

protection of Him whom all hands had been called to worship, and the admonition was well calculated to do us good.

Orders were now given to rendezvous, in case of separation, at Madeira. It was soon found, in the trial of the sailing qualities of the vessels, that the Relief was unsuited to act with the rest without great detention, and after four days I determined to part company with her, giving her orders to proceed to the Cape de Verdes.

The novelty of our situation was quite enough to interest all; free communications were had, and endeavours were made to excite a general interest in all the objects that were passing about us. It was amusing to see all entering into the novel occupation of dissecting the fish taken, and to hear scientific names bandied about between Jack and his shipmates.

On the 25th I began the trial of the current with the current-log; and experiments by sinking a white object to ascertain the distance to which the solar light penetrates the sea. Our current-log was formed of two small kegs with a distance-line between them of five fathoms, and the log-line fastened to the middle of it. One keg is made heavy enough to sink another air-tight, just beneath the surface of the water, so that we get the current uninfluenced by wind, and all the other circumstances that would affect the ship and not the surface current. I adopted for the other experiments the usual sea anchor for a boat, viz., an iron pot, painting the bottom of it white. The depths were noted when it was lost sight of, and when it was again seen, and the mean of these depths was taken for the result.

From our position in latitude $36^{\circ} 08' N.$, longitude $71^{\circ} 24' W.$, and the temperature of the water, we knew we were on the edge of the Gulf Stream; and we experienced what I presume has been called the eddy current. It was found setting to the west and northwest, but ought more properly to be termed an indraught to the Stream. I am little disposed to believe that a southerly current exists, as has been reported, like the inner one. We had a fine opportunity for examining the temperature of the Stream, as we crossed it at right angles to its course, and the thermometer was observed hourly while making little progress through the water: the maximum temperature of the water was found to be 83° , and width of the Stream about fifty-three miles. Much information might be acquired by a series of experiments in the Gulf Stream, which would tend to perfect the navigation and shorten the passage between the ports on our coast. It is to be hoped it will claim the attention of those engaged on the coast survey.

On the 25th of August our winds became favourable, and we were enabled to lay our course towards Madeira. I continued to keep the