

I have now to describe a series of deposits that were formed at the mouth of a river in a large delta, comparable in size to the largest deltas of the living world, and consisting of the following subdivisions, the oldest being placed at the bottom :

Purbeck	{	Weald Clay.
and		Hastings Sands and Clays.
Wealden Series.		Purbeck Limestone Marls and Clays.

The events that brought about the formation of these strata seem to have been as follows :

By the deposition of that series of beds of limestone and shales that constitute the Oolitic strata, a great marine area was more or less filled with sediments, the last of which is the Portland Limestone. Probably aided by partial upheaval of the flat-lying strata, a portion of this area was invaded by the waters of a large continental river, the rise of land having been sufficient to unite Britain with the Continent of what is now Europe, which, however, at that time presented very different contours from those of the present day. We must now conceive the old islands, which I described in the last chapter, as forming groups of hills and mountains, rising out of vast plains, the surface of which consisted of horizontal or nearly horizontal Upper Oolitic strata, through which, from some far-off unknown sources, a long and broad river ran. The earliest strata of the Purbeck Beds must have been formed in open, clear, fresh water, in the broad mouth of this river, for near Tisbury in Wiltshire, they pass gently into each other, the marine strata of the Portland and Purbeck Limestones being firmly united in the same quarries. The lowest beds of the Purbeck strata are of fresh-water origin, and on the whole the transition from the uppermost marine beds of the Portland, to the lowest fresh-water strata of the