Aug. 22.	TEMP. OF WATER.	Aug. 23.	TEMP. OF WATER.
7 P. M.	79°	1 P. M.	79°
8 "	80	2 P. M.	81
9 "	81	3 "	81
10 "	80	4 "	80
11 "	79	5 "	80
12 "	79	6 "	80
1 A. M.	79	7 "	80
2 "	79	8 "	80
3 "	79	9 "	79
4 "	79	10 "	79
5 "	79	11 "	78
6 "	79	12 "	78
7 "	79	1 A. M.	78
8 "	79	2 "	80
9 "	79	3 "	79
10 "	79	4 "	79
11 "	79	5 "	78
12 M.	79	6 "	77
		7 "	77

It will thus be seen that the Gulf Stream is somewhat warmer towards its inner edge than it is on the outer.

The calculations of the run of the ship gave fifty-three miles for the breadth of the Stream at the place where we crossed it, namely, on the parallel of 34° 30′, and for its velocity about two miles per hour. All navigators, however, are aware of the fact, that both the breadth and velocity of the Gulf Stream vary much, and that it occasionally approaches much nearer to the coast than it does at other times.

The approach of the Gulf Stream to our shores, has been ascribed to the influence of northeasterly winds. These are known to affect the tides in our bays and harbours, but I am unwilling to admit that these are an adequate cause for the change in position and velocity of so great a body of water. The action is far too trivial to account for such an effect. It is certain, on the other hand, that the Gulf and Labrador Streams both owe their existence to the unequal distribution of temperature on the earth's surface; there must be a difference in the intensity of the causes that act to produce these effects at different seasons of the year, and it may be inferred that the changes of the seasons act unequally upon the two streams. The force of the portion of the Labrador Current, which follows the coast of the United States, will, when superior, carry the Gulf Stream outwards, and when that force diminishes, the Gulf Stream will approach more nearly to the coast, and most nearly when its own relative force is the greatest. Whatever be the ultimate causes of the streams, it would appear that