

This imperfect coal formation appears to be entirely wanting in England south of the Humber. In Savoy, I examined a coal formation which is placed between two beds of limestone and over lias: this I believe to be analogous in position, to that in the eastern moorlands of Yorkshire.\*

Between the lower and the middle oolites occurs a bed of dark blue clay called Oxford or clunch clay; the thickness has been estimated at two hundred feet. Some of the beds are bituminous, and bear a near resemblance to lias clay; they abound in *Septaria*: other beds are much intermixed with calcareous earth. In the lower part of the Oxford clay, irregular beds of limestone occur, which have received the name of Kelloway rock, from being found near Kelloway bridge, in Wiltshire. The bones of one species of *ichthyosaurus*, different from those in the lias, have been found in the Oxford clay.

The MIDDLE DIVISION of *oolite* consists, 1st, Of beds of siliceous and calcareous sandstone. 2d, Coralline limestone beds, containing numerous madrepores, in some parts called coral ragg. 3d, Oolite, sometimes called Oxford oolite, which agrees in many of its characters with the Bath oolite, in the lower division. The beds of the middle oolite pass into each other, and may be regarded as one formation. They vary much in their thickness and succession in different districts. The average thickness of the whole, has been estimated at two hundred feet.

Between the Middle and the upper Division of oolites, there occurs, in the western counties of England and on the coast of France, near Boulogne, another thick bed of clay, which has received the name of Kimmeridge clay.† It is a greyish clay passing into the state of shale, and is sometimes so bituminous as to be used for fuel: its thickness in some parts is more than one hundred feet. Bones of saurian or lizard-shaped animals have been found in this clay.

The UPPER DIVISION of *oolite* comprises the beds of Portland stone, which have been well described as a calcareo-siliceous free-stone, with beds and nodules of flint. In the Isle of Portland, where the middle bed of the Portland stone is quarried for architectural purposes, it is covered by a cream-coloured stone called *cap*, which is only burned for lime: under this, there are two beds of workable stone, each five feet thick, separated by grey flint, and a third bed of the best stone below. The total thickness of the three beds of building-stone varies from 17 to 24 feet. The Portland series, which forms the upper termination of the English oolites, is neither of great extent (being confined to the county of Dorsetshire), nor of considerable thickness. It is succeeded by beds of limestone, called the

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\* Travels in the Tarentaise.

† From Kimmeridge in Dorsetshire, where the bituminous shale is called Kimmeridge coal.