

THE MIOCENE PERIOD.

THE Miocene formation is not present in England; unless we suppose, with Sir Charles Lyell, that it is represented by the Hempstead beds of the Isle of Wight.

It is on the European continent that we find the most striking characteristics of the Miocene period. In our own islands traces of it are few and far between. In the Island of Mull certain beds of shale, interstratified with basalt and volcanic ash, are described by the Duke of Argyll as of Miocene date;* and Miocene clay is found interstratified with bands of imperfect coal at Bovey Tracey. The vegetation which distinguished the period is a mixture of the vegetable forms peculiar to the burning climate of the present tropical Africa, with such as now grow in temperate Europe, such as Palms, Bamboos, various kinds of Laurels, Combretaceæ (*Terminalia*), with the grand Leguminales of warm countries (as *Phaseolites*, *Erythrina*, *Bauhinia*, *Mimosites*, *Acacia*); Apocynæ analogous to the genera of our tropical regions; a *Rubiacea* altogether tropical (*Steinhauera*) mingle with some Maples, Walnut-trees, Beeches, Elms, Oaks, and Wych-elms, genera now confined to temperate and even cold countries.

Besides these, there were, during the Miocene period, mosses, mushrooms, charas, fig-trees, plane-trees, poplars, and evergreens. "During the second period of the Tertiary epoch," says Lecoq, "the Algæ and marine Monocotyledons were less abundant than in the preceding age; the Ferns also diminished, the mass of Conifers were reduced, and the Palms multiplied in species. Some of those cited in the preceding period seem still to belong to this, and the magnificent *Flabellaria*, with the fine *Phœnicites*, which we see now for the first time, gave animation to the landscape. Among the Conifers some new genera appear; among them we distinguish *Podocarpens*, a southern form of vegetation of the present age. Almost all the arborescent families have their representatives in the

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