The northeast trades were entered on the 15th of May; the difference of temperature being similar, and the current setting us to the southwest and west thirty-four miles. On the 16th we crossed the equator, in longitude 30° 30′ W. At 6 A. M., the same day, the thermometer at one hundred fathoms depth rose to 68·5°, being the same temperature as that experienced before the 14th, when we encountered the cold submarine current. We had crossed this current in a direction nearly at right angles to its flow, and I estimated its width at two hundred miles. The current on the 19th still set to the southward; the difference between the deep-sea and the surface temperature being found to be again twenty-four degrees. This was also the case on the 20th, on which day I tried the temperature at fifty fathoms depth, and there found it only five degrees lower than at the surface. This second submarine stream was found to be about eighty miles in width: we crossed it steering a northwest-by-north course. It may be that these submarine streams flow here to the south, and produce the southerly current we experienced. It was quite evident, from the numerous long lines of rips that we passed, that opposing currents existed of great force, which did not find their way to the surface. These rips extended in a north-northwest and south-southeast direction.

During the next five days, we pursued our homeward course rapidly, experiencing but little current. On the 26th, we reached the latitude of 16° N., and longitude 48° 31′ W. The temperature at one hundred fathoms depth differed only three degrees from that at the surface, and continued to vary between that and seven degrees, until we struck soundings.

On the 28th, we encountered quantities of the Fucus natans, or gulf-weed, which was of a dark brown colour, and evidently undergoing decomposition. The peculiarity of this weed arranging itself into long strips in the direction of the wind, was distinctly seen. Some of these were more than a mile in length, while at other times we passed through fields of several acres in extent. During this and the previous day, as well as the two following days, the current was found to set to the southward, at the rate of about eighteen miles in twenty-four hours.

On the 2d of June, we had reached latitude 29° N., and longitude 68° W.; and the wind, which had been gradually hauling from the northward and eastward round to the south-southwest, began to fail us. We had light and variable breezes from this day until the 8th, when we reached the neighbourhood of the Gulf Stream, and experienced the weather that is peculiar to it. The lightning was very vivid, and the rain fell in torrents; its temperature was 63°. In the latter part of the