

tity of mud held in suspension, increases regularly with the increased height and velocity of the stream. On the whole, comparing the flood season with that of clearest water, his experiments, continued down to 1849; give an average annual quantity of solid matter somewhat less than his first estimate, but not varying materially from it. From these observations, and those of Dr. Carpenter and Mr. Forshey (an eminent engineer, to whom I have before alluded), on the average width, depth, and velocity of the Mississippi, the mean annual discharge of water and sediment was deduced. I then assumed 528 feet, or the tenth of a mile, as the probable thickness of the deposit of mud and sand in the delta; founding my conjecture chiefly on the depth of the Gulf of Mexico between the southern point of Florida and the Balize, which equals, on an average, 100 fathoms, and partly on some borings, 600 feet deep, in the delta near Lake Pontchartrain, north of New Orleans, in which the bottom of the alluvial matter is said not to have been reached. The area of the delta being about 13,600 square statute miles, and the quantity of solid matter annually brought down by the river 3,702,758,400 cubic feet, it must have taken 67,000 years for the formation of the whole; and if the alluvial matter of the plain above be 264 feet deep, or half that of the delta, it must have required 33,500 more years for its accumulation, even if its area be estimated as only equal to that of the delta, whereas it is in fact larger.

From information since received, I think it not improbable that the quantity of water may have been underrated in this estimate;* and, if so, a larger amount of sediment would have

* I allude chiefly to the observations and experiments, on the velocity of the Mississippi at various depths, made by Mr. W. H. Sidell, during a Government survey, communicated to me through the kindness of Mr. Ruggles, of New York, which, if correct, would lead to the inference that the average number of cubic feet of water discharged into the Gulf per second, is considerably greater than Mr. Forshey and Dr. Carpenter deduced from their observations on the velocity of the stream at different depths. If, as I understand, there exist documents in the hydrographer's office at Washington, which would afford more ample data for such calculations, the Government would confer a boon on the scientific world by publishing them without