

The soundings &c. obtained were divided into two sections—1st, from Monte Video to Tristan da Cunha; 2nd, from Tristan da Cunha to Ascension (see Diagrams 6 and 7).

Between Monte Video and Tristan da Cunha twelve soundings, eleven temperature soundings, and seven trawlings were obtained.

In the western part of the Monte Video-Tristan da Cunha section, the depth varied from 2900 to 2440 fathoms, and in the eastern part from 1715 to 2200 fathoms.

The temperature at the bottom in this section was peculiar. In the western part temperatures of from $32^{\circ}3$ to $33^{\circ}1$ were registered, a colder result than any previously obtained except in the immediate neighbourhood of the Antarctic regions. In the eastern or shallower part of the section the bottom temperature varied from 34° to $35^{\circ}8$. In order to ascertain the exact thickness of this cold stratum, five or six thermometers were on each occasion attached to the sounding line at intervals of 200 fathoms from each other and from the bottom thermometer. From their readings it appears that there is, in the western or deeper part of the section, a stratum of water below the temperature of 33° , the average thickness, or height above the bottom, of which is 400 fathoms. Above 400 fathoms the temperature increases until the isotherm of 35° is reached at an average depth of 600 fathoms from the bottom, an increase of 2° in 200 fathoms. Between the isotherms of 35° and 40° the average distance is 1500 fathoms across the whole section; that is, only a change of 5° per 1500 fathoms.

The surface temperature varied from 73° to 64° across the section.

The serial temperature soundings showed that the isotherm of 40° was on an average 400 fathoms from, and fairly parallel with, the surface, except in the neighbourhood of the coast of South America. The isotherms above 40° were parallel with that isotherm. At Station 333 temperature observations were obtained within a few miles of those previously obtained on the voyage from Bahia to the Cape of Good Hope, in October 1873, at Station 133, and the results at 75 and 100 fathoms were found to be identical on both occasions, notwithstanding a difference of 10° in the temperature of the surface owing to the different seasons in which the observations were made. Below 100 fathoms a good comparison could not be made, as in October 1873 serial temperatures were only obtained to that depth at Station 133, but from a comparison made with the results then registered on each side of that Station, it appears that the calculated results agree fairly well with those actually obtained.

The general direction of the surface current was southeasterly.

In the section from Tristan da Cunha to Ascension, nine soundings, nine serial temperature observations, and four dredgings were obtained.

The soundings in this section show that a ridge extends between Tristan and Ascension Islands separating the deep water of the western part of the South Atlantic from that of the eastern part. The shallowest sounding obtained on this ridge was 1240