

IV.—The Temperatures, Specific Gravities, and Salinities of the Weddell Sea and of the North and South Atlantic Ocean. By William S. Bruce, LL.D., Andrew King, F.I.C., and David W. Wilton.

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INTRODUCTION BY W. S. BRUCE, LL.D.

After my return from my first voyage, namely, the Scottish Antarctic Expedition of 1892–93, for which I was chosen as naturalist, I had the advantage of coming closely in touch with Mr J. Y. BUCHANAN, who then trained me in his Edinburgh laboratory in the use of his hydrometer. During the past twenty years I have been in constant touch with him regarding problems relating to the physics of the ocean. As a consequence, before my departure for a voyage to, and wintering in, Franz Josef Land during 1896–97, I was well trained in the use of his hydrometer, and obtained during that expedition observations of considerable interest. I also carried out all the hydrometer work on board the PRINCE OF MONACO's yacht *Princess Alice* during his Arctic voyage of 1898, under the direction of Mr J. Y. BUCHANAN, who was also on board during that cruise, and also during the PRINCE OF MONACO's second Arctic cruise during 1899, when I was solely responsible for that work. Consequently, I was thoroughly familiar with hydrometer work when I set sail in the *Scotia*.

To meet modern criticism, it may be well to state that I was well trained in physics and chemistry under WILLIAMSON, CRUM BROWN, and TAIT, and that up to the time of my departure to Franz Josef Land I was for nearly two years on the summit of Ben Nevis.

On the voyage of the *Balæna* to Antarctic seas in 1892–93, I only used the usual hydrometer supplied by the British Meteorological Office; but prior to my departure I had received special instructions from the late Mr ROBERT IRVINE of Royston and Dr H. R. MILL in methods for collecting samples of sea water and taking sea temperatures. I had also reduced most of the physical observations of the Scottish Fishery Board for a period of ten years.

METHODS AND INSTRUMENTS. BY W. S. BRUCE, LL.D., AND  
ANDREW KING, F.I.C.

It was Mr D. W. WILTON who carried out all the hydrometer work in the deck laboratory of the *Scotia*, which was well fitted for the purpose.

Mr WILTON had been a student of chemistry and physics in the University of Edinburgh, and had passed his theoretical and practical examinations—both class and

degree examinations—with credit. Subsequently he was an observer at the summit and base, Ben Nevis Observatory, and was put in charge of, and was responsible for, the initiation of the observatory at an altitude of 2200 feet—a position half way between the summit and the base observatories. Before his departure with the *Scotia* he received special instruction in hydrometer work with Mr BUCHANAN and Mr KING in Mr BUCHANAN'S laboratory in Edinburgh. On board the *Scotia* Mr WILTON submitted his observations to Mr R. C. MOSSMAN and to Dr BRUCE, who checked them from time to time by counter observations. These check observations in every case compared most favourably with Mr WILTON'S. Mr WILTON'S observations may therefore be taken as absolutely reliable.

The collection of the water samples and the recording of temperatures and the general conduct of the concurrent work on the scientific bridge was undertaken by Dr BRUCE, with the assistance of Dr J. H. HARVEY PIRIE, who handled the Lucas sounding machine; the late Mr ALLAN RAMSAY or Mr GRAVILL, first and second engineers, who handled the special high-speed winch;\* and in turn one of the three mates of the *Scotia*, namely, Mr JOHN FITCHIE, Mr ROBERT DAVIDSON, or Mr ROBERT MACDOUGALL. Captain THOMAS ROBERTSON handled the ship during the operations, while Dr BRUCE was in such a position on the flying platform of the forward scientific bridge as to be in sight and hearing of Captain ROBERTSON on the nautical bridge, the engineer at the winch, and Dr PIRIE at the sounding machine, while one of the mates was with him at the flying bridge. During these operations Mr WILTON was on the main deck, and the door of the laboratory was here just below the scientific bridge. Consequently, as soon as Dr BRUCE recorded a deep-sea sample on the bridge his reading of the temperature was checked and recorded. He then emptied the contents of the deep-sea water-bottle into the special bottle which Mr WILTON had in readiness for its reception, and thereafter Mr WILTON duly labelled it and put it in the place definitely assigned to it in the laboratory. So systematic was this arrangement that when Dr BRUCE gave the order, or rather expressed the wish, that a deep sounding and physical observation should be taken, everybody was in his right place and knew exactly what was required of him without any delay or confusion—the crew cheerfully assisting and showing increasing interest in the work. The only regret is that a vessel so well fitted out for deep-sea research in any part of the world, and a body of chosen men who had become such adepts at the work, should not be able to keep together permanently for further research. Alas! the ship had to be sold, and scientists, officers, and crew scattered, never again to continue work that they had faithfully and ably carried out during almost two years; and it ought to be mentioned for Dr PIRIE and the officers and men who assisted on the scientific bridge in all

\* *Vide* special description, "Scientific Equipment," "*Scotia*" Reports, vol. i. It is interesting to note that this winch has been subsequently used on Sir DOUGLAS MAWSON'S expedition, and is at present being used on board the *Aurora* by Sir ERNEST SHACKLETON, to which two expeditions Dr BRUCE has been glad to lend it.

weathers and temperatures down to zero Fahrenheit, and especially for those on the flying platform, that the work was not carried out without great discomfort, because the rapidly incoming sounding-wire carried with it a continuous spray, which in low temperatures congealed as it fell and covered them from head to foot with ice. These conditions were intensified owing to the fact that all such work has to be carried out on the weather side of the ship.

In spite of the high speed which the *Scotia's* scientific winch was able to attain, all these operations meant long and arduous deck work, as will be seen by some actual records here quoted, and more fully dealt with under "Scientific Equipment." \* The usual time for winding in was 80 to 90 fathoms per minute (although in a speed trial the great speed of over 140 fathoms per minute was attained), which for the *Scotia's* deepest sounding of 2900 fathoms meant continuous heaving in for thirty-four minutes. This, when added to necessary halts for reading the temperatures, collecting the water samples, and taking the instrument aboard, would amount to fully an hour's deck work for heaving in alone. In addition to this there was fully another hour's work "letting go" and attaching and setting the sounder and deep-sea water-bottles. Repeating the operation once or twice more for lesser depths, in order to obtain a more complete series, furthermore proportionately added to the time.

For this work there was always used a special three-stranded wire on the Lucas sounding machine. This wire naturally was not only more reliable than the single wire, but was very suitable for holding a temporary seizing which gave instruments a better hold and prevented them from slipping down the sounding-wire. The water-bottle generally used was the Buchanan-Richard water-bottle, and the thermometer the most recent pattern Negretti & Zambra reversing thermometer. The sounder was the Buchanan sounder, and immediately above it was fixed a reversing thermometer. Only two, or at the most three, Buchanan-Richard bottles were fixed on the wire at the same time, and usually at a distance of 500 fathoms apart. This practice risked the loss of fewer instruments in the event of the wire carrying away, and also had the advantage of giving the use of the same instruments for the next series of observations, thus making the observations more directly comparable. For the same reason it also was endeavoured, as far as possible, to use the same instruments on every occasion.

Occasionally the Pettersson-Nansen insulated water-bottle was used with the direct-reading Richter thermometer. This instrument is a very beautiful one, but there are serious objections to its general use, especially in low temperatures. These objections are—

1. Its cost.
2. The manipulating of several metal levers and fine screws—a serious handicap when working with numb fingers.

\* "Scientific Equipment," "*Scotia*" Reports, vol. i.

3. The question of its reliability when used during low air temperatures, and the fact that the whole instrument may be solidly frozen up immediately it comes out of the water (this actually occurred on board the *Scotia*).

4. The fine scale of the Richter thermometer, which is difficult to read on the deck of a ship in bad weather and poor light.

5. The fact that it is not possible to use it with reliable results at greater depths than 1000 fathoms.

The Buchanan-Richard water-bottle is more desirable than the Pettersson-Nansen—

1. Because it is inexpensive.

2. Because it is easily manipulated.

3. Because it does not jam by freezing up during cold weather.

4. Because the Negretti-Zambra reversing thermometer scale is easily read under conditions of weather and light when the Richter thermometer cannot be read at all, or with difficulty.

5. Because it can be used at any depth desired.

It has been contended that the point at which the mercury breaks off in the reversing thermometer is not constant. Errors due to this will probably be found to be less frequent than those which occur with an instrument with such drawbacks as have been mentioned in the case of the Pettersson-Nansen bottle with the Richter thermometer.

From what has been already said, it is unnecessary to emphasise that the hydrometer observations taken by Mr WILTON were those of a trained physicist, and such methods\* as using "towels or wash-leather" that "were not generally quite clean," or "the surface of the water samples" being "more or less contaminated during the determinations with the hydrometer," were not practised on the *Scotia*. Mr WILTON had all his instruments, silk cleaning-cloths, vessels, and fingers, and surroundings generally, scrupulously clean before commencing observations. Besides this, he was most careful in maintaining the laboratory and the water samples as nearly as possible at the same temperature. In this he was in the highest degree successful, even in weather conditions that were on many occasions very difficult to deal with.

The laboratory was fitted with a special serving-table for this work; and there was also constructed a special swinging platform, which on some occasions, but not as a rule, was more convenient than the table. The table proved most useful for this and other delicate operations.

The form of hydrometer used by Mr WILTON in determining the density of the sea-water was the Buchanan absolute-weight hydrometer. One of these hydrometers (No. 25) was used for Samples 1 to 199, but unfortunately it was broken on 24th February 1903. Thereafter hydrometer No. 14 was used. This form of hydrometer is fully described in Mr J. Y. BUCHANAN'S elaborate monograph on "Experimental

\* *The Norwegian North Polar Expedition, 1893-96*, vol. iii, pt. ix, pp. 147, 148, "The Oceanography of the North Polar Basin," by FRIDTJOF NANSEN.

Researches on the Specific Gravity and the Displacement of some Saline Solutions."\* It was used by Mr WILTON in the same way as during the *Challenger* Expedition, *i.e.* with the help of previously determined constants. These constants are (1) the *weight in vacuo* of the hydrometer in grams; (2) the *volume* in c.c. of the body of the hydrometer at 0° C. up to the lowest division of the stem; (3) the *rate of expansion* of the body per degree C. in c.c.; (4) the *volume per mm.* of the divided stem in c.c.

Of late years Mr BUCHANAN has introduced vast refinements into the method of using the instrument on shore for chemical research, and these are described in the monograph referred to above. However, it was not very practicable to apply these delicate methods on board the *Scotia*, so the original method of use was adhered to during this Expedition. This form of hydrometer has a volume of about 180 c.c. Its *divided stem* is 100 mm. long and displaces from 0·8 to 1·0 c.c. The maker, before sealing it up, loads it to float at the bottom of the stem in distilled water of from 30° C. to 40° C. (when it is intended for use in aqueous liquids). Its *weight in vacuo* is once for all determined with the greatest care. A set of weights of such form as can easily be placed on the top of the stem is provided. The heavier weights used by Mr WILTON were made of brass wire, and the lighter ones of aluminium wire. The probable error of each weight was not more than  $\pm 0\cdot1$  mg. With these weights the *effective weight* of the hydrometer can be increased at will, and they are so adjusted that the successive addition of each weight can increase the total weight by 0·05 gram. The stem is divided into 100 mm., and its displacement is 0·1 c.c. *per* from 10 to 12 mm. Thus when the hydrometer is floating in distilled water, or in an aqueous solution of not very high specific gravity, the addition of 0·1 gram to the effective weight sinks the stem by from 10 to 12 divisions.

*Hydrometer 25.*—This hydrometer was used in the testing of the density of samples 1 to 199. Its *weight in vacuo* is 186·2944 grams. The *volume* of the body up to the lowest division of the stem at 0° C. is 186·8427 c.c. The *rate of expansion* of the body per degree C. is 0·00567 c.c. The *volume per mm. of the stem* is 0·00887 c.c. These constants were determined in Edinburgh before the start of the *Scotia* Expedition.

Let  $t'$  be the temperature in degree C. of the sample of water whose density is to be determined.

R the *stem-reading* at the place of immersion.

W the *weight in vacuo* of the hydrometer in grams.

w the total weight of the *added* weights in grams.

Then  $(W + w)$  is the total effective weight of the hydrometer, and consequently is the weight in grams of the sea-water displaced; while  $(186\cdot8437 + 0\cdot00567t' + 0\cdot00887R)$  c.c. is the volume of the immersed part of the hydrometer and consequently of the displaced sea-water.

\* *Trans Roy. Soc. Edin.*, vol. xlix, part i, 1912.

Hence the density of the sample at  $t'$  is

$$\frac{(W + w)}{(186.8437 + 0.00567t' + 0.00887R)}$$

Thus if this particular hydrometer (No. 25) floats at division 31.8 of the stem with an added load of 5.80 grams, and the temperature of the water be 21.2° C., the density at 21° C. is

$$\frac{186.2944 + 5.80}{186.8427 + 0.00567 \times 21.2 + 0.00887 \times 31.8} = 1.02589.$$

*Hydrometer 14.*—This hydrometer was used in the testing of samples 200 to 578. Its *weight in vacuo* is 181.0189 grams. The *volume* at 0° C. of the body of the hydrometer up to the lowest division of the stem is 181.5471 c.c. The *rate of expansion* per degree C. of the body is 0.00624 c.c. The *volume per mm. of the stem* is 0.009046 c.c.

As in the case of hydrometer 25, these constants were determined in Edinburgh before the start of the Expedition.

Thus in determinations of density made with this instrument, the density of the sample is found by the formula

$$\frac{W + w}{(181.5471 + 0.00624t' + 0.009046R)}$$

$W$ ,  $w$ ,  $R$ , and  $t'$  having the meanings assigned above.

Mr WILTON never took less than four separate readings of the stem by successive addition of weights so as to increase the amount of immersion. In most cases, however, he took considerably more, generally about eight. From each of these readings an independent value for the density could be calculated; but as this would have involved much laborious calculation, he calculated the density from the *mean* effective weight and the *mean* stem-reading. The temperature of the sample during experiment ( $t'$ ) was read before immersing the hydrometer in the liquid and after removing it, and the *mean* of these two readings was taken as the "temperature during experiment." This was used in the calculation of the density by means of the formula given above. The two readings of temperature never differed by more than 1° C., but generally varied by very much less.\* It was very exceptional to have so large a difference as 1° C., and in those cases the accuracy of the density determination may be open to doubt. In the tables the column  $T'$  gives the temperature of the air at the time when the determination of density was being made, and the column  $t'$  gives the temperature of the sample of sea-water whose density is being determined. The nearer these temperatures are to each other, the less alteration in the temperature of the sample during the experiment is to be expected.

\* Mr BUCHANAN would not be satisfied in his chemical work with an experiment in which the temperature of the solution during experiment varied by more than 0.01° C., but under the circumstances and conditions such a degree of accuracy as this could not be expected.

The column *w* gives the actual additional weights, and the *mean* of these numbers (which is also incorporated in this column) gives the mean added weight. On addition of this mean number to the weight of the hydrometer *in vacuo* we obtain the total effective weight ( $W + w$ ).

Column *R* gives the readings of the stem of the hydrometer corresponding to each successive addition of weight, and the mean of these readings is also incorporated in this column and represents the mean portion of stem immersed.

