

Tow-Nets.—These nets were continually in use during the cruise, and a stock of over a dozen was always kept ready to hand. The hoops were 10, 12, 14, and 16 inches in diameter, and the bags were made of fine muslin and buntin or strong cotton.

During the daytime they were usually towed from the ship about 50 fathoms beneath the surface with a 6 lb. lead, and sometimes to 200, 400 and 800 fathoms with a 14 lb. lead. The weights were placed about 10 fathoms in front of them, as represented in the woodcut (see fig. 23). The finest muslin ones were generally used when a boat was lowered from the ship for the purpose of tow-netting, and could be pulled very slowly through the water. During the last years of the voyage these nets were attached to the dredge line just below the weights, and also to the sides of the dredge and beams of the trawl.

On a good many occasions they were tied alongside a rope, as represented in the woodcut (see fig. 24), and sent down two miles with a lead and then hauled up again. In this operation, they, of course, only worked while being hauled up. The object of using them in this manner was to ascertain whether or not organisms lived in the deeper layers of water.

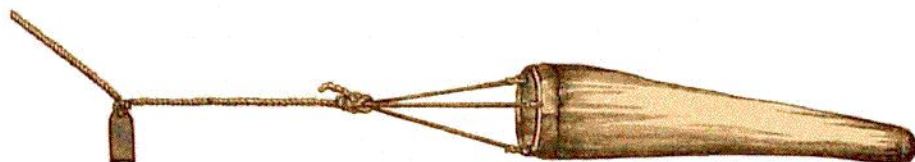


FIG. 23.—Ordinary method of using the Tow-Net.



FIG. 24.—A method of using the Tow-Net in deep water.

CURRENT OBSERVATIONS.

Current Drags.—Current observations were occasionally attempted on board the Challenger. The surface current could, of course, be roughly ascertained by the difference between the ship's position, as found by observation and by dead reckoning; but the accuracy of this estimate, depending as it does entirely on the correct steerage of the ship, and the proper allowance being made for speed through the water, cannot be implicitly relied on.

When circumstances were favourable, therefore, a boat was anchored by the dredge rope, and the speed and direction of the surface current ascertained by heaving a log from the anchored boat; and in order to ascertain by actual observation whether currents existed below the surface, an apparatus was lowered to such a depth as was thought advisable. As the movements of the apparatus could only be ascertained by attaching