the ridge is 36°·0, or 0°·8 below those on the east side ; their range being 1°·0, or from 35°·5 to 36°·5 ; so that the highest bottom temperature registered in this section west of the ridge was the same as the lowest obtained on the eastern side.

The thirteen serial temperature soundings obtained showed that the water gradually cooled from the surface to 40°·0 at an average depth of 900 fathoms ; and as the mean depth of the ocean between the Canary and Virgin Islands was found to be 2400 fathoms, it follows that for an average height of 1500 fathoms (9000 feet) from the bottom, or two-thirds of the whole depth, the water is below the temperature of 40°·0 (see Diagram 1). The range in the depth occupied by the isotherm of 40° was considerable, being as much as 300 fathoms, but although the greatest depth it attained was near the eastern extremity of the section, and the least near the western, the change was by no means gradual, for it was found to occupy a mean depth of 1000 fathoms for 1000 miles west of Tenerife, whilst for 1700 miles east of Sombrero Island its mean depth was only 800 fathoms, the change occurring in the intermediate 300 miles. At the depth of 380 fathoms the temperature of 49°·0 was found constant the whole way ; from the surface to that depth the water became gradually warmer towards the West Indies, the alteration being due principally to a change of 10° in latitude, viz., from 28½ at Tenerife to 18½ at Sombrero Island.

The specific gravity of the surface water rose rapidly on leaving Tenerife from 1·0272 to 1·0277 in mid ocean, and diminished again to 1·0269 as the West Indies were approached. The ship had thus passed through the saltest water found anywhere in the open ocean. The specific gravity of the bottom water varied from 1·0260 to 1·0275. Serial determinations of specific gravity showed that in mid ocean the saltest water was at the surface, but nearer the West Indies, where the surface water instead of 1·0277 showed a specific gravity of only 1·0269, the specific gravity of the water was 1·02712 at 50 fathoms, 1·02740 at 100 fathoms, and 1·02752 at 150 fathoms, falling off to 1·02682 at 200 fathoms and 1·02613 at 500 fathoms.[1]

The current drag was tried occasionally on the passage to St. Thomas. On the 17th February, at Station 2, it was lowered to 200 fathoms, and the watch buoy attached ; and as no movement of the water past the buoy was perceptible, it was concluded that either there was no current, or that the whole body of water, to the depth of 200 fathoms, was moving in the same direction and with the same velocity. On the 18th February, at Station 3, the drag was lowered to 100 fathoms with the same result. On the 26th February, at Station 9, the drag was lowered to 200 fathoms, and the surface water was found running past the watch buoy to the S.S.W. (true) at the rate of 0·3 mile per hour. On the 3rd March, when lowered to 250 fathoms, at Station 12, the surface water ran past the watch buoy in a W. by S. (true) direction at the rate of 0·3

[1] The specific gravities quoted in this volume are reduced to their value at 60° F. (15°·56 C.) and referred to that of distilled water at 39°·2 F. (4° C.) as unity ; see Phys. Chem. Chall. Exp., part ii., 1884.