstones are of a cherty nature (Harrowgate).

Ironstone (a carbonate of iron) often accompanies the thick dark plates and shales, in rows or layers of nodules (see *Diag.* No. 21. p. 61.), aggregated round shells (unio), fern branches, &c. Coal lies always in beds. Its quality varies from nearly pure carbon to a consumable mixture of carbon, hydrogen, oxygen, and azote; and it is often mixed with layers of woody fibre, like charcoal, and laminae of earthy matter.

*Structure.*—Throughout all this mass of varied deposits in the carboniferous system, the most decided proofs of aqueous deposits constantly present themselves. *Lamination* belongs, but not equally, to every one of the six constituent members; being often conspicuous in sandstones (flagstones), almost always so in argillaceous rocks and coal; frequent in black limestones, but rare in ironstone. Real beds occur in all these rocks; but in the argillaceous plates and shales they are often indiscernible; in sandstones they are commonly irregular; thick-bedded limestones have nodular or uneven surfaces.

The coarse sandstones (as millstone grit) frequently present oblique lamination, which, added to the irregu-



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larity of the beds, renders it often embarrassing to say what is the true dip of such rocks. (*Diag.* No. 45.)

The divisional structures or cracks, joints, and fissures, vary much in relation to the nature of the rock — its fineness or coarseness of grain, the thickness or thinness of its beds, and the position of the point with regard to axes of elevation and perhaps other causes.