

unequal temperature, such a thermometer will only register the temperature of the coldest layer, irrespective of its depth. For this reason, the temperatures below 50 fathoms were taken with Negretti and Zambra's deep-sea reversing thermometer, which gives the actual temperature at the depth to which it is lowered. This thermometer has to be used with some care, as in very rough weather the release, which is mechanical, is apt to take place prematurely. Also, if there is much current, the steamer should be free and not anchored, as there is then so much stray line that great depths cannot be correctly measured. It is thus necessary to use time in good weather, specially for this purpose. In the present instance, two thermometers were used, which were kept in perfect working order. The thermometers were checked against each other by duplicate readings at the same depth, and were also compared directly with a standard thermometer. Any readings which there was reason to suspect of inaccuracy are omitted from the results given. In the temperature sections, the columns represent points at equal intervals apart, across the width of the strait. The temperatures are Fahrenheit.

CAPE NORTH TO ST. PAUL ISLAND.

Temperature Section, August 17th, 1894.

Surface.....	65	65	58	58
10 Fathoms.....	64	60	49	43
20 do.....	41	41	36	36
30 do.....	35	35	35	35
40 do.....	33	33	32	34
Total depth.....	83 F.	90 F.	120 F.	140 F.

Same section as above, repeated September 27th. Current from N. W., (the usual direction).

Surface.....	51	52	52	50
5 Fathoms.....	49	47	47	45
10 do.....	49	47	42	41
15 do.....	49	45	38	35
20 do.....	49	45	36	35
30 do.....	38	38	35	35
40 do.....	34	35	34	34

ST. PAUL ISLAND TO CAPE RAY.

Temperature section, August 16th, 1894.

Surface.....	59	60	60	59	55
10 Fathoms.....	42	40	44	44	46
20 do.....	34	38	37	38	37
30 do.....	32	36	35	34	35
40 do.....	31	35	33	33	34
50 do.....	31	—	33	—	—
100 do.....	37½	—	38½	40	—
150 do.....	40½	—	40½	—	—
200 do.....	39½	—	—	—	—