

considerably lower than those obtained at corresponding depths at Stations 239 and 241 on either side of Station 240. Thus, at 100 fathoms the temperature at Station 240 was 15° lower than at Station 239, and 12° lower than at Station 241; at 200 fathoms it was 16° lower than at Station 239 and $10^{\circ}3$ lower than at 241, &c., down to 1500 fathoms, at which depth the same temperature was obtained as at all the other Stations. A further peculiarity here was, that from 200 to 300 fathoms the water was at a temperature of 40° .

The upper isothermal lines between the coast of Japan and Station 240, 650 miles from the coast, occupied greater depths than they did between Station 240 and the 180th meridian, being doubtless influenced by the Japan Current. The isotherms were fairly parallel with the surface (see Diagram 17).

The abnormal condition of the temperature at Station 240 is due in all probability to an outset from the Sea of Okhotsk, or the western part of Behring Sea, as Captain Belknap, in the U.S. ship "Tuscarora," found a belt of cold water opposite the entrance of those seas, which, from the observations of the Challenger, appears to extend to the 35th parallel. Here however it nearly ceases, as the width of the cold stream on the surface did not exceed 20 miles.

The serial temperatures taken on the 38th parallel, between the meridian of 180° and $156^{\circ} 25' W.$, gave nearly the same results, so that the isotherms were fairly parallel with the surface, the isotherm of 40° being at an average depth of 400 fathoms; that of 45° , at an average depth of 250 fathoms; of 50° , at 150 fathoms (see Diagram 18).

In the third part of the section, from a position in lat. $38^{\circ} 9' N.$, long. $156^{\circ} 25' W.$, to the Sandwich Islands, the upper temperatures increased as the vessel proceeded to the southward, causing the isotherms above 50° to descend gradually; the isotherms of 40° and 45° , however, maintained a position nearly parallel with the surface, at depths of 400 and 250 fathoms (see Diagram 19).

No current observations were taken by mooring a boat to the sounding line or trawl rope, but whilst sounding or trawling the direction of the surface set was noted, and its velocity estimated; and the direction and rate of the current were also calculated from frequent astronomical observations. The general direction of the current from the Japanese coast to the meridian of $170^{\circ} E.$, was northeast 19 miles per diem, the greatest set in any one day being 37 miles, and the least 10 miles. From the meridian of $170^{\circ} E.$ to $156^{\circ} W.$ the currents were variable and generally insignificant, and on the southward track to the Sandwich Islands they were variable between the 38th and 30th parallels, and had a general westerly tendency from the 30th parallel to Oahu, the velocity being in no case considerable.

Anemometer observations were taken when favourable opportunities offered, whilst the ship was stationary sounding or trawling; and it was also noticed that the direction