and when the water had become clear and blue, he detected only 1, 144 In the Meuse, according to the experiments of Chandellon, the maximum of sediment in suspension in the mouth of December, 1849, was 2100, the minimum 71420, and the mean 10000.145 In the Elbe, at Hamburg, the proportion of mineral matter in suspension and solution has been found by experiment to average about 1. The Danube, at Vienna, yielded to Bischof about 100 of suspended and dissolved matter.¹⁴⁶ The Durance has ordinarily a maximum of 30 grammes of sediment to one litre of water, or 1 by weight. In exceptional floods it rises to 100 grammes per litre of water, or h by weight. In extreme low water the proportion may sink to about $\frac{1}{1000}$; the average for nine years from 1867 to 1875 was about $\frac{1}{550}$.⁴⁴⁷ The Garonne is estimated to contain perhaps 100.148 In the Avon, which falls into the Severn, the mean amount of suspended mud is estimated at 378. 140 The observations of Mr. Everest upon the water of the Ganges show that, during the four months of flood in that river, the proportion of earthy matter is 128 by weight, or is by volume: and that the mean average for the year is by weight, or 1 by volume.¹⁵⁰ According to Mr. Login, the waters of the Irrawaddy contain 1000 by weight of sediment during floods, and 125 during a low state of the river.¹³¹ In the Yangtse the proportion of sediment by weight is estimated by Mr. H. B. Guppy at 188. The amount in the water of the River Plate is computed to be ¹/₁₅₂ by weight.¹⁵³ The Nile has been estimated to contain 159 parts of solid material in every 100,000 parts of water.

With regard to the amount of coarser and heavier sediment pushed along the bottom of a river by the downward current, it is more difficult to obtain accurate measurements. But it must sometimes constitute a large proportion of the total bulk of solid material discharged into the sea. In

- ¹⁴⁷ G. Wilson, Min. Proc. Inst. Civ. Engin. li., 1877-78, p. 216.
 ¹⁴⁸ Baumgarten, cited by Réclus, "La Terre."
- 149 T. Howard, Brit. Assoc. 1875, p. 179.
- ¹⁵⁰ Journ. Asiatic Society of Calcutta, March, 1832.
- 151 Proc. Roy. Soc. Edin. 1857.
- ¹⁸⁹ Nature, xxii. p. 486. According to Dr. A. Woeikoff, this estimate is much ander the truth; xxiii, p. 9. See also op. cit. p. 584.

188 G. Higgin, Nature, xix. p. 555.

^{144 &}quot;Chemical Geology," i. p. 122.

¹⁴⁵ Annales des Travaux publics de Belgique, ix. 204.

¹⁴⁰ Op. cit. i. p. 130. More recent observations by Sir Charles Hartley show that the mean proportion of sediment by weight in the Danube water for ten years from 1862 to 1871 was 1 or (at specific gravity 1.9) 1 by volume.