

vegetation of the Jurassic period. The *Sphenophyllum*, among the Tree-ferns, is predominant in this vegetation ; some *Pandanas*, a few *Zamites*, and many *Conifers*, but we perceive no Palms. A coral islet rises out of the sea, having somewhat of the form of the *atolls* of Oceania, indicating the importance these formations assumed in the Jurassic period. The animals represented are the *Crocodylus* of Jourdan, the *Ramphorhynchus*, with the imprints which characterise its footsteps, and some of the invertebrated animals of the period, as the *Asteria*, *Comatula*, *Hemicidaris*, *Pteroceras*. Aloft in the air floats the bird of Solenhofen, the *Archæopteryx*, which has been re-constructed from the skeleton, with the exception of the head, which remains undiscovered.

The rocks which represent the Upper Oolite are usually divided into two series: 1. The *Purbeck Beds*; 2. The *Portland Stone and Sand*; and 3. The *Kimeridge Clay*.

The *Kimeridge Clay*, which in many respects bears a remarkable resemblance to the Oxford Clay, is composed of blue or yellowish argillaceous beds, which occur in the state of clay and shale (containing locally beds of bituminous schist, sometimes forming a sort of earthy impure coal), and several hundred feet in thickness. These beds are well developed at Kimeridge, in Dorsetshire, whence the clay takes its name. In some parts of Wiltshire the beds of bituminous matter have a shaly appearance, but there is an absence of the impressions of plants which usually accompany the bitumen, derived from the decomposition of plants. These rocks, with their characteristic fossils, *Cardium striatulum* and *Ostrea deltoidea*, are found throughout England: in France, at Tonnerre, Dept. Yonne; at Havre; at Honfleur; at Mauvage; in the department of the Meuse it is so rich in shells of *Ostrea deltoidea* and *O. virgula*, that, "near Clermont in Argonne, a few leagues from St. Menchould," says Lyell,* "where these indurated marls crop out from beneath the Gault, I have seen them (*Gryphea virgula*) on decomposing leave the surface of every ploughed field literally strewn over with this fossil oyster."

The second section of this series consists of the oolitic limestone of Portland, which is quarried in the Isle of Portland and in the cliffs of the Isle of Purbeck in Dorsetshire, and also at Chilmark in the Vale of Wardour, in Wiltshire. In France, the Portland beds are found near Boulogne, at Cirey-le-Château, Auxerre, and Gray (Haute Saône).

* "Elements of Geology," p. 393.