

has been divided into three parts:—1st, the section from Japan to the 180th meridian on the parallel of  $35\frac{1}{2}^{\circ}$  north latitude; 2nd, the section from the 180th meridian to the meridian of  $156^{\circ} 25'$  west longitude, on the 38th parallel of north latitude; and 3rd., a meridional section from a position in lat.  $38^{\circ} 9' N.$ , long.  $156^{\circ} 25' W.$ , to Oahu Island in the Sandwich group (see Diagrams 17, 18, and 19).

In the first part of the section the bed of the ocean shows, as had been expected from the soundings of the U.S. ship "Tuscarora," a remarkable depression in the immediate neighbourhood of Japan, the depth being nearly 4000 fathoms at a distance of 200 miles east of Nosima, after which a gradual rise takes place to 2300 fathoms at a distance of 900 miles from that headland, then a gradual increase of depth to 2900 fathoms 1500 miles from Japan, and another rise to 2050 fathoms near the end of the section. It is probable that the deepest point of the depression off the Japanese coast was not hit upon, as the "Tuscarora" found depths of 4600 fathoms farther north. In the second part of the section the depths vary from 2530 to 3125 fathoms, the mean being 2900 fathoms; whilst in the third part, south towards the Sandwich Islands, the bottom shows a very gradual rise until within 120 miles of the land, when the gradient becomes steeper.

The temperature at the bottom was remarkably uniform throughout the whole distance traversed, the highest result being  $35^{\circ}\cdot 3$ , the lowest  $34^{\circ}\cdot 8$ , and the mean  $35^{\circ}\cdot 1$ . The mean temperature at a depth of 1500 fathoms was also  $35^{\circ}\cdot 1$ . These results agree with those obtained between the Admiralty Islands and Japan. It is therefore evident that over a very large area of the North Pacific the water is at a uniform temperature from the depth of 1400 or 1500 fathoms to the bottom.

The surface temperature on the parallel of  $35\frac{1}{2}^{\circ} N.$  varied from  $74^{\circ}$  to  $64^{\circ}\cdot 5$ , the mean being  $69^{\circ}\cdot 5$ . The comparatively low surface temperature of  $64^{\circ}\cdot 5$  was exceptional, this result being obtained at Station 240 on the 21st June, the water remaining at from  $64^{\circ}\cdot 5$  to  $65^{\circ}$  during the whole of the time sounding and trawling operations were carried on, although 10 miles on either side of this Station it was  $5^{\circ}$  higher (see Diagram 17).

On the 38th parallel the mean surface temperature was  $65^{\circ}\cdot 3$  and the extremes  $69^{\circ}\cdot 5$  and  $62^{\circ}\cdot 2$ . It would therefore appear that in the month of July a difference of latitude of 150 miles makes a difference of  $4^{\circ}\cdot 2$  in the surface temperature of the North Pacific on or about the 36th parallel.

In the third part of the section, from lat.  $38^{\circ} 9' N.$ , long.  $156^{\circ} 25' W.$ , to the Sandwich Islands, the surface temperature rose gradually from  $68^{\circ}$  to  $78^{\circ}$  at Honolulu.

The serial temperatures show some peculiarities. For instance, the observations taken at Station 240 on the 21st June, in lat.  $35^{\circ} 20' N.$ , long.  $153^{\circ} 39' E.$ , where the surface temperature was, as mentioned previously, abnormally low, gave results