

from the dredge, and the dredge itself. The vessel now steams slowly to windward, occupying successively the positions E, F, G, and H. The weight, to which the water offers but little resistance, sinks from w to w', and the dredge and bag more slowly from D to B. The vessel is now allowed to drift back before the wind from H towards c. The tension of the motion of the vessel, instead of acting immediately on the dredge, now drags forward the weight w', so that the dredging is carried on from the weight and not directly from the vessel. The dredge is thus quietly pulled along with its lip scraping the bottom in the attitude which it assumes from the centre of weight of its iron frame and arms. If, on the other hand, the weights were hung close to the dredge, and the dredge were dragged directly from the vessel, owing to the great weight and spring of the rope the arms would be continually lifted up and the lip of the dredge prevented from scraping. In very deep dredging this operation of steaming up to windward until the dredge-rope is nearly perpendicular, after drifting for half an hour or so to leeward, is usually repeated three or four times.

At 8.50 P.M. we began to haul in, and the 'Aunt Sallies' to fill again. The donkey-engine delivered the rope at the rate of rather more than a foot per second, without a single check. A few minutes before 1 A.M. the weights appeared, and a little after one in the morning, eight hours after it was cast over, the dredge was safely hauled on deck, having in the interval accomplished a journey of upwards of eight statute miles. The dredge contained $1\frac{1}{2}$ cwt.