Column *V* gives (1) the volume of the body of the hydrometer at 0° C. up to the lowest division of the stem, the figures 18 being omitted; (2) the expansion of the body of the hydrometer due to the particular temperature of the sample during experiment; (3) the volume of the mean portion of the stem immersed. (1) is of course a constant number, while (2) and (3) have been obtained by the use of the formula stated above.

The sum of (1), (2), and (3) which is given in the column expresses the total volume in c.c. of the immersed portion of hydrometer, and consequently of the displaced sea-water.

Column  ${}_4S_t$ . The numbers in this column represent the density of the sample at the temperature of experiment (*t*'), and are obtained by dividing the total effective weight of the hydrometer by the sum of the numbers in column *V*, which expresses the volume of the immersed part of the hydrometer.

Column  ${}_4S_{15.56}$  gives the density of the sample at 15°·56 C. The numbers in this column are calculated from those in column  ${}_4S_t$  by the use of the tables contained in Dittmar's "Report on Researches into the Composition of Ocean Water," p. 70.\*

Column  ${}_4S_t$  gives the density of the sample at (*t*), which is the temperature in 0° C. of the sea at the time the sample was collected. It thus gives the actual density of the water *in situ*. The numbers in this column are derived from those in column  ${}_4S_{15.56}$  by means of the tables in Dittmar's Report in the case of those in which the value of *t* is above 0° C. In those cases in which the value is below 0° C. recourse was had to Knudsen's Tables published as No. 11 of the "*Publications de Circonstance*" of the Conseil Permanent International pour l'Exploration de la Mer.

*N.B.*—In the tables numbers which are not actually observed quantities, but which have been obtained by calculation, are printed in italics. Thus in columns (*t*) and (*T*) the temperatures were actually observed in ° F., and their equivalents in ° C. are printed in italics. Also the figures in the last three columns are all in italics.

\* *Phys. Chem. "Chal." Exp.*, pt. i, 1884.

OBSERVATIONS OF THE TEMPERATURE AND DENSITY OF SEA-WATER MADE  
ON BOARD THE S.Y. "SCOTIA," 1902-1904.

BY DAVID W. WILTON.

HYDROMETER NO. 25. WEIGHT=186.2944 GRAMS.

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.													
		Date (E).			Position (L).		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)							
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			° F.	° C.				T.	t.	Observed at t.	Reduced to 15°-56 C.	Reduced to t.			
																							of the Air.	of the Water.	of the Air.
5	1	1902.	Nov.	24	12.20	30 14 N.	18 13 W.	..	Surface	67.7	70.0		70.0	21.1 C.				Bright blue	..	67.6	19.8 C.	20.4	5.70	17.9	6.8437
																			5.75	23.4	.1168				
																			5.80	29.1	.1254				
																			5.85	34.4					
																			5.90	39.2					
																			20.8						
																			20.6	5.80	28.8	7.2159	1.02606	1.02733	1.02593
6	2	Nov.	25	13.45	28 14 N.	19 15 W.	..	Surface	69.2	71.0	71.0	21.7 C.	Bright blue	..	71.0	21.2	5.70	21.8	6.8437						
																			5.75	26.8	.1202				
																			5.80	31.5	.2820				
																			5.85	37.5					
																			5.90	41.5					
																			21.2						
																			21.2	5.80	31.8	7.2459	1.02589	1.02732	1.02575
7	3	Nov.	26	12.10	26 23 N.	20 20 W.	..	Surface	70.5	72.0	72.0	22.2 C.	Bright blue	..	72.2	22.3 C.	21.8	24.0	6.8437						
																			5.70	27.9	.1242				
																			5.75	34.0	.3007				
																			5.80	39.0					
																			5.85	44.5					
																			22.0						
																			21.9	5.80	33.9	7.2686	1.02577	1.02739	1.02567
10	4	Nov.	27	12.0	24 21 N.	21 20 W.	..	Surface	72.3	73.0	73.0	22.8 C.	Bright blue	..	73.9	23.3 C.	22.6	3.0	6.8437						
																			5.50	15.0	.1287				
																			5.60	25.0	.2217				
																			5.70	36.0					
																			5.80	46.0					
																			22.7	5.70	25.0	7.1941	1.02564	1.02750	1.02563
																			22.7						
																			23.4	5.45	5.0				
																			5.50	10.9					
																			5.55	16.5					
																			5.60	20.0					
																			5.65	25.5					
																			5.70	31.5					
																			5.75	36.5	6.8437				
																			5.80	42.0	.1338				
																			5.85	48.0	.2324				
																			23.8						
																			23.6	5.65	26.2	7.2099	1.02529	1.02740	1.02538
17	6	Nov.	29	12.0	20 20 N.	23 21 W.	..	Surface	73.0	74.5	74.5	23.6 C.	Less bright blue, S.W.	..	76.2	24.6 C.	23.8	5.0	6.8437						
																			5.45	15.5	.1349				
																			5.55	25.2	.2279				
																			5.65	36.0					
																			5.75	47.0					
																			23.8	5.55	25.7	7.2065	1.02477	0.02692	1.02482







Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of the Air.
45	22	1902. Dec.	8	9.0	3 29 N.	26 23 W.	..	Surface	80.5	80.7 27.1 C.	Bright blue	..	82.0 27.8 C.	27.4	5.00 5.10 5.15 5.20 5.50	2.5 12.5 18.0 24.0 56.5	6.8437 .1559 .2013				
														27.5	5.19	22.7	7.2009	1.02288	1.02613	1.02300	
46	23	Dec.	8	12.0	3 12 N.	26 29 W.	..	Surface	80.4	80.9 27.2 C.	Bright blue	..	82.3 28.0 C.	27.4	5.00 5.10 5.20 5.25 5.35 5.50	1.8 12.0 23.0 28.0 40.0 55.5	6.8437 .1559 .2368				
														27.5	5.23	26.7	7.2364	1.02290	1.02615	1.02299	
47	24	Dec.	8	19.0	2 46 N.	26 40 W.	..	Surface	80.0	80.3 26.8 C.	Bright blue	..	82.7 28.2 C.	27.4	5.05 5.10 5.20 5.25 5.50	5.0 10.3 21.0 27.5 55.0	6.8437 .1556 .2111				
														27.45	5.22	23.8	7.2104	1.02299	1.02623	1.02318	
48	25	Dec.	9	6.15	2 2 N.	27 17 W.	..	Surface	78.5	79.7 26.5 C.	Bright blue	..	81.9 27.7 C.	27.3	5.05 5.15 5.25 5.50 5.60	3.0 15.0 25.5 53.0 65.0	6.8437 .1551 .2865				
														27.35	5.31	32.3	7.2853	1.02306	1.02627	1.02332	
50	26	Dec.	9	12.10	1 42 N.	27 29 W.	..	Surface	79.3	80.1 26.7 C.	Bright blue	..	82.0 27.8 C.	27.2	5.10 5.15 5.35 5.50 5.70	8.0 13.3 35.0 51.2 72.0	6.8437 .1542 .3184				
														27.2	5.36	35.9	7.3163	1.02316	1.02633	1.02331	
52	27	Dec.	9	18.28	1 25 N.	27 59 W.	..	Surface	79.0	80.0 26.7 C.	..	..	81.1 27.3 C.	26.8	5.10 5.20 5.25 5.35 5.40	7.0 17.5 22.0 33.0 37.8	6.8437 .1520 .2084				
														26.8	5.26	23.5	7.2041	1.02324	1.02629	1.02327	
53	28	Dec.	10	12.0	0 56 N. St Paul's	29 24 W. Rocks	..	Surface	79.5	79.8 26.6 C.	Bright blue	..	80.9 27.2 C.	27.0	5.10 5.20 5.25 5.30 5.50	5.8 17.7 23.0 28.0 49.0	6.8437 .1525 .2191				
														26.9	5.27	24.7	7.2153	1.02323	1.02631	1.02332	
55	29	Dec.	11	12.0	0 18 S.	30 37 W.	..	Surface	78.6	78.9 26.1 C.	Bright blue	..	80.8 27.1 C.	27.0	5.20 5.30 5.35 5.50 5.60 5.25 5.40 5.45 5.55	11.2 22.0 26.5 44.5 55.5 16.0 32.0 37.0 49.0	6.8437 .1531 .2391				
														27.0	5.40	32.6	7.2859	1.02354	1.02665	1.02382	

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of the Air.
57	30	1902.	Dec.	12	12.0	° ' 1 59 S.	° ' 32 9 W.	..	Surface	° F. 78.7	° F. 79.1	Bright blue	..	° F. 80.7	° C. 27.1 C.	5-15 5-20 5-25 5-30 5-35	5-0 10-0 16-0 20-8 26-0	6.8437 .1525 .1383			
61	31	Dec.	13	12.0	3 39 S.	33 21 W.	..	Surface	78.9	79.0	Bright blue	..	81.6	27.6 C.	26-9	5-25 5-30 5-35	15-6 10-0 16-0	7.1345 .1494 .1348	1-02357	1-02665	1-02379
61	31	Dec.	13	12.0	3 39 S.	33 21 W.	..	Surface	78.9	79.0	Bright blue	..	81.6	27.6 C.	26-9	5-20 5-25 5-30 5-35	6-0 11-0 16-5 22-2 27-0	6.8437 .1503 .1463	1-02337	1-02678	1-02395
61	31	Dec.	13	12.0	3 39 S.	33 21 W.	..	Surface	78.9	79.0	Bright blue	..	81.6	27.6 C.	26-5	5-30 5-35 5-40 5-45 5-50 5-55 5-60 5-65 5-70	18-5 22-5 28-7 34-0 39-8 45-0 51-0 56-2 62-0	6.8437 .1534 .3521	1-02380	1-02676	1-02393
61	31	Dec.	13	12.0	3 39 S.	33 21 W.	..	Surface	78.9	79.0	Bright blue	..	81.6	27.6 C.	27-1	5-30 5-35 5-40 5-45 5-50 5-55 5-60 5-65 5-70	19-0 24-5 29-5 34-5 41-0 46-0 51-0 56-5 62-0	6.8437 .1525 .3592	1-02373	1-02686	1-02403
61	31	Dec.	13	12.0	3 39 S.	33 21 W.	..	Surface	78.9	79.0	Bright blue	..	81.6	27.6 C.	27-0	5-30 5-35 5-40 5-45 5-50 5-55 5-60 5-65 5-70	18-5 22-5 28-0 35-5 40-5 47-5 51-0 56-5 62-0	6.8437 .1542 .3566	1-02369	1-02678	1-02394
61	31	Dec.	13	12.0	3 39 S.	33 21 W.	..	Surface	78.9	79.0	Bright blue	..	81.6	27.6 C.	27-2	5-30 5-35 5-40 5-45 5-50 5-55 5-60 5-65 5-70	18-5 22-5 28-0 35-5 40-5 47-5 51-0 56-5 62-0	6.8437 .1542 .3566	1-02370	1-02688	1-02404
<p>This sample was tested for checking purposes five times on 17th Dec. 1902, each observation being perfectly independent of the other. Two observations each were made by W. S. B. and myself and one by R. C. M. The conditions during the last three observations were more favourable than during the first two, chiefly on account of the motion of the ship being gentler.—D. W. W.</p>												W. S. B.	..	26.5	5-30	16.5	7.1403	1-02380	1-02676	1-02393	
<p>The following four samples tested at Fort Stanley on the 10th Jan. 1903:—</p>												R. C. M.	..	27.2	5-50	40.2	7.3545	1-02370	1-02688	1-02404	
												..	..	55.2	11.95	6-10	37-0	7.2397	1-02753	1-02678	
												..	..	55.6	12.45	6-10	48.7	7.3462	1-02695	1-02630	
												..	..	56.1	12.4	6-10	47.1	7.3318	1-02702	1-02636	
												..	..	56.0	12.45	5-80	15.1	7.0432	1-02698	1-02633	

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.											
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)					
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				w.	R.	V.	Observed at t'.	Reduced to 15°-56.	Reduced to t.
63	32	1902. Dec.	14	12.0	5 48 S.	34 22 W.	..	Surface	75.6	78.9	Bright blue	Noon 16/12/02	82.7 28.2 C.	27.0	5.20 5.25 5.30 5.35 5.40	10.0 16.0 21.0 27.5 32.8	6.8437 .1537 .1907						
													27.1	5.30	21.5	7.1881	1.02354	1.02668	1.02385				
64	33	Dec.	14	18.35	6 23 S.	34 29 W.	..	Surface	78.8	79.1	..	13.40 16/12/02	82.7 28.2 C.	27.3	5.20 5.25 5.30 5.35 5.40	9.8 15.2 20.5 26.8 32.5	6.8437 .1554 .1862						
													27.4	5.30	21.0	7.1853	1.02356	1.02680	1.02393				
65	34	Dec.	14	22.10	6 43 S.	34 33 W.	..	Surface	79.0	80.9	Remarkably lighter	14.12 16/12/02	82.9 28.3 C.	27.3	5.20 5.25 5.30 5.35 5.40	4.8 10.0 15.8 21.5 27.5	6.8437 .1559 .1410						
													27.5	5.30	15.9	7.1406	1.02380	1.02707	1.02389				
67	35	Dec.	15	12.0	7 19 S.	34 33 W.	..	Surface	79.3	79.9	Light blue, slightly greenish	14.50 16/12/02	83.3 28.5 C.	27.4	5.20 5.25 5.30 5.35 5.40	8.0 14.0 19.7 25.0 30.5	6.8437 .1559 .1721						
													27.5	5.30	19.4	7.1717	1.02363	1.02690	1.02390				
70	36	Dec.	16	12.0	9 6 S.	34 45 W.	..	Surface	79.0	79.9	Bright blue	15.13 16/12/02	83.5 28.6 C.	27.3	5.20 5.25 5.30 5.35 5.40	6.5 11.8 17.3 23.0 28.5	6.8437 .1554 .1543						
													27.4	5.30	17.4	7.1534	1.02373	1.02697	1.02397				
72	37	Dec.	17	12.0	..	..	..	Surface	79.0	79.1	Bright blue	..	81.0 27.2 C.	26.8	5.30 5.35 5.40 5.45 5.50	6.8 12.5 17.5 23.2 29.0	6.8437 .1525 .1579						
													27.0	5.50	29.0	..							
													26.9	5.40	17.8	7.1541	1.02426	1.02736	1.02448				
72	37	Dec.	17	12.0	..	..	..	Surface	79.0	79.1	..	..	81.0 27.2 C.	26.9	5.30 5.35 5.40 5.45 5.50	6.0 11.2 17.0 22.0 27.5	6.8437 .1528 .1481						
													27.0	5.50	27.5	..							
												W. S. B.	..	26.95	5.40	16.7	7.1446	1.02431	1.02742	1.02455			
72	37	Dec.	17	12.0	..	..	..	Surface	79.0	79.1	..	..	81.0 27.2 C.	27.0	5.30 5.35 5.40 5.45 5.50	6.5 10.5 16.0 21.0 26.5	6.8437 .1531 .1428						
													27.0	5.50	26.5	..							
												R. C. M.	..	27.0	5.40	16.1	7.1396	1.02434	1.02747	1.02459			

This sample was tested by W. S. B., R. C. M., and myself for checking purposes on the afternoon of the same day as it was taken.

