

It will be seen from the table that the intervals between 3200, 3300, and 3400 fathoms are the same, while they ought to have been regularly increasing. Captain Nares thought that the sounding-machine had probably reached the bottom, and that a uniform under-current might be dragging out the line. He accordingly commenced heaving in, but the strain on the accumulators at once showed that the weights on the "Hydra" had not detached. At 3700 fathoms another attempt was made to heave in, but the weights were still there. Close to the 3900-fathom mark the line suddenly came almost to a stop; 50 fathoms more were let out, and the time taken at intervals of 25 fathoms; and the complete change of rate at once showed that the instrument was on the bottom. On reeling up, it was evident from the decreased strain that the "Hydra" tube had been relieved of the weights, and was coming up with the instruments attached to it alone.

Two thermometers were sent down in this sounding, and a slip water-bottle. The thermometers were broken, and as the mode in which the fracture occurred is in itself curious, and has an important bearing upon the use of these instruments at extreme depths, I will briefly describe the condition of the thermometers when they came to the surface:

No. 39, a valuable instrument with a small and constant error, which we had used for some time whenever for any reason we required extreme accuracy, was shattered to pieces (Fig. 70, A).

In No. 42 the instrument was externally complete, with the exception of a crack in the small unprotected bulb on the right limb of the U-tube. The inner shell of the protected bulb was broken to pieces (Fig. 70, B).

In both of these cases there seems little doubt that the damage occurred through the giving-way of the unprotected bulb. In No. 39 the upper part of that bulb was ground into coarse powder, and the fragments packed into the lower part of the