

the intervals occupied by the line in running out increased so considerably, that no doubt was felt as to the accuracy of the result. The time each 50 fathom mark entered the water was registered from 3000 fathoms to the bottom; and the following intervals obtained just before and after the sinkers touched the ground, may prove interesting, as they show how quickly the speed of descent of the line slackens when the weight of the sinkers is no longer felt:—

Depth.	Time.			Interval.		Rate per 100 Fathoms.	
	h.	m.	s.	m.	s.	m.	s.
3800 fathoms	7	57	22	1	15	2	30
3850 „		58	40	1	18	2	36
3900 „	8	0	19	1	39	3	18
3925 „		1	18	0	59	3	56
3950 „		2	23	1	5	4	20

The time the line occupied in descending the first 3800 fathoms will be found on page 67.

Two thermometers and a slip water-bottle were sent to the bottom. The thermometers were broken, and 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. A valuable instrument which had been used for some time, whenever for any reason great accuracy was required, was shattered to pieces (fig. 53 A). The other instrument was externally complete, with the exception of a crack in the small unprotected bulb on the right limb of the U-tube, whilst the inner shell of the protected bulb was broken to pieces (fig. 53 B). In both of these cases there seems little doubt that the damage occurred through the giving way of the unprotected bulb.

In the first case its upper part was reduced to a powder like table salt, and the fragments packed into the lower part of the bulb and the top of the tube. The large bulb and its covering shell were also broken, but into larger pieces, disposed as if the injury had been produced by some force acting from within. The thermometer tube was broken through in three places; at one of these, close to the bend, it was shattered into very small fragments. The creosote, the mercury, and bubbles of air were irregularly scattered through the tube, and it is singular that each of the steel indices had one of the discs broken off. The whole took place no doubt instantaneously by the collapse of the small bulb, which at the same time burst the large bulb and shattered the tube.

In the other a crack only occurred in the small bulb, either through some pre-existing imperfection in the glass or from the pressure. When the pressure became extreme the