

deposits.¹ The specimen of a deposit brought up at any particular spot may be very small, yet when studied with the light thrown on the subject at other stations where a large quantity was procured by the dredge or trawl in addition to that taken in the sounding tube, a very correct idea of the nature of a deposit can be formed even from the examination of such a small sample.

As soon as a specimen of a deep-sea deposit was procured, it was examined on board by Mr. Murray, and notes of the quantity, colour, and the general physical characters were entered in a journal. A small quantity of the deposit was then shaken up in pure sea water and separated by three decantations, each of which was examined in the wet and dry state by the microscope;² the organisms, minerals, and other substances present were then noted so far as possible. The carbonate of lime in the specimen was subsequently removed by dilute hydrochloric acid and the residue examined with the microscope. In order to examine specimens of the deposit and the various decantations in the dry state, it was found to be a great saving of time to saturate these with spirit of wine and then burn this off. The appearance of the manganese nodules, teeth, bones, and other materials were also carefully noted on being taken from the dredge. Mr. Murray's notes, as well as the large number of specimens brought home with so much care, were all available in the more detailed examination which has since been carried on at home during the past fourteen years.



FIG. 16.—The Anchor Dredge.

b. METHODS ADOPTED FOR THE STUDY AND DESCRIPTION OF THE DEPOSITS IN THE LABORATORY AFTER THE RETURN OF THE EXPEDITION.

In the preceding section the various contrivances for raising specimens of marine deposits from the bottom of the sea, together with the methods employed in

¹ For an account of more recent modifications in deep-sea apparatus, see Alexander Agassiz, *Three Cruises of the United States Steamer 'Blake,' Boston and New York, 1888*; Sigsbee, *Deep-Sea Sounding and Dredging, Washington, 1880*; Prince Albert de Monaco, *Recherche des Animaux Marins, Compte-Rendu des Scéances du Congrès International de Zoologie, p. 133, Paris, 1889*; Thoulet, *Océanographie (Statique), Paris, 1890*.

² The microscopes used most frequently by Mr. Murray were a Ross binocular with low powers and a Hartnack with high powers; these were firmly clasped to a small table, fixed securely into the deck of the ship. The seat again was firmly fixed between this table and the wall of the cabin. By this arrangement he could work with advantage even in rough weather when the motion of the ship was considerable.