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of Sea at Position L.
75	38	1902. Dec.	18	12.0	13 24 S.	36 37 W.	..	Surface	79.0	79.9 26.6 C.	Bright blue		16.35	80.8 27.1 C.	26.9	5.30 5.35 5.40 5.45 5.50	7.0 12.0 17.7 23.5 29.0	6.8437 .1528 .1578			
78	39	Dec.	19	12.0	15 24 S.	37 12 W.	..	Surface	80.0	80.4 26.9 C.	Bright blue	10.0 20/12/02	83.3 28.5 C.	27.5	26.95 5.40 5.30 5.35 5.40 5.45 5.50 5.55 5.60 5.65 5.70	17.8 7.1543 5.5 11.8 17.5 23.0 29.7 35.5 40.5 46.0 52.5	7.2588 1.02426 6.8437 .1570 .2581	1.02426	1.02737	1.02437	
80	40	Dec.	20	12.0	18 11 S.	37 52 W.	..	Surface	81.1	79.2 26.2 C.	Slightly lighter than yesterday	12.10	84.8 29.3 C.	26.7	27.7 5.50 5.30 5.35 5.40 5.45 5.50 5.55 5.60 6.65 5.70	29.1 7.2588 4.5 10.0 16.2 22.0 27.5 34.0 40.0 45.2 51.3	6.8437 .1534 .2474	1.02422	1.02758	1.02447	
82	41	Dec.	21	12.0	20 40 S.	38 20 W.	..	Surface	79.0	78.9 26.1 C.	Bright blue	13.40 22/12/02	83.2 28.5 C.	27.5	27.05 5.50 5.30 5.35 5.40 5.45 5.50 5.55 5.60 5.65 5.70	27.9 7.2445 9.8 14.7 20.2 25.5 31.5 37.7 43.0 49.0 55.0	6.8437 .1571 .2320	1.02430	1.02745	1.02457	
84	42	Dec.	22	12.0	22 41 S.	39 15 W.	..	Surface	79.8	78.7 25.9 C.	Bright blue	14.20	83.8 28.8 C.	27.4	27.7 5.50 5.40 5.45 5.50 5.55 5.60	31.8 7.2328 20.0 25.8 31.5 37.2 43.0	6.8437 .1562 .2794	1.02409	1.02744	1.02459	
87	43	Dec.	23	12.0	24 44 S.	40 28 W.	..	Surface	79.4	79.1 26.2 C.	Bright blue, though darker than yesterday	14.45	81.9 27.7 C.	27.2	27.55 5.50 5.30 5.35 5.40 5.45 5.50 5.55 5.60 5.65 5.70	31.5 7.2793 9.8 15.0 20.2 26.0 31.7 38.0 43.0 49.0 54.8	6.8437 .1548 .2329	1.02411	1.02741	1.02462	
89	44	Dec.	24	12.0	26 35 S.	42 1 W.	..	Surface	78.9	77.6 25.3 C.	Bright blue	15.15 26/12/02	82.2 27.9 C.	27.4	27.3 5.50 5.40 5.45 5.50 5.55 5.60	31.9 7.2814 30.5 36.2 41.8 47.8 53.0	6.8437 .1554 .3716	1.02410	1.02732	1.02444	
														27.4	5.50	41.9	7.3707	1.02361	1.02685	1.02425	







Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	f.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
		of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.	w.	R.	V.	4 S <sub>v</sub> .	4 S <sub>15°-56</sub> .			4 S <sub>t</sub> .								
109r	62	1903.	2	20.5	..	..	..	Surface	58.0	55.9 13.3 C.	Same as last		15.0 3/1/03	60.8 16.0 C.	16.4	5.40 5.45 5.50 5.55 5.60	12.0 17.5 23.0 28.5 33.5	6.8437 .0921 .2031			
111	63	Jan.	3	12.0	..	..	..	Surface	57.2	55.1 12.8 C.	Slaty blue	a.m. 10/1/03	52.4 11.3 C.	11.6	5.50 5.55 5.60 5.65 5.70	4.7 10.0 15.2 20.9 26.2	6.8437 .0658 .1366	1.02488	1.02504	1.02552	
113	64	Jan.	4	8.0	..	..	..	Surface	53.6	48.9 9.4 C.	Greenish blue	a.m. 10/1/03	53.6 12.0 C.	11.8	5.50 5.55 5.60 5.65 5.70	5.9 11.2 16.7 22.1 27.7	6.8437 .0669 .1481	1.02592	1.02511	1.02569	
114	65	Jan.	4	12.0	..	..	..	Surface	53.0	49.2 9.6 C.	Very dark green	a.m. 10/1/03	52.9 11.6 C.	11.6	5.60 5.65 5.70 5.75 5.80	16.2 21.9 27.2 32.8 38.1	6.8437 .0663 .2413	1.02585	1.02507	1.02627	
114	66	Jan.	5	12.0	..	..	..	Surface	49.7	48.3 9.1 C.	Turquoise	a.m. 10/1/03	53.9 12.2 C.	11.6	5.60 5.65 5.70 5.75 5.80	17.5 22.9 28.3 33.6 39.0	6.8437 .0658 .2510	1.02588	1.02509	1.02625	
114	67	Jan.	6	9.0	Fort Stanley	..	..	Surface	59.2	53.0 11.7 C.	Very rich green	a.m. 10/1/03	54.2 11.3 C.	11.4	5.50 5.55 5.60 5.65 5.70	8.3 13.7 19.0 24.3 30.0	6.8437 .0649 .1694	1.02583	1.02502	1.02626	
120	68	Jan.	27	12.0	52 55 S.	55 0 W.	..	Surface	46.5	44.6 7.0 C.	Light greenish blue	a.m. 31/1/03	42.5 5.8 C.	5.7	5.70 5.75 5.80 5.85 5.90	11.5 17.0 22.5 28.7 34.5	6.8437 .0335 .2022	1.02575	1.02492	1.02570	
123	69	Jan.	27	20.0	53 28 S.	53 55 W.	..	Surface	45.7	43.8 6.6 C.	..	a.m. 31/1/03	44.2 6.8 C.	6.2	5.60 5.65 5.70 5.75 5.80	1.2 6.5 12.0 17.8 23.0	6.8437 .0357 .1073	1.02681	1.02511	1.02667	
126	70	Jan.	28	8.0	54 22 S.	52 20 W.	..	Surface	45.0	43.4 6.3 C.	Greenish blue	10.40 31/1/03	44.7 7.1 C.	6.3	5.60 5.65 5.70 5.75 5.80	2.2 8.0 13.5 18.5 24.8	6.8437 .0369 .1188	1.02678	1.02514	1.02674	
														6.5	5.70	13.4	6.9994	1.02671	1.02509	1.02673	











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		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)							
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	d. from which the Sample was collected.	° F. of the Air.	° F. of the Water.			T. of the Air.	t. of the Sample.				° F.	° C.	w.	R.	V.	Observed at t'.	Reduced to 15°-56 C.	Reduced to t.
178	117	1903.	Feb.	8	16.0	..	..	..	Surface	31.5	30.4		-0.9 C.	Reeve's French blue (lighter)	14.16	47.7	8.7 C.	7.4	5.50	16.9	6.8437	1.02544	1.02399	1.02619	
																		5.55	22.3						
																		5.60	27.9						
																		5.65	33.5						
																		5.70	38.9						
																		7.6							
																		7.5	5.60	27.9	7.1336				
179	118	Feb.	8	20.0	..	..	..	Surface	31.0	30.0	-1.1 C.	Reeve's French blue	14.35	48.4	9.1 C.	7.5	5.50	10.7	6.8437						
																		5.55	15.7						
																		5.60	21.0						
																		5.65	26.3						
																		5.70	32.0						
																		7.8							
																		7.65	5.60	21.1	7.0742	1.02577	1.02433	1.02655	
180	119	Feb.	8	24.0	..	..	..	Surface	31.0	31.0	-0.6 C.	Sailing all day along edge of pack Reeve's French blue	14.50	48.9	9.4 C.	7.5	5.50	5.9	6.8437						
																		5.55	11.0						
																		5.60	16.2						
																		5.65	21.9						
																		5.70	27.2						
																		7.8							
																		7.65	5.60	16.4	7.0326	1.02599	1.02454	1.02675	
181	120	Feb.	9	4.0	..	..	..	Surface	30.6	29.8	-1.2 C.	..	15.6	49.7	9.8 C.	7.4	5.50	5.7	6.8437						
																		5.55	10.5						
																		5.60	16.1						
																		5.65	21.4						
																		5.70	26.7						
																		7.8							
																		7.6	5.60	16.1	7.0296	1.02601	1.02456	1.02680	
182	121	Feb.	9	8.0	..	..	..	Surface	30.9	30.0	-1.1 C.	Steaming amongst bay ice Reeve's French blue	15.25	49.6	9.8 C.	7.1	5.50	5.0	6.8437						
																		5.55	10.0						
																		5.60	15.3						
																		5.65	21.0						
																		5.70	26.2						
																		7.4							
																		7.25	5.60	15.5	7.0223	1.02605	1.02455	1.02678	
183	122	Feb.	9	12.0	..	..	..	Surface	30.6	30.0	-1.1 C.	Amongst light ice Reeve's French blue	15.45	49.2	9.6 C.	5.8	5.50	3.3	6.8437						
																		5.55	14.0						
																		5.60	8.7						
																		5.65	19.5						
																		5.70	25.0						
																		6.3							
																		6.05	5.60	14.1	7.0031	1.02616	1.02450	1.02673	
184	123	Feb.	9	16.0	..	..	..	Surface	30.5	29.9	-1.2 C.	Reeve's French blue	13.52	48.0	8.9 C.	7.1	5.50	5.6	6.8437						
																		5.55	11.0						
																		5.60	16.8						
																		5.65	22.1						
																		5.70	27.7						
																		7.3							
																		7.2	5.60	16.6	7.0317	1.02600	1.02449	1.02673	
185	124	Feb.	9	20.0	..	..	..	Surface	29.2	29.7	-1.3 C.	Reeve's French blue	14.10	47.9	8.8 C.	6.9	5.50	3.0	6.8437						
																		5.55	8.0						
																		5.60	13.6						
																		5.65	19.0						
																		5.70	24.4						
																		7.2							
																		7.05	5.60	13.6	7.0043	1.02615	1.02462	1.02687	
186	125	Feb.	9	24.0	..	..	..	Surface	28.2	29.4	-1.4 C.	..	14.32	47.5	8.6 C.	6.5	5.50	0.5	6.8437						
																		5.55	5.4						
																		5.60	11.1						
																		5.65	16.6						
																		5.70	22.0						
																		6.7							
																		6.6	5.60	11.1	6.9795	1.02629	1.02469	1.02694	









Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of Sea at Position L.
214	152	1903.	Feb.	15	16.0	..	..	..	Surface	30.3	° F. 31.0 ° C. -0.6	Ice about two miles off Reeve's French blue	16.20 16/2/03	47.3 8.5 C.	7.9	5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	4.0 9.2 14.8 22.0 26.0 31.5 37.0 43.0 48.0	6.8437 .0462 .2324			
215	153	Feb.	15	20.0	61 58 S.	26 3 W.	..	Surface	30.2	31.0 -0.6 C.	Ice about three miles off	5.50 16/2/03	49.0 9.4 C.	8.3	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	2.0 6.8 12.0 18.0 23.0 28.2 33.5 39.0 45.0	6.8437 .0482 .2049	1.02630	1.02491	1.02714	
216	154	Feb.	15	24.0	..	..	..	Surface	30.2	31.1 -0.5 C.	Only a few small distant bergs, no pack ice	6.15 16/2/03	49.4 9.7 C.	7.8	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	1.0 6.0 11.5 16.8 23.0 28.0 33.5 39.2 45.0	6.8437 .0456 .2013	1.02618	1.02485	1.02707	
217	155	Feb.	16	4.0	..	..	..	Surface	29.3	30.9 -0.6 C.	Only a few distant bergs, no pack	5.50 17/2/03	49.1 9.5 C.	6.7	5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	3.5 8.0 14.0 20.2 26.0 31.0 36.5 42.0 48.5	6.8437 .0405 .2262	1.02621	1.02482	1.02704	
217	155	..	..	..	..	..	..	..	..	..	Again tested at 6.25 on	17/2/03	47.0 8.3 C.	7.6	5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	25.5 5.0 10.5 16.0 21.0 27.0 33.0 38.0 43.7 49.0	7.1104 6.8437 .0442 .2395	1.02637	1.02485	1.02707	
219	156	Feb.	16	8.0	..	..	..	Surface	30.4	31.0 -0.6 C.	Only a few distant bergs, no pack Reeve's French blue	7.35 18/2/03	38.6 3.7 C.	3.8	5.60 5.65 5.70 5.75 5.80 5.85 5.90	5.5 11.0 16.2 22.0 27.0 33.0 38.2 44.0 49.5	6.8437 .0244 .2430	1.02628	1.02485	1.02707	
													4.3	5.80	27.4	7.1111	1.02663	1.02476	1.02698		



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.													
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)							
		Month.	Day.	Hour.	Lat.	Long.	D.	f.	° F.	° F.			T.	t.				° F.	° C.	w.	R.	V.	Observed at t.	Reduced to 15°-56 C.	Reduced to t.
227	164	1903.	17	16.0	..	..	..	Surface	31-0	32-0	0-0 C.	No ice in sight Light slaty blue	11.50 19/2/03	44-0 6-7 C.	5-3	5-70 5-75 5-80 5-85 5-90	12-0 17-5 23-0 28-5 33-5	6-8437 .0309 .2031							
															5-45	5-80	22-9	7-0777	1-02682	1-02507	1-02728				
228	165	Feb.	17	20.0	..	..	..	Surface	29-5	31-7	-0-2 C.	One or two bergs on horizon	14.10 19/2/03	47-7 8-7 C.	5-6	5-70 5-75 5-80 5-85 5-90	12-8 18-0 23-2 28-8 34-5	6-8437 .0320 .2084							
															5-65	5-80	23-5	7-0841	1-02678	1-02506	1-02728				
229	166	Feb.	17	24.0	..	..	..	Surface	29-6	31-2	-0-4 C.	Distant bergs only	14.25 19/2/03	43-2 6-2 C.	5-7	5-70 5-75 5-80 5-85 5-90	14-0 20-0 25-8 31-5 37-0	6-8437 .0329 .2279							
															5-8	5-80	25-7	7-1045	1-02667	1-02496	1-02718				
230	167	Feb.	18	4.0	..	..	..	Surface	29-2	31-1	-0-5 C.	No ice in sight	14.50 19/2/03	44-0 6-7 C.	5-7	5-70 5-75 5-80 5-85 5-90	15-0 20-0 25-0 30-0 35-8	6-8437 .0329 .2235							
															5-8	5-80	25-2	7-1001	1-02669	1-02498	1-02721				
231	168	Feb.	18	8.0	..	..	..	Surface	30-0	31-0	-0-6 C.	No ice in sight Slaty blue	15.0 19/2/03	44-5 6-9 C.	5-7	5-60 5-65 5-70 5-75 5-80	4-5 10-0 15-5 20-5 26-0	6-8437 .0329 .1357							
															5-8	5-70	15-3	7-0123	1-02664	1-02493	1-02716				
232	169	Feb.	18	12.0	..	..	..	Surface	30-0	31-0	-0-6 C.	No ice in sight Green	13.30 19/2/03	44-7 7-1 C.	5-6	5-70 5-75 5-80 5-85 5-90 5-95 6-00 6-05 6-10	13-0 18-0 24-0 30-0 35-5 40-0 45-0 50-2 55-5	6-8437 .0332 .3069							
															5-85	5-90	34-6	7-1838	1-02677	1-02506	1-02730				
233	170	Feb.	18	16.0	66 5 S.	23 9 W.	..	Surface	30-7	31-0	-0-6 C.	No ice in sight	10.20 20/2/03	52-9 11-6 C.	7-6	5-60 5-65 5-70 5-75 5-80 5-85 5-90 5-95 6-00	8-0 13-5 19-5 25-0 30-5 36-5 42-2 47-0 53-0	6-8437 .0456 .2714							
															8-0	5-80	30-5								
															8-5	6-00	53-0								
															8-05	5-80	30-6	7-1607	1-02636	1-02496	1-02719				

