

so that we are tolerably certain by actual experiment of the amount of their error. In speaking of the 'Lightning' temperatures, I mean, therefore, the actual temperatures taken by the ordinary thermometers, corrected approximately to the standard of the Miller-Casella thermometers, afterwards used in the 'Porcupine.'

Leaving Stornoway in the 'Lightning,' on the 11th of August, 1868, and directing our course towards the Færoe banks, we sounded in 500 fathoms about 60 miles to the north-west of the Butt of the Lews, and took a bottom temperature of $9^{\circ}4$ Cent. with the ordinary Six's thermometer—the only form of the instrument in use at the time. This, when corrected for pressure, gives about $7^{\circ}8$ C. We were surprised to find the temperature so high, and we were at the time inclined to think that the observation, which was taken in a breeze of wind, was scarcely to be depended upon. Subsequent observations, however, in the same locality, confirmed its accuracy. On the Færoe Banks, at a depth under 100 fathoms, the bottom temperature averaged 9° C., while that of the surface was about 12° C.; temperature indications on this bank were, however, of little value, as the water is no doubt affected to some extent through its entire depth by direct solar radiation. The next observation was in lat. $60^{\circ}45'$ N. and long. $4^{\circ}49'$ W., at a depth of 510 fathoms, with a bottom temperature of $-0^{\circ}5$ C., about 140 miles nearly directly north of Cape Wrath. Then followed a series of soundings, Nos. 7, 8, 10, and 11 of the chart (Plate I.), taken while traversing the northern portion of the