

tions over the various parts thus carried forward, along with the aid of encroaching vegetation, a large portion of a delta may become emerged. More than two thirds of the Mississippi delta in the ordinary state of the river are above water; and over this part are plantations of rice, sugar, and cotton, and cypress forests. The area of actually productive land within it is 22,920,320 acres; of reclaimable land, 35,813 square miles. But if the river were unrestrained by levees, the highest floods would fill the alluvial basin and make a sea 600 miles long, 60 miles in mean width, and $12\frac{1}{2}$ feet in mean depth. (C. G. Forshey, 1873.) The force of the flood-waters of the Mississippi is so great, and the amount of transported detritus so large, that the stream pushes out its long arms into the Gulf, by its method of depositing load after load; and it is still continuing its elongations at the extremities of the passes.

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Delta of the Mississippi.

The shallow waters within one to three miles of the main channel at the mouth of the Mississippi River (see map) are dotted with what are called *mud-lumps*,—convex or low conical elevations, sometimes 100 feet or more in diameter, showing their tops at the surface. They originate in upheavals of the soft but tough bottom. Once formed, they discharge mud from the top, which gives to the material of the low cone the structure of a volcanic cone, the successive layers being, however, of mud, and but a fraction of an inch thick. They finally collapse; and then the cavity of the cone sometimes becomes the site of a pool of salt-water, like the lake in an extinct volcano. They are formed, according to Professor E. W. Hilgard (from whose excellent description in the *American Journal of Science*, 1871, the facts here given are cited, and who adopts, in the main