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
							of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.			of the Air.	of the Sample.	w.	R.	V.	4S <sub>t</sub> .	4S <sub>15°-56</sub> .	4S <sub>t</sub> .	
234	171	1903.	Feb.	18	20.0	..	..	..	Surface	31.0	30.9 -0.6 C.	No ice in sight Green	11.0 20/2/03	54.1 12.3 C.	8.2	5.60 5.65 5.70 5.75 5.80 5.85 5.90 5.95 6.00	9.8 15.0 20.8 26.5 32.0 37.8 43.3 48.0 53.5	6.8437 .0488 .2820			
235	172	Feb.	18	24.0	..	..	..	Surface	30.4	30.7 -0.7 C.	..	11.30 20/2/03	55.0 12.8 C.	8.4	5.70 5.75 5.80 5.85 5.90	25.2 30.5 36.5 42.0 47.5	6.8437 .0490 .3219	1.02629	1.02497	1.02720	
236	173	Feb.	19	4.0	..	..	..	Surface	30.0	30.2 -1.0 C.	No ice in sight	..	47.8 8.8 C.	4.8	5.60 5.65 5.70 5.75 5.80	11.0 16.2 21.8 27.5 32.8	6.8437 .0295 .1942				
237	174	Feb.	19	8.0	..	..	..	Surface	30.0	30.0 -1.1 C.	No ice in sight Light blue	..	50.2 10.1 C.	3.5	5.60 5.65 5.70 5.75 5.80	9.5 15.0 20.0 25.5 30.8	6.8437 .0204 .1792				
238	175	Feb.	19	12.0	68 33 S.	24 31 W.	..	Surface	29.5	29.7 -1.3 C.	Several small broken pieces of ice floating about Reeve's French blue	12.0 20/2/03	55.9 13.3 C.	9.0	5.70 5.75 5.80 5.85 5.90	20.2 30.0 35.8 41.0 46.5 52.0	6.8437 .0524 .3645	1.02647	1.02454	1.02677	
239	176	Feb.	19	16.0	..	..	..	Surface	29.8	29.6 -1.3 C.	No ice in sight Reeve's French blue	13.55 20/2/03	55.3 12.9 C.	9.4	5.60 5.65 5.70 5.75 5.80	20.0 26.0 31.2 36.8 42.2	6.8437 .0539 .2767				
240	177	Feb.	19	20.0	..	..	..	Surface	27.1	29.1 -1.6 C.	Pieces of ice floating about Reeve's French blue	14.10 20/2/03	55.3 12.9 C.	10.0	5.70 5.75 5.80 5.85 5.90	31.2 33.5 38.9 44.0 49.5 54.5	6.8437 .0576 .3911	1.02575	1.02458	1.02683	
241	178	Feb.	19	24.0	..	..	..	Surface	23.1	29.0 -1.7 C.	Amongst brackish ice	14.30 20/2/03	54.8 12.7 C.	10.2	5.80 5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	44.1 10.5 15.8 21.2 26.5 31.8 37.8 42.8 48.0 53.5	6.8437 .0595 .2838				
														10.5	5.70	32.0	7.1870	1.02568	1.02468	1.02694	







Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.											
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)					
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	f. from which the Sample was collected.	T.	t.			T'. of the Air.	t'. of the Sample.				w.	R.	V.	Observed at t'.	Reduced to 15° 56 C.	Reduced to t.
									° F.	° F.													
255	192	1903. Feb.	22	8.0	..	..	..	Surface	18.7	29.0 -1.7 C.	Lying to amongst pack ice touching ship	14.30	54.5 12.5 C.	7.8	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	1.8 6.8 11.9 22.0 27.7 32.8 37.9 43.0	6.8437 .0459 .1978						
256	193	Feb.	22	12.0	70 21 S.	17 0 W.	..	Surface	19.6	29.0 -1.7 C.	Reeve's French blue Slush ice in sample	14.55	53.7 12.1 C.	6.0	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	21.1 26.7 32.0 37.7 43.0 48.5 53.8 59.2 15.3	6.8437 .0337 .3326	1.02623	1.02484	1.02710			
257	194	Feb.	22	24.0	..	..	..	Surface	20.0	29.0 -1.7 C.	Lying to amongst ice; none in sample	11.30 23/2/03	52.5 11.4 C.	7.4	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	3.5 8.5 13.8 19.0 24.5 30.0 35.0 41.0 46.0	6.8437 .0439 .2182	1.02529	1.02364	1.02585			
258	195	Feb.	23	8.0	..	..	..	Surface	20.1	29.0 -1.7 C.	Steaming through bay ice Reeve's French blue	12.12	51.8 11.0 C.	6.9	5.70 5.75 5.80 5.85 5.90 5.95 5.65 5.60 5.55	27.0 32.5 38.0 43.2 48.5 54.9 22.0 16.5 10.8	6.8437 .0408 .2891	1.02613	1.02469	1.02695			
259	196	Feb.	23	12.0	65 57 S.	16 53½ W.	..	Surface	21.0	28.9 -1.7 C.	Steaming through thin ice; some in sample Reeve's French blue	14.30 25/2/03	48.5 9.2 C.	10.1	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.45 5.40	31.8 37.0 42.5 47.5 52.0 57.0 61.5 23.2 17.8	6.8437 .0564 .3645	1.02602	1.02451	1.02676			
260	197	Feb.	24	12.0	69 52 S.	17 12 W.	..	Surface	23.8	29.0 -1.7 C.	Steaming through pack A few ice spicules in sample Reeve's French blue	15.0 25/2/03	47.2 8.4 C.	10.1	5.40 5.45 5.50 5.55 5.60 5.65 5.70 5.75 5.80	1.0 6.0 11.5 16.5 22.0 27.0 32.0 37.2 43.2	6.8437 .0576 .1933	1.02472	1.02364	1.02585			
													10.15	5.60	21.8	7.0946	1.02565	1.02459	1.02685				



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	d. from which the Sample was collected.	T.	t.			T.	t.							
									of the Air.	of the Water.								Observed at t.	Reduced to 15°-56 C.	Reduced to t.	
° F.	° F.	° F.	° C.	w.	R.	V.	4 S <sub>v</sub> .	4 S <sub>15°-56</sub> .	4 S <sub>t</sub> .												
266	203	1903. Feb.	26	24.0	..	..	..	Surface	28-0	29-1 -1.6 C.	..	11.45 28/2/03	62.8 17-1 C.	11-7	5-50 5-55 5-60 5-65 5-70 5-75 5-80 5-85 5-90	30-0 35-0 40-0 42-0 46-0 51-0 56-0 61-0 65-8	1-5471 .0724 -4288				
267	204	Feb.	27	12.0	..	..	..	Surface	28-9	29-2 -1.6 C.	Sailing through bay, and old ice touching ship Dull blue	12.10 28/2/03	55-0 12-8 C.	10-6	5-40 5-45 5-50 5-55 5-60 5-65 5-70 5-75 5-80	14-5 19-8 24-0 28-8 34-0 38-5 42-8 47-0 52-0	1-5471 .0658 -3032	1-02566	1-02486	1-02712	
268	205	Feb.	27	16.0	..	..	..	Surface	29-0	29-1 -1.6 C.	Lying to for sounding, ice touching ship	13.40 28/2/03	53-5 11-9 C.	10-7	5-50 5-55 5-60 5-65 5-70	29-0 34-5 39-8 45-0 50-0	1-5471 .0674 -3591	1-02585	1-02485	1-02712	
269	206	Feb.	27	20.0	..	..	..	Surface	28-7	28-9 -1.7 C.	Sailing through mostly pancake ice; some in sample	14.0 28/2/03	55-0 12-8 C.	10-8	5-00 5-05 5-10 5-15 5-20 5-25 5-30 5-35 5-40	9-5 13-5 18-5 22-5 27-5 33-5 39-5 44-5 49-5	1-5471 .0696 -2596	1-02553	1-02458	1-02685	
270	207	Feb.	27	24.0	..	..	..	Surface	27-3	29-0 -1.7 C.	..	14.40 28/2/03	55-6 13-1 C.	11-2	5-30 5-35 5-40 5-45 5-50 5-55 5-60 5-65 5-70	21-2 26-5 31-8 37-0 42-0 47-8 53-0 57-8 62-8	1-5471 .0708 -3347	1-02388	1-02301	1-02516	
271	208	Feb.	28	4.0	..	..	..	Surface	26-5	29-0 -1.7 C.	..	15.10	54-5 12-5 C.	10-2	5-50 5-55 5-60 5-65 5-70 5-75 5-80 5-85 5-90	22-8 27-8 32-0 37-0 41-0 50-0 54-0 58-0 62-8	1-5471 .0646 -3872	1-02482	1-02398	1-02619	
														10-35	5-45	37-0	1-9526	1-02482	1-02398	1-02619	
														10-35	5-70	42-8	1-9989	1-02593	1-02490	1-02717	



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of the Air.
273	214B	1903.	Feb.	28	20.0	..	..	..	1000	° F.	° F.	Nansen-Pettersson water-bottle Thermometer No. 18,725	11.0	° F.	° C.	5-50 5-55 5-60 5-65 5-70 5-75 5-80 5-85 5-90	3-8 8-9 14-5 19-8 25-6 30-2 35-8 41-0 46-0	1-5471 -0540 -2271			
													11-35	12-7 C.	8-4						
273	215	Feb.	28	20.30	..	..	..	1500	24-0	31-52	-0-29 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	11.35	51-5	10-8 C.	5-60 5-65 5-70 5-75 5-80 5-85 5-90 6-00	15-8 21-0 26-5 32-0 37-8 43-2 48-7 54-0 59-3	1-5471 -0552 -3401			
													14.25	47-5	8-6 C.						
274	216	Mar.	1	8.0	..	..	..	Surface	25-0	28-9	-1-7 C.	Steaming through pancake ice Slush (little) in sample Reeve's French blue	14.25	47-5	8-6 C.	5-50 5-55 5-60 5-65 5-70 5-75 5-80 5-85 5-45	31-7 36-5 41-7 44-8 49-9 53-9 58-5 62-5 21-0	1-5471 -0690 -4025			
													15.0	48-7	9-3 C.						
275	217	Mar.	1	12.0	69 3 S.	28 2 W.	..	Surface	25-0	29-2	-1-6 C.	Steaming in open pool of water Dull blue	15.0	48-7	9-3 C.	5-40 5-45 5-50 5-55 5-60 5-65 5-70 5-75 5-80	6-9 12-0 17-0 22-2 27-0 31-8 36-5 41-0 46-2	1-5471 -0527 -2415			
													10.20	47-5	8-6 C.						
276	218	Mar.	1	16.0	..	..	..	Surface	25-6	29-0	-1-7 C.	Steaming through loose ice A little slush in sample Reeve's French blue (light)	10.20	47-5	8-6 C.	5-50 5-55 5-60 5-65 5-70 5-75 5-80 5-85 5-90	25-5 30-5 36-0 41-0 46-5 51-5 57-0 62-0 67-0	1-5471 -0502 -4188			
													10.45	50-0	10-0 C.						
277	219	Mar.	1	20.0	..	..	..	Surface	25-8	29-0	-1-7 C.	Steaming in open pool surrounded by ice Turquoise? (light bad)	10.45	50-0	10-0 C.	5-70 5-75 5-80 5-85 5-90	38-0 43-5 49-0 54-0 59-0	1-5471 -0524 -4405			
													8-4	5-80	48-7						



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.											
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C.=1.)					
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	f. from which the Sample was collected.	T. of the Air.	t. of the Water.			T'. of the Air.	t'. of the Sample.				w.	R.	V.	Observed at t'. 4 S <sub>v</sub> .	Reduced to 15°-56 C. 4 S <sub>15°-56</sub> .	Reduced to t. 4 S <sub>t</sub> .
280	226	1903.	Mar.	2	14.0	..	..	..	1000	26.2	31.84 -0.08 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	9.35 3/3/03	52.5 11.4 C.	8.8	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	3.7 9.3 14.8 20.5 26.0 31.6 37.1 42.5 48.0	1.5471 .0568 .2343					
280	227	Mar.	2	15.40	..	..	..	1500	26.2	31.71 -0.17 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	10.10 3/3/03	53.6 12.0 C.	8.9	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	4.8 9.9 15.0 21.0 26.6 31.6 36.9 42.3 47.7	1.5471 .0571 .2370	1.02684	1.02559	1.02782			
280	228	Mar.	2	16.0	..	..	..	400	26.2	32.82 0.45 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	10.45 3/3/03	52.9 11.6 C.	9.0	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	4.5 9.8 15.6 21.1 27.0 31.9 37.2 42.9 48.1	1.5471 .0580 .2397	1.02682	1.02558	1.02782			
280	229	Mar.	2	16.15	..	..	..	300	26.2	33.1 0.61 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	11.10 3/3/03	53.0 11.7 C.	9.3 9.4	5.50 5.65 5.70 5.75 5.80 5.85 5.90 5.95 6.00	16.5 21.9 27.5 32.8 38.5 43.5 49.5 54.8 60.0	1.5471 .0599 .3465	1.02680	1.02559	1.02784			
280	230	Mar.	2	16.25	..	..	..	200	26.2	32.72 0.40 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	11.50 3/3/03	52.8 11.6 C.	9.4 9.6	5.50 5.65 5.70 5.75 5.80 5.85 5.90 5.95 6.00	16.1 21.5 27.0 32.7 38.0 43.2 49.1 54.6 61.0	1.5471 .0605 .3447	1.02674	1.02558	1.02783			
280	231	Mar.	2	14.30	..	..	..	100	26.2	32.30 0.17 C.	Nansen-Pettersson water-bottle Thermometer No. 18,725	12.15 3/3/03	52.3 11.3 C.	9.2 9.4	5.50 5.65 5.70 5.75 5.80 5.85 5.90 5.95 6.00	14.9 20.2 25.9 31.0 36.5 41.7 47.5 52.7 58.2	1.5471 .0587 .3302	1.02675	1.02560	1.02785			
													9.4	5.80	36.5	1.9360	1.02684	1.02564	1.02787				





		Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
Number of Station.	Number of Sample.	Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T.	t.				Observed at t.	Reduced to 15°-56 C.	Reduced to t.	
		of the Air.	of the Sample.	w.	R.	V.	4 S t.	4 S 15°-56.	4 S t.												
283	239	1903.	3	24.0	..	..	..	Surface	28.0	29.0	..	11.35	49.3	6.7	5.50	12.5	1.5471				
		Mar.										5/3/03	9.6 C.	5.55	18.9	.0431					
														5.60	23.5	.2108					
														5.65	28.7						
														5.70	34.0						
														7.1							
														6.9	5.60	23.3	1.8010	1.02650	1.02494	1.02721	
284	240A	Mar.	4	12.0	..	..	..	Piece of ice from a berg	28.0	..	Temperature about 3 ins. in ice = -2.0 C.: not sample Temperature of water with ice = 0° C.: sample, first melting	12.0	49.9	7.1	1.20	15.1					
												5/3/03	9.9 C.	1.25	20.1						
														1.30	25.5						
														1.35	31.0						
														1.40	36.1						
														1.45	41.7						
														1.50	47.5	1.5471					
														1.55	52.7	.0459					
														1.60	57.8	.3293					
														7.35	1.40	36.4	1.9223	1.00273	1.00178	1.00278	
284	240B	Mar.	4	12.0	..	..	..	Same as 240A	..	..	Second melting	13.50	46.7	8.8	0.70	5.7					
												5/3/03	8.2 C.	0.75	10.7						
														0.80	16.0						
														0.85	21.8						
														0.90	27.0						
														0.95	31.9						
														1.00	37.5	1.5471					
														1.05	43.6	.0552					
														1.10	49.0	.2442					
														8.85	0.90	27.0	1.8465	1.00041	.99962	1.00043	
284	241	Mar.	4	20.0	..	..	..	Surface	28.8	29.0	Too dark	14.20	47.5	7.4	5.40	1.5					
												5/3/03	8.6 C.	5.45	6.2						
														5.50	11.5	1.5471					
														5.55	16.0	.0468					
														5.60	21.6	.1031					
														7.5	5.50	11.4	1.6970	1.02654	1.02506	1.02733	
285	242	Mar.	4	24.0	..	..	..	Surface	28.5	29.2	..	14.45	47.1	7.0	5.50	9.3					
												5/3/03	8.4 C.	5.55	14.5						
														5.60	19.7						
														5.65	24.8						
														5.70	30.0						
														5.75	35.1						
														5.80	40.1	1.5471					
														5.85	45.0	.0443					
														5.90	50.0	.2696					
														7.1	5.70	29.8	1.8610	1.02671	1.02517	1.02744	
286	243	Mar.	5	9.40	..	..	..	Surface	23.3	29.0	Turquoise	15.20	46.5	8.0	5.40	2.0					
												5/3/03	8.1 C.	5.45	7.0						
														5.50	12.5	1.5471					
														5.55	17.6	.0502					
														5.60	22.5	.1113					
														8.05	5.50	12.3	1.7086	1.02647	1.02507	1.02734	
286	244A	Mar.	5	10.40	..	..	..	2473	21.9	31.49	Buchanan-Richard reversing thermometer and bottle Thermometer No. 102,504										

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of the Air.
of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.	w.	R.	V.	4 S t.	4 S 15°-56.	4 S t.												
286	244B	1903.	5	10.40	..	..	..	2488, bottom.	° F. Same as 244A	° F. 244A	Buchanan's sounding-tube	9.20 7/3/03	50.9 10.5 C.	8.2	5.50 5.55 5.60 5.65 5.70 5.75	5.2 10.9 17.0 22.6 27.8 33.2	1.5471 .0546 .1760				
286	244B	Mar.	5	10.40	..	..	..	..	Tested again at 11.20 on the			10/3/03.	50.0 10.0 C.	7.8	5.50 5.55 5.60 5.65 5.70 5.75	3.8 8.9 14.8 20.0 25.0 30.3	1.5471 .0505 .1547	1.02677	1.02547	1.02771	
287	245	Mar.	5	20.0	..	..	..	Surface	23.6	28.8 -1.8 C.	..	11.0 6/3/03	54.7 12.6 C.	8.8	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	16.0 21.0 26.0 31.0 36.7 41.8 47.0 52.0 57.0	1.5471 .0562 .3302	1.02691	1.02551		
288	246	Mar.	5	24.0	..	..	..	Surface	24.0	29.0 -1.7 C.	..	11.30 6/3/03	52.9 11.6 C.	8.6	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	13.8 18.8 23.8 29.0 34.1 39.6 44.5 49.5 54.0	1.5471 .0555 .3085	1.02630	1.02504	1.02731	
289	247	Mar.	6	4.0	..	..	..	Surface	21.9	28.9 -1.7 C.	Spicules of ice in sample	12.0	52.5 11.4 C.	8.4	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	15.7 20.7 25.9 30.9 36.0 41.1 46.5 51.8 56.5	1.5471 .0537 .3266	1.02643	1.02515	1.02742	
290	248	Mar.	6	9.0	67 39 S.	36 10 W.	..	Surface	24.0	29.2 -1.6 C.	Taken whilst sounding Reeve's French blue	11.30	52.6 11.4 C.	8.2	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	11.2 16.3 21.2 26.6 31.6 36.6 41.2 46.7 51.0	1.5471 .0537 .2840	1.02634	1.02502	1.02729	
														8.6	5.70	31.4	1.8848	1.02658	1.02526	1.02753	



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.										
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)				
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				T'.	t'.	w.	R.	V.
															of Sea at Position L.	from which the Sample was collected.	of the Air.					
295	256	1903.	Mar.	10	10.0	..	..	..	Surface	28-9	29-3 -1.5 C.		Just after sounding, ice quite near Reeve's French blue	12.10 11/3/03	52-2 17-2 C.	8-3	5-50 5-60 5-70 5-80 5-90	13-3 24-2 34-9 45-8 56-2	1-5471 .0524 .3157			
														8-4	5-70	34-9	1-9152	1-02641	1-02506	1-02733		
296	257	Mar.	11	8.0	..	..	..	Surface	25-0	29-1 -1.6 C.	In open pool, ice about 1/2 mile away Reeve's French blue	14.40	56-3 13-5 C.	13-6	5-50 5-60 5-70 5-80 5-90	24-5 34-8 45-0 53-0 62-8	1-5471 .0842 .3980					
														13-5	5-70	44-0	2-0293	1-02576	1-02532	1-02759		
297	258	Mar.	11	12.0	66 22 S.	42 20 W.	..	Surface	25-8	29-2 -1.6 C.	Very little ice about Reeve's French blue	15.0	53-8 12-1 C.	11-2	5-50 5-60 5-70 5-80 5-90	15-0 25-3 35-7 46-0 55-6	1-5471 .0702 .3211					
														11-25	5-70	35-5	1-9384	1-02628	1-02541	1-02768		
298	259	Mar.	11	16.0	..	..	..	Surface	26-0	29-0 -1.7 C.	Amongst ice, some in sample Reeve's French blue	11.35 12/3/03	46-5 8-1 C.	8-5	5-20 5-30 5-40 5-50 5-60 5-70 5-80 5-90	5-7 15-8 26-0 36-2 47-0 57-9 68-0 76-4 86-5	1-5471 .0534 .4215					
														8-6	5-60	46-6	2-0220	1-02525	1-02394	1-02615		
299	260	Mar.	11	20.0	..	..	..	Surface	25-0	28-8 -1.8 C.	Sailing through pancake ice; so much ice in sample that it had to be melted before pouring in bottle Too dark to see	12.0 12/3/03	46-4 8-0 C.	6-7	4-10 4-20 4-30 4-40 4-50 4-60 4-70 4-80 4-90	8-5 19-0 30-0 41-0 52-0 62-8 73-2 83-2 94-0	1-5471 .0427 .4659					
														6-8	4-50	51-5	2-0557	1-01902	1-01762	1-01951		
300	261	Mar.	12	9.10	..	..	..	Surface	20-5	29-0 -1.7 C.	Taken whilst sounding Ice in sample Reeve's French blue (light)	13.50	48-7 9-3 C.	4-7	5-30 5-40 5-50 5-60 5-70	2-0 12-8 23-5 34-0 45-5	1-5471 .0306 .2135					
														5-1	5-70	23-6	1-7912	1-02601	1-02420	1-02647		
300	262	Mar.	12	10.15	..	..	..	2000	19-7	31-48 -0-29 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	14.0	49-0 9-4 C.	5-3	5-70 5-80 5-90 6-00 6-10 6-20 6-30 6-40 6-50	2-5 12-7 23-2 33-0 43-0 54-2 63-6 71-9 80-7	1-5471 .0349 .3872					
														5-6	6-10	42-8	1-9692	1-02830	1-02654	1-02882		



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.										
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)				
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				T'.	t'.	Observed at t'.	Reduced to 15°-56 C.	Reduced to t.
301	268	1903.	Mar.	13	9.10	..	..	..	500	7.4	33.0	0.56 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	10.0 14/3/03	57.2 14.0 C.	11.2	5.45 5.55 5.65 5.75 5.85 5.95 6.05 6.15 6.25	3.0 14.2 25.0 36.0 46.5 57.6 67.5 78.0 88.9	1.5471 .0714 -4188			
301	269	Mar.	13	9.25	..	..	..	1000	7.4	32.17	0.09 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,509	10.40 14/3/03	57.0 13.9 C.	12.0	5.45 5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85	4.8 10.2 16.0 21.0 26.8 31.9 37.0 42.3 47.4	1.5471 .0771 -2388	1.02654	1.02570	1.02795	
301	270	Mar.	13	9.50	..	..	..	300	7.7	33.3	0.72 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	11.40 14/3/03	59.0 15.0 C.	13.1	5.40 5.50 5.60 5.70 5.80 5.90 6.00 6.10 6.20	2.7 13.6 24.2 35.0 45.5 56.0 66.5 76.6 86.8	1.5471 .0817 -4089	1.02643	1.02577	1.02798	
301	271	Mar.	13	10.0	..	..	..	400	7.7	32.9	0.50 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,509	12.10 14/3/03	56.3 13.5 C.	13.0	5.40 5.50 5.60 5.70 5.80 5.90 6.00 6.10	2.9 13.9 24.7 35.6 46.0 56.7 66.0 77.0	1.5471 .0808 -3645	1.02626	1.02574	1.02798	
301	272	Mar.	13	10.10	..	..	..	50	7.7	29.43	-1.42 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	14.10 14/3/03	58.4 14.7 C.	12.1	5.40 5.50 5.60 5.70 5.80 5.90 6.00 6.10 6.20	3.0 13.9 24.6 35.8 46.0 56.2 65.8 77.0 87.2	1.5471 .0768 -4116	1.02625	1.02571	1.02794	
301	273	Mar.	13	10.15	..	..	..	200	7.7	33.14	0.63 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,509	14.50 14/3/03	57.8 14.3 C.	12.2	5.45 5.55 5.65 5.75 5.85 5.95 6.05 6.15 6.25	5.5 16.5 27.2 38.0 48.8 60.0 69.5 80.9 90.8	1.5471 .0780 -4396	1.02628	1.02562	1.02788	
																	5.85	48.6	2.0647	1.02639	1.02575	1.02803

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T.	t.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
		of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.	w.	R.	V.	4 S <sub>v</sub> .	4 S <sub>15°-56</sub> .			4 S <sub>t</sub> .								
301	274	1903.	Mar.	13	12.0	..	..	..	Surface	9-4	29-2 -1-6 C.	Trawl down, steaming slowly through bay ice No ice in sample Reeve's French blue	15.15 14/3/03	57-5 14-2 C.	12-1	5-35 5-45 5-55 5-65 5-75 5-85 5-95 6-05 6-15	2-0 12-6 23-6 33-8 44-1 54-5 64-7 75-2 84-6	1-5471 .0771 -3971			
301	275A	Mar.	13	17.45	..	..	..	2470	10-9	31-25 -0-12 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,509	10.40 15/3/03	58-9 14-9 C.	18-1	5-20 5-30 5-40 5-50 5-60 5-70 5-80 5-90 6-00	1-2 12-0 22-7 33-5 43-8 54-3 64-2 74-8 84-0	1-5471 .1117 -3925				
301	275B	Mar.	13	17.45	..	..	..	2485, bottom	Same as 275A		Buchanan sounding-tube	11.10 15/3/03	58-8 14-9 C.	18-3	5-20 5-25 5-30 5-35 5-40 5-45	0-8 5-9 10-9 16-0 21-3 26-0	1-5471 .1120 -1221				
302	276	Mar.	14	12.0	..	..	..	Surface	20-3	29-0 -1-7 C.	Ice crystals in sample Reeve's French blue	10.0 15/3/03	60-2 15-7 C.	16-4	5-20 5-30 5-40 5-50 5-60 5-70 5-80	3-2 13-6 24-6 35-0 45-5 56-0 66-5	1-5471 .1017 -3103				
303	277	Mar.	14	18.40	..	..	..	Surface	25-1	29-0 -1-7 C.	Stopped for sounding amongst pancake ice No ice in sample	10.20 15/3/03	59-7 15-4 C.	16-1	5-20 5-30 5-40 5-50 5-60 5-70 5-80	0-0 10-2 20-8 31-7 42-0 52-3 62-6	1-5471 .1002 -2845				
303	278	Mar.	14	19.0	..	..	..	2007	24-9	31-33 -0-37 C.	Buchanan-Richard water-bottle Thermometer No. 102,504	12.10 15/3/03	59-4 15-2 C.	15-9	5-30 5-35 5-40 5-45 5-50 5-55 5-60	2-7 8-2 13-5 18-6 24-2 30-4 35-6	1-5471 .0983 -1719				
													15-75	5-45	19-0	1-8173	1-02558	1-02563	1-02788		





Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.										
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)					
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.		T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.			
							of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.		of the Air.	of the Sample.				w.	R.	V.	4 S <sub>t</sub> .	4 S <sub>15°-56</sub> .	4 S <sub>t</sub> .
307	284	1903.	Mar.	15	17.30	..	..	..	1900	29.0	31.31	-0.39 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,509	11.0	60.8	16.8	5.30	6.0				
														16/3/03	16.0 C.		5.35	11.6				
																	5.40	16.8				
																	5.45	21.9				
																	5.50	27.1				
																	5.55	33.5				
																	5.60	38.7	1.5471			
																	5.65	43.8	.1042			
																	5.70	49.0	.2497			
																	16.7	27.6	1.9010	1.02539	1.02565	1.02792
307	285	Mar.	15	17.43	..	..	..	2400	29.4	31.03	-0.54 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	11.30	58.8	16.3	5.30	4.2					
														16/3/03	14.9 C.		5.40	15.0				
																	5.50	25.8				
																	5.60	36.0				
																	5.70	47.6				
																	5.80	57.7				
																	5.90	68.0	1.5471			
																	6.00	78.0	.1003			
																	6.10	87.5	.4215			
																	16.15	46.6	2.0694	1.02554	1.02567	1.02795
308	286	Mar.	15	24.0	..	..	..	Surface	28.3	29.0	-1.7 C.		12.15	60.7	17.4	5.20	8.0					
														16/3/03	15.9 C.		5.30	18.5				
																	5.40	29.0				
																	5.50	40.0				
																	5.60	50.8				
																	5.70	60.5				
																	5.80	69.8	1.5471			
																	5.90	79.8	.1067			
																	6.00	89.8	.4487			
																	17.1	49.6	2.1025	1.02481	1.02515	1.02743
309	287	Mar.	16	8.45	..	..	..	Surface	30.0	29.9	-1.2 C.	Stopped for sounding in open pool Reeve's French blue	11.35	51.0	11.1	5.40	7.6					
														17/3/03	10.6 C.		5.50	18.5				
																	5.60	29.5				
																	5.70	40.0				
																	5.80	50.6				
																	5.90	61.0				
																	6.00	71.8	1.5471			
																	6.10	82.5	.0702			
																	6.20	93.0	.4568			
																	11.25	50.5	2.0741	1.02606	1.02518	1.02745
309	288	Mar.	16	9.45	..	..	..	2050	29.8	31.23	-0.42 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504 Tested by W. S. B.	7.5	65.0	16.6	5.30	5.5					
														18/3/03	18.3 C.		5.35	10.3				
																	5.40	16.0				
																	5.45	21.3				
																	5.50	26.2				
																	5.55	31.5				
																	5.60	35.8	1.5471			
																	5.65	41.2	.1033			
																	5.70	46.5	.2352			
																	16.55	26.0	1.8856	1.02547	1.02570	1.02796
309	289A	Mar.	16	9.50	..	..	..	2533	29.8	31.06	-0.53 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,509 Tested by W. S. B.	7.50-8.15	65.2	16.5	5.30	3.2					
														18/3/03	18.4 C.		5.35	9.0				
																	5.40	15.0				
																	5.45	20.0				
																	5.50	25.5	1.5471			
																	5.55	31.5	.1033			
																	5.60	36.6	.1818			
																	16.55	20.1	1.8322	1.02550	1.02573	1.02798







Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.																
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)										
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				° F.	° C.	w.	R.	V.	(Observed at t°)	Reduced to 15° 56 C.	Reduced to t.			
																										of the Air.	of the Water.	of the Air.
315	306	1903.	Mar.	19	12.0	..	..	..	Surface	26.2	30.0	26.2	30.0	-1.1 C.	In open pool outside edge of pack Reeve's French blue	10.45 24/3/03	55.2 12.9 C.	9.8	5.50 5.60 5.70 5.80 5.90	21.1 32.2 43.2 51.0 65.0	1.5471 .0624 .3399							
315	307	Mar.	19	12.25	..	..	..	100	26.2	31.4	26.2	31.4	-0.33 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,513	11.0 24/3/03	55.7 13.2 C.	9.5	5.50 5.60 5.70 5.80 5.90 6.00 6.10 6.20 6.30	6.5 17.7 28.7 39.9 50.8 61.2 71.9 82.2 89.9	1.9994 1.5471 .0615 .4514	1.02593	1.02485	1.02709					
315	308	Mar.	19	12.30	..	..	..	200	26.2	31.91	26.2	31.91	-0.06 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	11.30 24/3/03	56.1 13.4 C.	9.8	5.50 5.60 5.70 5.80 5.90 6.00 6.10 6.20 6.30	6.1 16.9 27.9 38.8 49.9 60.7 71.2 82.0 92.3	2.0600 1.5471 .0636 .4478	1.02669	1.02537	1.02783					
315	309	Mar.	19	12.35	..	..	..	25	27.0	29.12	27.0	29.12	-1.6 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,513	12.0 24/3/03	57.5 14.2 C.	10.4	5.40 5.50 5.60 5.70 5.80 5.90 6.00 6.10 6.20	6.0 17.1 28.2 39.4 50.8 61.4 71.7 82.0 92.8	2.0585 1.5471 .0661 .4514	1.02670	1.02564	1.02789					
315	310	Mar.	19	12.40	..	..	..	50	27.0	29.86	27.0	29.86	-1.19 C.	Large Buchanan-Richard water-bottle Thermometer No. 102,504	14.15 24/3/03	50.0 10.0 C.	10.0	5.45 5.55 5.65 5.75 5.85 5.95 6.05 6.15 6.25	5.1 16.5 27.1 38.6 49.6 60.1 70.6 79.8 90.2	1.5471 .0640 .4396	1.02611	1.02512	1.02740					
316	311	Mar.	19	16.0	..	..	..	Surface	28.1	29.1	28.1	29.1	-1.6 C.	Reeve's French blue	13.45 24/3/03	45.0 7.2 C.	9.6	5.50 5.60 5.70 5.80 5.90	22.2 33.0 43.9 54.9 65.6	1.5471 .0599 .3971	1.02647	1.02542	1.02770					
319	312	Mar.	20	12.0	..	..	..	Surface	31.1	29.4	31.1	29.4	-1.4 C.	Outside edge of pack Ice spicules in sample Reeve's French blue	14.0 24/3/03	47.3 8.5 C.	9.8	5.70 5.80 5.90	43.9 34.5 45.0 55.7 66.0 76.5	2.0041 1.5471 .0612 .5030	1.02591	1.02475	1.02701					
																		5.70	55.6	2.1113	1.02530	1.02417	1.02639					









Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.										
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydro-meter (grams).	Reading of Hydro-meter.	Volume of immersed Portion of Hydro-meter (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)				
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	d. from which the Sample was collected.	T. of the Air.	t. of the Water.			T'. of the Air.	t'. of the Sample.				R.	V.	Observed at t'.	Reduced to 15°·56 C.	Reduced to t.
325	321	1903.	15	..	Water from hummock in Bay.	..	Scotia	° F. ..	° F. ..	..	9.0 30/11/03	° F. 39·8 4·3 C.	° C. 4·0	0·70 0·80 0·90 1·00 1·10	7·0 17·5 28·5 39·0 49·8	1·5471 -0253 -2569						
337 <sup>b</sup>	322	Nov.	28	12.0	59 43 S.	48 10 W.	..	Surface	34·0	32·7 0·4 C.	Reeve's French blue	10.15 12/12/03	59·0 15·0 C.	4·05 0·90	28·4	1·8293	1·00049	0·99951				
338	323	Nov.	28	18.0	59 23 S.	49 8 W.	..	Surface	34·3	33·0 0·6 C.	Pale green	14.0 12/12/03	59·2 15·1 C.	13·6 5·50 5·60 5·70 5·80 5·90	24·0 35·0 45·5 57·0 67·5	1·5471 -0855 -4143	1·02566	1·02527	1·02747			
339	324	Nov.	29	12.0	58 28 S.	51 56 W.	..	Surface	31·8	33·3 0·7 C.	Pale blue	14.20 12/12/03	59·8 15·4 C.	13·7 5·70	45·8	2·0469	1·02542	1·02510	1·02726			
340	325	Nov.	29	18.0	58 0 S.	53 10 W.	..	Surface	33·6	35·0 1·7 C.	Light blue	14.2 12/12/03	59·8 15·4 C.	14·1 5·50	28·7	1·8947	1·02542	1·02510	1·02726			
341	326	Nov.	30	9.0	57 10 S.	55 35 W.	..	Surface	30·9	33·0 0·6 C.	Reeve's French blue	14.2 12/12/03	59·8 15·4 C.	14·3 5·70	52·7	2·1130	1·02529	1·02501	1·02717			
342	327	Nov.	30	18.0	56 54 S.	56 24 W.	..	Surface	30·8	35·2 1·8 C.	Reeve's French blue	16.30 13/12/03	62·0 16·7 C.	15·4 5·50	34·1	1·9517	1·02510	1·02507	1·02717			
342	327	Nov.	30	18.0	56 54 S.	56 24 W.	..	Surface	30·8	35·2 1·8 C.	Reeve's French blue	18.50 13/12/03	62·2 16·8 C.	15·4 5·50 5·60 5·70 5·80 5·90	35·0 45·0 56·0 67·5 78·0	1·5471 -0964 -5093	1·02507	1·02505	1·02720			
343	328	Dec.	1	10.0	55 5 S.	57 25 W.	..	Surface	29·0	42·2 5·7 C.	Dull blue	16.30 13/12/03	62·0 16·7 C.	15·4 5·50	34·1	1·9517	1·02510	1·02507	1·02717			
343	328	Dec.	1	10.0	55 5 S.	57 25 W.	..	Surface	29·0	42·2 5·7 C.	Dull blue	14.40 14/12/03	62·0 16·7 C.	15·5 5·60 5·70 5·80 5·90	52·7	2·1130	1·02529	1·02501	1·02717			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.4 14/12/03	62·0 16·7 C.	15·4 5·50 5·60 5·70 5·80 5·90	35·0 45·0 56·0 67·5 78·0	1·5471 -0964 -5093	1·02507	1·02505	1·02720			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.0 14/12/03	62·0 16·7 C.	15·5 5·60 5·70 5·80 5·90	56·3	2·1528	1·02507	1·02505	1·02720			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.0 14/12/03	62·0 16·7 C.	15·7 5·70	56·3	2·1544	1·02506	1·02509	1·02717			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.0 14/12/03	62·0 16·7 C.	15·8 5·50 5·60 5·70 5·80 5·90	35·0 45·5 57·0 67·0 77·2	1·5471 -0989 -5093	1·02506	1·01513	1·02683			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.0 14/12/03	62·0 16·7 C.	15·8 5·50 5·60 5·70 5·80 5·90	33·2 45·0 55·2 66·2 77·0	1·5471 -0989 -5002	1·02506	1·01513	1·02683			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.0 14/12/03	62·0 16·7 C.	15·85 5·70	56·3	2·1553	1·02506	1·01513	1·02683			
344	329	Dec.	1	14.0	54 38 S.	57 32 W.	..	Surface	35·6	42·0 5·6 C.	Reeve's French blue	15.0 14/12/03	62·0 16·7 C.	15·85 5·70	55·3	2·1462	1·02510	1·02517	1·02688			

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
							of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.			of the Air.	of the Sample.	w.	R.	V.	4S <sub>v</sub> .	4S <sub>15°-56</sub> .	4S <sub>t</sub> .	
346	330	1903.	Dec.	1	19.0	54 25 S.	57 32 W.	..	Surface	33.8	41.8 5.4 C.	Reeve's French blue	15.20 14/12/03	62.2 16.8 C.	16.0	5.50 5.60 5.70 5.80 5.90	34.0 45.5 56.2 66.5 77.0	1.5471 .7001 .5048			
													16.05	5.70	55.8	2.1520	1.02507	1.02519	1.02692		
348	331	Dec.	2	12.0	52 11 S.	57 55 W.	..	Surface	40.2	44.9 7.2 C.	Pale green	15.40 14/12/03	62.2 16.8 C.	16.2	5.50 5.60 5.70 5.80 5.90	40.0 50.2 61.0 72.0 82.5	1.5471 .1014 .5527				
													16.25	5.70	61.1	2.2012	1.02480	1.02496	1.02645		
350	332	Dec.	12	12.0	44 8 S.	57 30 W.	..	Surface	51.3	49.3 9.6 C.	Green	9.45 15/12/03	61.2 16.2 C.	17.8	5.30 5.40 5.50 5.60 5.70	19.5 30.8 41.8 52.5 63.0	1.5471 .1120 .3754				
													17.95	5.50	41.5	2.0345	1.02464	1.02520	1.02634		
352	333	Dec.	13	12.0	42 30 S.	59 18 W.	..	Surface	53.0	50.0 10.0 C.	Pale greenish blue	10.0 15/12/03	62.0 16.7 C.	17.9	5.30 5.40 5.50 5.60 5.70	26.0 37.2 48.5 59.5 70.0	1.5471 .1123 .4360				
													18.0	5.50	48.2	2.0954	1.02429	1.02485	1.02592		
353	334	Dec.	14	12.0	40 32 S.	58 33 W.	..	Surface	56.0	54.8 12.7 C.	Pale pea green	10.20 15/12/03	62.0 16.7 C.	18.0	5.30 5.40 5.50 5.60 5.70	27.5 38.8 50.0 60.8 72.0	1.5471 .1129 .4505				
													18.1	5.50	49.8	2.1105	1.02421	1.02479	1.02538		
354	335	Dec.	15	12.0	38 24 S.	57 42 W.	..	Surface	62.3	61.8 16.6 C.	Pale sage green	14.0	69.0 20.6 C.	18.4	5.10 5.20 5.30 5.40 5.50 5.60 5.70 5.80 5.90	8.2 19.0 30.5 41.0 52.0 62.5 73.5 84.0 94.2	1.5471 .1161 .4677				
													18.6	5.50	51.7	2.1309	1.02409	1.02480	1.02457		
355	336	Dec.	16	12.0	Off Cape Corientes. Mogotes light 10-20 miles distant.	..	Surface	63.0	62.0 16.7 C.	Pale green	16.30	68.0 20.0 C.	19.0	5.10 5.20 5.30 5.40 5.50 5.60 5.70 5.80 5.90	9.0 20.0 30.8 41.5 52.8 63.5 74.2 85.0 95.2	1.5471 .1198 .4740					
													19.2	5.50	52.4	2.1409	1.02404	1.02490	1.02461		





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		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)					
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	d. from which the Sample was collected.	T. of the Air.	t. of the Water.			T'. of the Air.	t'. of the Sample.				w.	R.	V.	Observed at t'.	Reduced to 15°-56 C.	Reduced to t.
374	352	1901.	13	12.0	59 56 S.	49 30 W.	..	Surface	33.7	36.0 2.2 C.	Reeve's French blue	11.15 17/2/04	55.2 12.9 C.	9.2	5.50 5.60 5.70 5.80 5.90	13.8 24.8 35.5 46.5 57.0	1.5471 .0580 .3211						
375	353	Feb.	22	11.40	Scotia Bay		..	Surface	31.9	33.0 0.6 C.	Dull blue	11.15 23/2/04	59.0 15.0 C.	9.3	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	17.8 23.0 28.0 34.0 40.5 46.0 50.5 56.2 62.0	1.9262 1.5471 .0743 .3600	1.02634	1.02514	1.02720			
<p>NOTE BY D. W. WILTON. 23rd Feb. 1904. Up till now I've always left the thermometer in the jar with the hydrometer whilst testing sample: from now onwards I read the t', then take the thermometer out, and after sample has been tested, put thermometer in again for a second reading of temperature.</p>																							
376	354	Feb.	23	12.0	61 28 S.	41 55 W.	..	Surface	30.0	33.3 0.7 C.	Reeve's French blue	13.50 24/2/04	57.3 14.1 C.	13.4	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	28.0 33.5 39.0 44.0 49.5 55.0 60.5 65.5 71.0	1.9314 1.5471 .0349 .4487	1.02603	1.02528	1.02743			
377	355	Feb.	23	18.0	61 51 S.	41 6 W.	..	Surface	29.5	33.0 0.6 C.	Reeve's French blue	14.15 24/2/04	60.0 15.6 C.	16.2	5.20 5.30 5.40 5.50 5.60 5.70 5.80 5.90 6.00	7.0 17.5 28.2 39.0 49.5 60.0 70.0 80.0 90.5	1.5471 .1014 .4442	1.02547	1.02506	1.02721			
378	356	Feb.	24	6.0	62 30 S.	39 8 W.	..	Surface	29.5	32.1 0.1 C.	Reeve's French blue	14.40 24/2/04	60.0 15.6 C.	16.2	5.20 5.25 5.30 5.40 5.50 5.60 5.70 5.75 5.80	6.0 11.0 16.8 27.0 38.0 49.0 59.5 65.0 69.8	1.5471 .1011 .3437	1.02486	1.02502	1.02715			
380	357	Feb.	24	12.0	62 49 S.	38 12 W.	..	Surface	29.1	31.6 -0.2 C.	Reeve's French blue	13.45 25/2/04	56.2 13.4 C.	16.1	5.20 5.25 5.30 5.40 5.50 5.60 5.70 5.75 5.80	6.0 11.5 17.0 27.2 38.0 48.8 59.8 65.0 70.0	1.5471 .0995 .3447	1.02487	1.02502	1.02715			
<p>Two bergs to windward and about three miles off.</p>																							
														15.95	5.50	38.1	1.9913	1.02488	1.02497	1.02714			

