

bottom water, amounting to about two litres, was brought up on each occasion, except on the one already mentioned where the instrument was lost, and on two others where the valves did not completely close: its specific gravity was determined, and the water was either subjected to further analysis or retained for future investigation.

In thirteen cases a dredge, measuring 54 inches in length of opening and 15 in width, and weighing 137 pounds, or in very deep water one somewhat smaller, was lowered; and in nine instances, notwithstanding the great depths and the extreme difficulty of the operation, brought up a sample of the bottom usually weighing one hundred-weight or more, and what we could scarcely doubt was a fair representation of the fauna of the ground which it had gone over at the bottom.

At almost every station a serial temperature sounding was taken, the temperature being ascertained at certain stated intervals, usually at intervals of 100 fathoms from the surface to 1500. In many cases samples of water were brought up from intermediate depths for examination, and in every case the surface temperature of the sea was taken, the temperature of the air with dry and wet bulb thermometers, and the amount of atmospheric pressure.

Every single operation, whether of sounding or dredging, was conducted from beginning to end by Captain Nares, and in every case the conditions required were determined with an amount of care which left no reasonable doubt of their accuracy within very narrow limits of error. I should therefore say, with reference to this first section, that the results were thoroughly satisfactory.

In the length of the section at the foot of Plate V. one centimetre division represents 100 nautical miles, so that 1 mm. corresponds with 10 miles. In order to make the differences in depth perceptible, and at the same time to avoid too great an amount of exaggeration, this proportion has been multiplied