

of strong winds, and to their influence we may attribute the diffusion of finer mud far and wide over great areas; for, by numerous soundings made during the late survey, it was ascertained that the bottom consists generally of a very adhesive clay, containing shells of the species at present existing in the lake. When exposed to the air, this clay immediately becomes indurated in so great a degree, as to require a smart blow to break it. It effervesces slightly with diluted nitric acid, and is of different colours in different parts of the lake; in one district blue, in another red, and in a third white, hardening into a substance resembling pipe-clay.\* From these statements, the geologist will not fail to remark how closely these recent lacustrine formations in America resemble the tertiary argillaceous and calcareous marls of lacustrine origin in Central France. In both cases many of the genera of shells most abundant, as *Limnea* and *Planorbis*, are the same; and in regard to other classes of organic remains there must be the closest analogy, as I shall endeavour more fully to explain when speaking of the imbedding of plants and animals in recent deposits.

## DELTAS OF INLAND SEAS.

*Baltic.*—Having thus briefly considered some of the lacustrine deltas now in progress, we may next turn our attention to those of inland seas.

The shallowing and conversion into land of many parts of the Baltic, especially the Gulfs of Bothnia and Finland, have been demonstrated by a series of accurate observations, for which we are in a great measure indebted to the animated controversy which has been kept up, since the middle of the last century, concerning the gradual lowering of the level of the Baltic. I shall revert to this subject when treating of the slow and insensible upheaving of the land in certain parts of Sweden, a movement which produces an apparent fall in the level of the waters, both of the Baltic and the ocean.† It is only necessary to state in this place, that the rapid gain of low tracts of land near Torneo, Piteo, and Luleo, near the head of the Gulf of Bothnia, are due to the joint operation of two causes—the influx of sediment from numerous rivers, and a slow and general upward movement of the land itself, and bed of the sea, at the rate of several feet in a century.

*Delta of the Rhone.*—I have already alluded, when treating of the transporting power of rivers, to the delta of the Po in the Mediterranean. No other inland sea affords so many examples of accessions of new land at the mouths of rivers within the records of authentic history. The lacustrine delta of the Rhone in Switzerland has already been considered—its contemporaneous marine delta may now be described. Scarcely has the river passed out of the Lake of

\* Trans. of Lit. and Hist. Soc. of Quebec, vol. i. p. 5. 1829. Gradual Rise of the Land in Sweden," Phil. Trans. 1835, part i.

† See a paper by the author "On the