

The Wealden is divisible into two minor groups :

	Thickness.
1st. Weald Clay, chiefly argillaceous, but sometimes including thin beds of sand and shelly limestone with <i>Paludina</i>	140 to 280 ft.
2d. Hastings Sand, chiefly arenaceous, but in which occur some clays and calcareous grits* - - -	400 to 1000 ft.

Another freshwater formation, called the Purbeck, consisting of various limestones and marls, containing distinct species of mollusks, *Cyprides*, and other fossils, lies immediately beneath the Wealden in the southeast of England. As it is now found to be more nearly related, by its organic remains, to the Oolitic than to the Cretaceous series, it will be treated of in the 20th chapter.

Weald Clay.

The upper division, or Weald Clay, is of purely freshwater origin. Its highest beds are not only conformable, as Dr. Fitton observes, to the inferior strata of the Lower Greensand, but of similar mineral composition. To explain this, we may suppose, that, as the delta of a great river was tranquilly subsiding, so as to allow the sea to encroach upon the space previously occupied by fresh water, the river still continued to carry down the same sediment into the sea. In confirmation of this view it may be stated, that the remains of the *Iguanodon Mantelli*, a gigantic terrestrial reptile, very characteristic of the Wealden, has been discovered near Maidstone, in the overlying Kentish rag, or Marine limestone of the Lower Greensand. Hence we may infer, that some of the saurians which inhabited the country of the great river continued to live when part of the country had become submerged beneath the sea. Thus, in our own times, we may suppose the bones of large alligators to be frequently entombed in recent freshwater strata in the delta of the Ganges. But if part of that delta should sink down so as to be covered by the sea, marine formations might begin to accumulate in the same space where freshwater beds had previously been formed ; and yet the Ganges might still pour down its turbid waters in the same direction, and carry seaward the carcases of the same species of alligator, in which case their bones might be included in marine as well as in subjacent freshwater strata.

The *Iguanodon*, first discovered by Dr. Mantell, has left more of its remains in the Wealden strata of the southeastern counties and Isle of Wight than has any other genus of associated saurians. It was an herbivorous reptile, and regarded by Cuvier as more extraordinary than any with which he was acquainted ; for the teeth, though bearing a great analogy, in their general form and crenated edges (see figs. 303, *a*, 303, *b*), to the modern Iguanas which now frequent the tropical woods of America and the West Indies, exhibit many striking and important differences. It appears that they have often been worn by the process of mastication ; whereas the existing herbivorous reptiles clip and gnaw off

* Dr. Fitton, Geol. Trans. Second Series, vol. iv. p. 320.