small distance from the shore of the delta; it afterwards increases gradually to 50, and then suddenly descends to 380 fathoms, which is, perhaps, the original depth of the sea where it has not been rendered shallower by fluviatile matter. We learn from Lieut. Newbold that nothing but the finest and lightest ingredients reach the Mediterranean, where he has observed the sea discoloured by them to the distance of 40 miles from the shore.* The small progress of the delta in the last 2000 years affords, perhaps, no measure for estimating its rate of growth when it was an inland bay, and had not yet protruded itself beyond the coast-line of the Mediterranean. A powerful current now sweeps along the shores of Africa, from the Straits of Gibraltar to the prominent convexity of Egypt, the western side of which is continually the prey of the waves; so that not only are fresh accessions of land checked, but ancient parts of the delta are carried away. By this cause Canopus and some other towns have been overwhelmed; but to this subject I shall again refer when speaking of tides and currents.

CHAPTER XIX.

OCEANIC DELTAS.

Deltas of the Ganges and Brahmapootra — Formation and destruction of islands — Abundance of crocodiles — Inundations — Boring in the delta at Calcutta — Quantity of mud carried down by the Ganges — Grouping of new strata in general — Convergence of deltas — Conglomerates — Various causes of stratification — Direction of laminæ — Interchange of land and sea.

Delta of the Ganges. — WHEN rivers, on entering the sea, are exposed to the influence of the tides, it frequently happens that an estuary is produced, or negative delta, as Rennell termed it, where, instead of any encroachment of the land upon the sea, the ocean enters the river's mouth, and penetrates into the land beyond the general coast-line. Where this happens, the tides and currents are the predominating agents in the distribution of transported sediment. The phenomena, therefore, of such estuaries will be treated of when the movements of the ocean come under consideration. But whenever the volume of fresh water is so great as to counteract and almost neutralize the force of tides and currents, and in all cases where these agents have not sufficient power to remove to a distance the whole of the sediment periodically brought down by rivers, oceanic deltas are produced.

* Quart. Journ. Geol. Soc. 1848, vol. iv. p. 342.