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		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of Sea at Position L.
381	358	1901.	Feb.	24	18.0	63 13 S.	37 33 W.	..	Surface	30.0	31.4	Reeve's French blue	14.5	57.0	15.4	5.30	15.8				
									Two or three bergs in the distance.		-0.3 C.		25/2/01	13.9 C.		5.35	20.8				
																5.40	26.0				
																5.50	36.2				
																5.60	47.0				
																5.70	57.5				
																5.80	68.0	1.5471			
																5.85	73.0	.0955			
																5.90	78.2	.4243			
																15.2					
382	359	Feb.	25	6.0	64 5 S.	36 10 W.	..	Surface	29.3	30.8	Reeve's French blue	14.35	57.2	15.0	5.30	13.5					
									Two or three bergs in the distance.		-0.7 C.		14.0 C.			5.35	19.0				
																5.40	24.2				
																5.50	34.8				
																5.60	45.0				
																5.70	56.0				
																5.80	66.3	1.5471			
																5.85	71.5	.0930			
																5.90	76.5	.4089			
																11.8					
383	360	Feb.	25	12.0	64 29 S.	35 29 W.	..	Surface	29.8	31.0	Reeve's French blue	13.35	51.2	15.5	5.30	16.0					
									A few bergs far away.		-0.6 C.		26/2/01	12.3 C.		5.35	21.0				
																5.40	26.0				
																5.50	36.6				
																5.60	47.0				
																5.70	57.5				
																5.80	68.0	1.5471			
																5.85	73.0	.0977			
																5.90	78.0	.4251			
																15.8					
384	361	Feb.	25	18.0	64 38 S.	35 13 W.	..	Surface	29.8	31.1	Reeve's French blue (light)	14.0	55.8	16.0	5.30	12.8					
									A few bergs far away.		-0.5 C.		26/2/04	13.2 C.		5.35	18.0				
																5.40	23.0				
																5.50	33.5				
																5.60	44.0				
																5.70	54.2				
																5.80	65.5	1.5471			
																5.85	70.5	.0989			
																5.90	76.0	.3998			
																15.7					
385	362	Feb.	26	6.0	65 35 S.	33 50 W.	..	Surface	28.8	30.5	Reeve's French blue	14.20	57.0	14.6	5.30	8.5					
									Two icebergs.		-0.8 C.		13.9 C.			5.35	13.5				
																5.40	18.0				
																5.50	28.2				
																5.60	38.5				
																5.70	49.0				
																5.80	60.0	1.5471			
																5.85	65.0	.0911			
																5.90	70.2	.3528			
																14.6					
387	363	Feb.	26	12.0	65 59 S.	33 6 W.	2625	Surface	28.8	30.2	Reeve's French blue (light)	14.45	57.2	13.9	5.30	12.0					
									Ice about 1 mile off; loose pieces quite near ship.		-1.0 C.		14.0 C.			5.35	17.2				
																5.40	22.6				
																5.50	33.8				
																5.60	44.5				
																5.70	55.0				
																5.80	65.5	1.5471			
																5.85	69.0	.0867			
																5.90	74.8	.3962			
																13.9					
																13.9					
																5.60	43.8	2.0300	1.02521	1.02486	1.02708













Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.								Data Relating to the Determination of the Density of the Sample.															
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C. = 1.)							
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T.	t.				w.	R.	V.	Observed at t.	Reduced to 15°-56 C.	Reduced to t.		
																								of the Air.	of the Water.
406	391 kept	1904.	Mar.	3	11.45	72 18 S.	17 59½ W.	1131	1000	25.2	32.1 0.2 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,504	16.10	58.0 14.4 C.	12.7	5.50 5.55 5.60 5.65 5.70 5.75 5.80 5.85 5.90	15.0 19.9 25.5 30.5 36.0 41.0 46.0 52.0 57.0	1.5471 -0802 -3247							
406	392 kept	Mar.	3	11.45	72 18 S.	17 59½ W.	1131	750	25.2	32.50 0.3 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,512	14.20 4/3/04	53.8 12.1 C.	13.2	5.40 5.45 5.50 5.60 5.70 5.80 5.90 6.00	5.0 10.0 15.0 26.0 36.6 48.0 58.5 68.5	1.5471 -0814 -3329	1.02620	1.02563	1.02785					
406	393 kept	Mar.	3	12.30	72 18 S.	17 59½ W.	1131	500	26.2	32.92 0.5 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,512	15.0 4/3/04	52.0 11.1 C.	12.6	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	3.8 9.0 14.2 25.0 35.5 46.5 56.6 62.2 67.2	1.5471 -0783 -3220	1.02615	1.02562	1.02783					
406	394	Mar.	3	12.30	72 18 S.	17 59½ W.	1131	600	26.2	29.7 -1.3 C. Read on bridge	Thermometer No. 102,504	13.45 4/3/04	54.0 12.2 C.	14.3	5.40 5.45 5.50 5.60 5.70 5.80 5.75 5.65 5.55	12.0 17.0 23.0 33.0 43.5 54.2 49.0 38.0 27.5	1.5471 -0886 -2985	1.02623	1.02560	1.02780					
406	395 kept	Mar.	3	12.55	72 18 S.	17 59½ W.	1131	300	26.2	31.08 -0.5 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,512	15.35 4/3/04	53.0 11.7 C.	17.0	5.50 5.30 5.35 5.40 5.60 5.70 5.80 5.75 5.65	31.8 10.0 15.0 20.3 42.0 52.2 62.5 57.5 47.0	1.5471 -1048 -3401	1.02575	1.02546	1.02771					
406	396	Mar.	3	12.55	72 18 S.	17 59½ W.	1131	400	26.2	29.2 -1.6 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,504	16.5 4/3/04	59.0 15.0 C.	17.0	5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.75	12.0 17.2 22.5 32.5 44.0 54.5 64.6 69.8 60.0	1.5471 -1061 -3790	1.02521	1.02549	1.02769					
													17.0	5.5833	41.9	2.0322	1.02511	1.02544	1.02767						



Number of Station.		Number of Sample.		Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
				Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)			
				Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																							of the Air.
of Sea at Position L.	from which the Sample was collected.	° F.	° F.	w.	R.	V.																	
410	403 kept	1904.	Mar.	6	4.40	73 30 S.	21 28 W.	159	154	23.0	28.90	11/3/04	54.8	9.3	5.40	6.6							
											-1.7 C.		12.7 C.	5.45	12.0								
											Read on bridge			5.50	17.6								
														5.60	28.2								
														5.70	30.2								
														5.80	50.0								
														5.90	60.6	1.5471							
														5.95	66.0	.0596							
														6.00	71.4	.3537							
														9.8									
411A	404	Mar.	14	6.0	73 25 S.	23 45 W.	..	Surface	18.5	29.0	15/3/04	58.0	13.4	5.30	9.5	1.9604	1.02615	1.02498	1.02727				
										-1.7 C.		14.4 C.	5.35	14.6									
													5.40	20.0									
													5.50	31.3									
													5.60	42.0									
													5.70	52.7									
													5.80	63.3	1.5471								
													5.85	69.0	.0849								
													5.90	73.5	.3781								
													13.8										
412	405 kept	Mar.	14	12.0	73 11 S.	23 53 W.	..	Surface	25.0	28.9	15/3/04	60.2	14.4	5.00	6.5	2.0101	1.02532	1.02491	1.02714				
										-1.7 C.		15.7 C.	5.05	11.5									
													5.10	16.8									
													5.20	27.0									
													5.30	37.5									
													5.40	48.0									
													5.50	58.5	1.5471								
													5.55	63.0	.0892								
													5.60	68.0	.3383								
													14.2										
412	406 kept	Mar.	14	15.0	73 9 S.	23 53 W.	..	Surface	20.0	32.8	15/3/04	58.2	13.0	5.30	37.4	1.9746	1.02387	1.02361	1.02576				
										0.4 C.		14.6 C.	5.40	6.0									
										Read on bridge			5.45	11.0									
													5.50	16.5									
													5.60	27.2									
													5.70	37.5									
													5.80	48.3									
													5.90	59.0	1.5471								
													6.00	69.8	.0814								
													13.1	80.5	.3573								
													13.05										
412	407	Mar.	14	15.0	73 9 S.	23 53 W.	..	Surface	20.0	31.6	15/3/04	57.5	12.5	5.40	4.5	1.9858	1.02610	1.02557	1.02778				
										-0.2 C.		14.2 C.	5.45	10.0									
										Read on bridge			5.50	15.0									
													5.60	26.0									
													5.70	37.0									
													5.80	47.2									
													5.90	58.0	1.5471								
													5.95	64.0	.0786								
													6.00	69.0	.3320								
													12.7										
													12.6										
413	408	Mar.	15	6.0	72 2 S.	23 40 W.	..	Surface	20.0	29.3	11.40	58.0	11.6	5.40	8.6	1.9577	1.02617	1.02555	1.02779				
										-1.5 C.		14.4 C.	5.45	14.0									
													5.50	19.0									
													5.60	29.8									
													5.70	40.2									
													5.80	51.0									
													5.90	61.5	1.5471								
													5.95	66.0	.0736								
													6.00	71.5	.3636								
													11.8										
													5.70	40.2	1.9843	1.02602	1.02525	1.02753					

\* Weights did not come off when bottom was reached, and, on hauling up, lost about 1800 fathoms of wire, two Buchanan-Richard water-bottles, and Buchanan's sounding-tube.



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.																	
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)											
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				T'.	t'.	w.	R.	V.	Observed at t'.	Reduced to 15°-56 C.	Reduced to t.				
																										of Sea at Position L.	from which the Sample was collected.	of the Air.	of the Water.
416	415 kept	1904.	Mar.	17	8.15	71 22 S.	18 15 W.	2370	200	19-8	33-0	0-7 C.	Buchanan-Richard water-bottle Thermometer No. 102,505	10.0	53-8 12-1 C.	9-7	5-50 5-55 5-60 5-70 5-80 5-90 6-00 6-05 6-10	7-0 12-0 17-0 28-0 38-8 49-5 60-2 65-2 70-5	1-5471 -0608 -3501										
416	416 kept	Mar.	17	8.15	71 22 S.	18 15 W.	2370	300	19-8	33-0	0-6 C.	Buchanan-Richard water-bottle Thermometer No. 102,502	10.25	50-2 10-1 C.	9-7	5-50 5-60 5-55 5-70 5-80 5-90 6-00 6-05 6-10	7-0 17-5 12-0 27-5 38-0 49-0 60-0 65-0 70-0	1-5471 -0699 -3474	1-02672	1-02558	1-02779								
416	417 kept	Mar.	17	7.50	71 22 S.	18 15 W.	2370	1370	19-8	32-1	0-1 C.	Buchanan-Richard water-bottle Thermometer No. 102,505	11.0	47-0 8-3 C.	9-5	5-50 5-55 5-60 5-70 5-80 5-90 6-00 6-05 6-10	5-5 10-5 16-0 26-8 37-2 47-0 57-5 62-6 68-0	1-5471 -0587 -3329	1-02674	1-02557	1-02778								
416	418 kept	Mar.	17	8.0	71 22 S.	18 15 W.	2370	2360	19-8	31-5	0-3 C.	Buchanan-Richard water-bottle Thermometer No. 102,502	11.30	51-2 10-7 C.	10-0	5-50 5-55 5-60 5-70 5-80 5-90 6-00 6-05 6-10	8-5 13-5 19-0 28-8 40-0 50-0 60-8 66-0 71-0	1-5471 -0624 -3591	1-02682	1-02562	1-02786								
417	419	Mar.	18	8.0	71 22 S.	16 34 W.	..	Surface	28-5	29-9	-1-2 C.	Reeve's French blue	10.0	51-0 10-6 C.	10-6	5-40 5-45 5-50 5-60 5-70 5-80 5-90 5-95 6-00	4-8 9-8 14-7 27-0 37-2 48-0 58-5 63-8 69-0	1-5471 -0668 -3347	1-02666	1-02556	1-02782								
417	420 kept	Mar.	18	8.0	71 22 S.	16 34 W.	1410	100	28-5	28-8	-1-3 C.	Buchanan-Richard water-bottle Thermometer No. 102,505	10.30	52-0 11-1 C.	10-7	5-50 5-55 5-60 5-70 5-80 5-90 6-00 6-05 6-10	13-2 18-5 22-8 33-2 44-5 55-3 65-5 70-7 76-0	1-5471 -0661 -4016	1-02622	1-02525	1-02753								
														10-6	5-80	44-4	3-0118	1-02640	1-02541	1-02770									







		Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.													
Number of Station.	Number of Sample.	Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C. = 1.)							
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.					
		Month.	Day.	Hour.	Lat.	Long.	of Sea at Position L.	from which the Sample was collected.	° F.	° F.			of the Air.	of the Sample.	w.	R.	V.	4 S t.	4 S 15°-56.	4 S t.					
421	432	1904.	Mar.	22	1.57	68 32 S.	10 52 W.	2487	50	32.2	30.4 -0.9 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,502	14.50	54.0 12.2 C.	12.6	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	8.7 13.9 19.2 29.5 40.0 50.6 61.2 66.5 71.5	1.5471 .0786 .3627							
421	433 kept	Mar.	22	18.0	68 32 S.	10 52 W.	2487	100	32.2	33.5 0.8 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,505	15.20	55.0 12.8 C.	12.0	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	2.1 7.2 12.5 23.0 33.2 43.8 54.3 59.8 65.0	1.5471 .0746 .3021	1.02600	1.02540	1.02761					
421	434	Mar.	22	11.20	68 32 S.	10 52 W.	2487	200	32.2	33.5 0.8 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,502	15.45	50.0 10.0 C.	11.7	5.50 5.55 5.60 5.70 5.80 5.90 6.00 6.05 6.10	11.2 16.2 21.0 31.2 42.0 52.6 63.0 68.0 73.5	1.5471 .0718 .3808	1.02636	1.02561	1.02779					
421	435 kept	Mar.	22	14.40	68 32 S.	10 52 W.	2487	300	32.2	33.2 0.7 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,505	16.10	52.0 11.1 C.	15.0	5.50 5.40 5.45 5.60 5.70 5.80 5.90 5.95 6.00	21.0 9.8 15.0 31.0 41.5 51.8 62.0 67.2 72.0	1.5471 .0914 .3736	1.02648	1.02566	1.02784					
421	435	Mar.	22	14.40	68 32 S.	10 52 W.	2487	300	32.2	33.2 0.7 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,505	Tested again 9.30 23/3/04	50.0 10.0 C.	9.8	5.50 5.55 5.60 5.70 5.80 5.90 6.00 6.05 6.10	7.6 12.7 17.4 28.0 38.5 49.2 60.0 65.3 70.0	1.5471 .0615 .3500	1.02586	1.02567	1.02783					
421	436 kept	Mar.	22	14.45	68 32 S.	10 52 W.	2487	400	32.2	33.1 0.6 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,502	10.0 23/3/04	51.0 10.6 C.	10.4	5.50 5.55 5.60 5.70 5.80 5.90 6.00 6.05 6.10	8.2 13.2 18.5 29.0 39.9 50.5 61.2 66.5 71.8	1.5471 .0649 .3609	1.02671	1.02558	1.02779					
													10.4	5.80	39.9	1.9729	1.02663	1.02560	1.02781						



