

England and Wales, especially in the mountain regions, and this extra amount of rainfall must have the effect of producing an extra amount of solution of the alkaline and other constituents that so largely form the constituents of those palæozoic rocks that form the hilly regions. If so, then, for given areas, the quantity of matter carried to the sea by the western areas, may be approximately equivalent in a year to that which is found in the eastern-flowing rivers. This idea, new to me, was first impressed on my mind by reading the Presidential Address of Mr. T. Mellard Reade to the Liverpool Geological Society, 1877, in which, among other important matters, he states that 'a total of 68,450,936,960 tons of water run off the area of England and Wales annually, equal to 18·3 inches in depth, which leaves 13·7 inches for evaporation. The total solids in solution amount to 8,370,630 tons, about equal to 558,042 tons in a year, if reduced to a solid state. This would cover four square miles of ground with a stratum of limestone one foot thick, assuming that  $13\frac{1}{2}$  cubic feet go to a ton, and also, for the sake of argument, that all the matter in solution is in the state of bicarbonate of lime. We know this not to be the case, but this makes no difference in respect of the amount of the various salts dissolved out of the rocks. According to Mr. T. Mellard Reade's estimate of 15 feet to the ton, 'the amount of denudation, if distributed equally over England and Wales, reckoned at 58,300 square miles, would be ·0077 of a foot per century, that is, it would take 12,978 years to reduce it one foot.' There is no doubt, however, that the quantity carried away in solution varies much in different geological areas, for of all the rocky formations, limestones are most easily acted upon by carbonic acid in rain water.