

shore waters of the Bristol Channel, where it has been ascertained that on the average every gallon of water in a flowing tide holds in suspension 40 grains. As the area involved in these observations was roughly 225 square miles, and reckoning the depth of water at 6 feet, there would be some 700,000 tons of mud on the move. Put in another way, for every square foot of ground there are 4 oz. of mud in suspension in the 6 cubic feet of water which stand above it.

The circulation of mud is thus considerable, though, of course, in the British Isles there is nothing comparable to the huge amounts of suspended matter discharged from the mouths of great continental rivers. The Mississippi, for example, is stated to convey into the Gulf of Mexico every year 363,000,000 tons of detritus, enough to cover an area of 240 square miles to a depth of 1 foot.¹

But in any case it is hardly to be expected that the coast-line of Britain should provide the conditions of salt-marsh formation on the grandest scale. These belong to large continents with vast interior reserves of erosible mountain chains and highlands, not to small islands. Speaking quite generally, and without reference to the nature of the rocks, the erosible materials yielded by any land area will be proportionate to its area. That is to say, the volumes of detritus eventually brought down to the shore, per unit length of coast-line, will be functions of the radii of the land areas involved.

Topography of a Salt Marsh.—Commonly the ground of an estuary or other inlet occupied by salt marsh falls into two principal areas, i.e. the higher level terrace or salt marsh proper, covered only at the spring tides; and the lower flats in part bare, which are covered by every tide (Plate XIV). These regions are distinguished by us as "Saltings" and "Slob lands", by the Dutch as *Schorre* and *Slikke*. Here they will be referred to as High and Low Marsh, respectively.

It is a character of high marsh to be carpeted with a continuous turf of vegetation, the basis of which is the common Salt-marsh Grass (*Glyceria maritima*), and mingled in this turf is a considerable variety of plants, of which the most frequent

¹ W. H. Wheeler, *Tidal Rivers*, 1893, p. 60.