

Of argillaceous beds are three principal types :—

Blue clays, often inclosing nodules and beds of compact limestone.

Red, white, and blue clays, with gypsum.

Blue or black shales.

Not one of all these rocks can be considered as universally coextensive with the secondary series: but it appears from examination, that, in most districts, the conditions under which these various deposits happened, were contemporaneous, or at least succeeded one another in the same order. A very general view of the mineral relations of the rocks would allow us to consider the whole secondary series in two parts, — the lower one characterised by red sandstones and red clays, the upper by blue clays and light coloured sandstones; while in each of these divisions occur carboniferous deposits breaking the uniformity of the series. This arrangement is seen below : —

Cretaceous group. } Including the coal deposits of the Weal-  
Oolitic group. } den, Yorkshire, and Bornholm.

New red sandstone group. } Including the principal coal de-  
Old red sandstone group. } posits of Europe.

Nor would such a classification be inapplicable to the calcareous portions of the series, though, as might be expected, these admit of other combinations. Whenever the causes of these successive mineral characters in the secondary rocks shall be known, a great advance will have been made toward a general theory of the stratified crust of the globe.

Turning to the organic remains of the several secondary systems, it is apparent that, within the period of time which elapsed between the deposition of the primary and tertiary strata, two very distinct assemblages of terrestrial plants had flourished and become extinct. The ancient and abundant flora of the carboniferous era, with its lepidodendra, sigillariæ, and calamites, had