

it is scarcely probable that we should find any two of them in the world to have coincided in date, or in the time when their earliest deposits originated.

Quantity of sediment in river water.—Very few satisfactory experiments have as yet been made, to enable us to determine, with any degree of accuracy, the mean quantity of earthy matter discharged annually into the sea by some one of the principal rivers of the earth. Hartsoeker computed the Rhine to contain in suspension, when most flooded, one part in a hundred of mud in volume*; but it appears from two sets of experiments, recently made by Mr. Leonard Horner, at Bonn, that $\frac{1}{18000}$ th would have been a nearer approximation to the truth.† Mr. Barrow, in his journal, cited by Sir George Staunton, inferred from several observations, that the water of the Yellow River in China contained earthy matter in the proportion of one part to two hundred, and he calculated that it brought down in a single hour two million cubic feet of earth, or forty-eight million daily; so that if the Yellow Sea be taken to be 120 feet deep, it would require seventy days for the river to convert an English square mile into firm land, and 24,000 years to turn the whole sea into terra firma, assuming it to be 125,000 square miles in area.‡ Manfredi, the celebrated Italian hydrographer, conceived the average proportion of sediment in all the running water on the globe, which reached the sea, to be $\frac{1}{175}$, and he imagined that it would require a thousand years for the sediment carried down to raise the general level of the sea about one foot. Some writers, on the contrary, as De Maillet, have declared the most turbid waters to contain far less sediment. One of the most extraordinary statements is that of Major Rennell, in his excellent paper, before referred to, on the delta of the Ganges. “A glass of water,” he says, “taken out of this river when at its height, yields about one part in four of mud. No wonder, then,” he adds, “that the subsiding water should quickly form a stratum of earth, or that the delta should encroach on the sea!”§

There must certainly be some mistake, perhaps a misprint, in the statement, in the Phil. Trans.; and some have conjectured that the learned hydrographer meant one part in four hundred of mud. In the earlier editions of this work, I expressed my regret that so much inconsistency and contradiction should be found in the statements and speculations relative to this interesting subject; and I endeavoured to point out the high geological importance of reducing to arithmetical computation the aggregate amount of solid matter transported by certain large rivers to the sea. The deficiency of data has now been, in some degree, removed by the labours of the Rev. Mr. Everest, who has instituted a series of observations “On the earthy matter brought down by the Ganges” at Ghazipur, in Bengal. ||

* Comment. Bonon., vol. ii. part i. p. 237.

† Edin. New Phil. Journ., Jan. 1835.

‡ Staunton's Embassy to China, Lond. 1797, 4to. vol. ii. p. 410.

§ Phil. Trans. 1781.

|| Journ. of Asiatic Soc., No. 6. p. 238. June, 1832. See also Mr. Prinsep, Gleanings in Science, vol. iii. p. 185.