

of attraction for the calcareous matter, while it was in a soft condition.

*Structure.*—In the whole series, not a mass occurs which can be viewed otherwise than as an original deposition, or a subsequent concretion of aqueous sediment. The sandstones are always stratified: sometimes the coarse-grained sorts (Whitby, Tilgate forest) exhibit oblique laminations, the finer sorts often split into flags or slate: shells and plates of oxide or carbonate of iron appear as the result of molecular arrangement round particular masses, as centres of attraction. The clays, as above stated, are either laminated, or appear as vast uniform masses of sediment; bedded they can hardly ever be said to be, unless where interposed between beds of sandstone, or limestone. The ironstones, septaria, and “cone-in-cone” masses occur in the clays, in surfaces always parallel to the planes of stratification, and thus appear to mark periodical changes in the nature of the sediments; but this accumulation is generally the result of molecular attraction round organic bodies. Jet, another frequent substance in the clays, (especially in lias,) lies in laminæ parallel to the stratification, being nothing less than chemically altered coniferous wood.

Thin limestones associated with thick clays, as the lias limestones, are usually laminated or thinly bedded, and interstratified with the clays: thicker rocks, as the Bath oolite, are formed in regular beds of two to four feet in thickness; thin layers of clay often occur between the beds. Oblique lamination belongs to many of the coarse shelly oolites: spongoid bodies, enveloped in siliceous matter, lie in the colitic rocks of Portland and Oxford, but not so regularly as flints do in chalk: there is very little pyrites, and, except in the lower Bath oolite, little oxide or carbonate of iron in the calcareous rocks, above the lias.

*Divisional planes.*—All these rocks are traversed by divisional planes, but very unequally, for the massive clays show few of them; in the calcareous rocks they are both numerous and regular; in the coarse and irregular bedded grits of Yorkshire and Sussex,