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.									
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C.=1.)			
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15°-56 C.	Reduced to t.	
																					of Sea at Position L.
423	443 kept	1904.	Mar.	24	11.10	68 41 S.	12 36 W.	Cir. 2500	1000	30.8	31.82; -0.1 C. Read on bridge	Nansen-Petters-son water-bottle Thermometer No. 18,725	16.5	58.0 14.4 C.	13.6	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	8.0 13.5 19.0 29.2 39.8 50.5 60.8 66.0 71.5	1.5471 .0852 .3600			
423	444 kept	Mar.	24	18.0	68 41 S.	13 36 W.	Cir. 2500	700	30.0	32.40 0.2 C. Read on bridge	Nansen-Petters-son water-bottle Thermometer No. 18,725	13.50 26/3/04	59.5 15.3 C.	12.9	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	5.0 10.0 15.0 26.5 37.2 47.2 58.0 63.0 68.0	1.5471 .0802 .3320	1.02597	1.02557	1.02780	
423	445	Mar.	24	18.25	68 41 S.	12 36 W.	Cir. 2500	800	30.0	32.4 0.2 C. Read on bridge	Nansen-Petters-son water-bottle Thermometer No. 18,725	14.15 26/3/04	54.0 12.2 C.	12.3	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	3.0 8.0 13.0 24.5 36.0 46.0 57.5 62.5 68.0	1.5471 .0774 .3202	1.02616	1.02559	1.02781	
423	446	Mar.	24	17.10	68 41 S.	12 36 W.	Cir. 2500	900	30.0	32.1 0.1 C. Read on bridge	Nansen-Petters-son water-bottle Thermometer No. 18,725	14.40 26/3/04	54.0 12.2 C.	12.6	5.50 5.40 5.45 5.60 5.70 5.80 5.90 5.95 6.00	16.0 4.5 9.0 26.0 36.0 46.2 57.2 62.0 67.0	1.5471 .0733 .3257	1.02624	1.02558	1.02780	
424	447	Mar.	25	8.0	68 26 S. (noon position) No ice.	11 11 W.	..	Surface	30.2	31.3 -0.4 C.	Antwerp blue	14.15	45.0 7.2 C.	11.7	5.70 5.35 5.40 5.45 5.50 5.55 5.60 5.65 5.70 5.75	36.0 4.0 9.0 14.5 19.8 25.0 30.8 36.0 41.2 45.5	1.5471 .0714 .2271	1.02621	1.02558	1.02780	
426	448 kept	Mar.	26	6.0	67 48 S. Three distant bergs.	11 52 W.	..	Surface	30.3	30.9 -0.6 C.	Blue	9.30 30/3/04	51.3 10.7 C.	8.8	5.55 5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	25.1 6.0 11.0 16.7 27.0 38.0 48.5 59.0 64.5 69.5	1.8456 1.5471 .0565 .3419	1.02597	1.02514	1.02739	
																		1.02624	1.02499	1.02724	





Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.										
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydro-meter (grams).	Reading of Hydro-meter.	Volume of immersed Portion of Hydro-meter (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)				
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15° 56 C.	Reduced to t.		
																					of the Air.	of the Water.
432A	461	1904.	Mar.	30	16.50	61 21 S.	13 2 W.	2764	200	30.0	32.33		0.2 C.	Nansen-Petters-son water-bottle Thermometer No. 18,725				13.30 8/4/04	50.2 10.1 C.	12.8	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	5.0 9.8 14.8 25.0 35.8 46.0 56.5 61.8 67.0
432A	462	Mar.	30	16.30	61 21 S.	13 2 W.	2764	300	30.0	32.28	0.2 C.	Nansen-Petters-son water-bottle Thermometer No. 18,725	14.0 8/4/04	50.2 10.1 C.	11.7	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	2.5 7.8 12.3 23.0 33.0 43.6 51.0 59.0 64.8	1.5471 .0727 .3012	1.02622	1.02561	1.02733	
432A	463	Mar.	30	17.0	61 21 S.	13 2 W.	2764	400	30.0	32.21	0.1 C.	Nansen-Petters-son water-bottle Thermometer No. 18,725	14.45 8/4/04	49.2 9.6 C.	10.6	5.50 5.55 5.60 5.70 5.80 5.90 6.00 6.05 6.10	9.8 15.3 20.0 30.3 40.5 50.8 61.5 68.3 72.0	1.5471 .0658 .3682	1.02637	1.02557	1.02779	
433	464	Mar.	31	6.0	60 50 S.	12 30 W.	..	Surface	30.2	31.1	-0.5 C.	Reeve's French blue at 7.0	10.15	55.5 13.1 C.	9.4	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	5.0 10.0 15.3 26.0 36.8 47.5 58.5 63.5 69.0	1.5471 .0605 .3329	1.02659	1.02559	1.02733	
434	465	Mar.	31	12.0	60 37 S.	12 16 W.	..	Surface	29.5	31.2	-0.4 C.	Reeve's French blue	9.50 4/4/04	50.6 15.3 C.	14.6	5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	7.0 12.2 17.5 28.0 39.5 50.2 61.0 66.0 71.5	1.5471 .0914 .3546	1.02626	1.02512	1.02737	
436	466	Apr.	2	18.0	58 10 S.	11 50 W.	..	Surface	31.0	33.0	0.6 C.	Reeve's French blue	16.30 3/4/04	61.5 16.4 C.	18.1	5.50 5.60 5.65 5.70 5.20 5.30 5.40 5.10 5.15	51.0 61.5 66.0 70.5 18.0 28.0 38.0 8.0 10.0	1.5471 .1123 .3528	1.02542	1.02522	1.02744	
														18.0	5.40	39.0	2.0122	1.02121	1.02477	1.02690		





Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.									Data Relating to the Determination of the Density of the Sample.												
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C. = 1.)					
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T'.	t'.				Observed at t'.	Reduced to 15° 56 C.	Reduced to t.			
																					of Sea at Position L.	from which the Sample was collected.	of the Air.
448	473	1904.	Apr.	10	12.0	49 25 S.	9 21 W.	..	Surface	38.5	39.0	39.0	3.9 C.	Cobalt	14.0 16/4/04	51.9 11.1 C.	9.7	5.40 5.45 5.50 5.70 5.80 5.90 5.95 6.00	11.0 16.0 21.0 32.5 43.7 54.2 64.2 69.5 74.5	1.5471 .0613 -3890			
449	474	Apr.	11	12.0	48 53 S.	9 25 W.	..	Surface	38.7	39.4	39.4	4.1 C.	Dark blue	14.30 16/4/04	53.0 11.7 C.	9.9 10.0	5.70 5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	43.0 11.3 17.0 22.0 33.5 44.5 55.0 66.0 71.0 76.0	1.9979 1.5471 .0640 -3980	1.02594	1.02484	1.02675	
450	475	Apr.	12	13.0	48 0 S.	9 50 W. D.R.	..	Surface	38.8	40.0	40.0	4.4 C.	Reeve's French blue (light)	15.0 16/4/04	54.0 12.2 C.	10.3	5.70 5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	44.0 14.0 19.0 24.0 35.0 45.5 56.3 66.5 72.0 77.5	2.0091 1.5471 .0661 -4116	1.02588	1.02484	1.02673	
451	476	Apr.	13	13.0	48 6 S.	10 5 W.	..	Surface	35.8	40.8	40.8	4.9 C.	Reeve's French blue	9.15 20/4/04	51.2 10.7 C.	10.6	5.70 5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	45.5 1.0 6.0 11.0 22.0 33.0 44.0 55.0 60.0 65.2	2.0248 1.5471 .0665 -2985	1.02579	1.02481	1.02667	
453	477	Apr.	14	13.0	46 35 S.	10 10 W.	..	Surface	39.2	42.9	42.9	6.1 C.	Cobalt blue (light)	9.55 20/4/04	52.2 11.2 C.	10.6 10.7	5.70 5.30 5.35 5.40 5.45 5.50 5.55 5.60 5.65 5.70	33.0 0.5 5.5 10.5 16.0 21.0 26.0 32.0 38.0 42.5	1.9121 1.5471 .0677 -1927	1.02587	1.02490	1.02670	
454	478	Apr.	15	13.0	45 54 S.	10 4 W.	..	Surface	48.9	44.2	44.2	6.8 C.	Cobalt blue	10.20 20/4/04	52.9 11.6 C.	10.8 11.0 11.2	5.50 5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	21.3 10.5 16.0 21.8 32.5 43.0 54.0 65.0 70.0 75.0	1.8075 1.5471 .0686 -3899	1.02591	1.02497	1.02663	
															11.0	5.70	43.1	2.0056	1.02590	1.02499	1.02656		





Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.															
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.).	Density of Sample. (Density of Distilled Water at 4° C. = 1.)									
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				° F.	° C.	w.	R.	V.	Observed at t'.	Reduced to 15°-56 C.	Reduced to t.		
																										of Sea at Position L.	from which the Sample was collected.
470	491	1904.	Apr.	30	12.0	39 27 S.	5 50 E.	2900	Surface	54.2	55.5		13.1 C.	Light cobalt	15.30	58.5 14.7 C.	13.8	5.40 5.45 5.50 5.60 5.70 5.80 5.90 5.95 6.00	12.5 17.5 23.2 33.8 45.0 55.5 66.0 71.0 76.0	1.5471 .0367 .4026							
471	492	May	1	12.0	39 25 S.	10 25 E.	2625	Surface	58.0	55.5	13.1 C.	Reeve's French blue (dark)	15.0 4/5/04	58.2 14.6 C.	14.0	5.70 5.20 5.25 5.30 5.40 5.60 5.70 5.75 5.80	44.5 47.0 16.0 21.0 26.0 37.0 58.0 69.5 75.0 80.0	2.0364 1.5471 .1242 .4315	1.02572	1.02537	1.02588						
473	493	May	2	12.0	38 6 S.	14 32 E.	..	Surface	58.0	64.9	18.3 C.	Antwerp blue	15.20 4/5/04	69.0 20.6 C.	20.1	5.20 5.25 5.30 5.40 5.50 5.60 5.70 5.75 5.80	1.0 6.5 11.5 22.0 33.5 44.5 55.0 60.0 65.5	1.5471 .1260 .3012	1.02425	1.02529	1.02580						
474	494	May	3	12.0	35 37 S.	15 3 E.	..	Surface	62.4	64.7	18.2 C.	Reeve's French blue and Antwerp.	15.45 4/5/04	69.3 20.7 C.	20.0	5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	33.3 11.3 16.8 22.5 33.0 44.0 55.0 65.5 70.5 76.0	1.5471 .1257 .3962	1.02497	1.02610	1.02546						
475	495	May	4	12.0	34 58 S.	17 0 E.	..	Surface	64.1	64.7	18.2 C.	Light turquoise	16.0	68.8 20.4 C.	20.0	5.60 5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	43.8 10.5 16.0 21.8 32.0 43.0 54.2 65.0 70.0 75.0	1.5471 .1254 .3899	1.02499	1.02611	1.02549						
477	496	May	5	12.0	Off Cape Peninsula.	..	Surface	60.1	61.3	16.3 C.	Dull dark green	16.0	62.3 16.8 C.	17.1	5.60 5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	43.1 2.8 8.0 13.5 24.6 35.3 46.5 56.8 62.0 67.7	2.0624 1.5471 .1070 .3184	1.02503	1.02614	1.02552							
														17.15	5.60	35.2	1.9725	1.02553	1.02590	1.02572							





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		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)						
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T.	t.				R.	V.	Observed at t.	Reduced to 15°-56 C.	Reduced to t.		
																							of the Air.	of the Water.
502	508	1904.	June	4	12.0	12 40 S.	9 6 W.	..	Surface	73-0	73-3	22-9 C.	Reeve's French blue	14.0	6/6/04	80-2	26-8 C.	26-0	5-10 5-15 5-20 5-30 5-40 5-50 5-60 5-65 5-70	1-0 7-0 12-0 23-0 34-5 45-0 56-0 62-0 67-0	1-5471 -1629 -3094			
503	509	June	5	12.0	10 46 S.	11 12 W.	..	Surface	75-0	77-1	25-1 C.	Light cobalt	14.30	6/6/04	80-2	26-8 C.	26-2	26-1	5-40 5-10 5-15 5-20 5-30 5-40 5-50 5-60 5-65 5-70	34-2 7-5 12-5 18-0 29-0 40-0 50-0 62-0 67-5 73-0	2-0194 -1629 -3609	1-02417	1-02701	1-02510
505	510	June	6	12.0	8 51 S.	13 2 W.	..	Surface	77-5	77-9	25-5 C.	Cobalt	14.45		80-4	26-9 C.	26-1	26-1	5-40 5-10 5-15 5-20 5-30 5-40 5-50 5-60 5-65 5-70	39-9 10-5 15-8 20-5 31-0 41-5 53-0 63-8 69-0 74-8	2-0709 -1635 -3817	1-02388	1-02671	1-02418
508	511	June	10	12.0	7 36 S.	14 33 W.	..	Surface	77-9	78-2	25-7 C.	Light Reeve's French blue	6.40	12/6/04	76-8	24-9 C.	25-3	26-2	5-10 5-15 5-20 5-30 5-40 5-50 5-60 5-65 5-70	8-0 13-0 19-0 29-8 40-6 52-0 63-0 68-0 73-0	2-0923 -1579 -3682	1-02376	1-02662	1-02397
509	512	June	11	12.0	4 47 S.	15 47 W.	..	Surface	78-4	78-1	25-6 C.	Dull cobalt	6.50	12/6/04	77-4	25-2 C.	25-3	25-3	5-40 5-10 5-00 5-05 5-20 5-30 5-40 5-50 5-55 5-60	40-7 20-0 9-5 14-0 30-0 40-5 51-2 62-8 68-0 73-0	2-0732 -1582 -3709	1-02387	1-02646	1-02375
510	513	June	12	12.0	2 46 S.	17 24 W.	..	Surface	77-5	76-5	24-7 C.	Turquoise and cobalt	12.5		79-0	26-1 C.	25-35	25-25	5-30 5-10 5-15 5-20 5-30 5-40 5-50 5-60 5-65 5-70	41-0 13-0 19-0 24-0 35-5 46-5 57-0 67-8 73-0 78-0	2-0762 -1582 -4161	1-02330	1-02589	1-02323
																		25-35	5-40	46-0	2-1214	1-02360	1-02620	1-02378





Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.													
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)							
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				T.	t.	w.	R.	V.	Observed at t°.	Reduced to 15°-56 C.	Reduced to t.
513	519 <sub>A</sub>	1904.	June	14	9.6	1 56 N.	19 21 W.	Cir. 2700	400	78.2	41.5 5.3 C. Read on bridge	Buchanan-Richard water-bottle Thermometer No. 102,506	14.45	79.2 26.2 C.	26.4	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	19.5 25.0 30.5 41.0 52.0 63.0 73.8 78.5 83.9	1.5471 .1647 .4695							
513	520	June	14	9.30	1 56 N.	19 21 W.	Cir. 2700	300	78.2	44.5 6.9 C.	Buchanan-Richard water-bottle Thermometer No. 102,505	14.15	79.0 26.1 C.	27.0	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	23.8 29.2 34.0 45.0 55.5 65.5 76.4 81.5 85.8	1.5471 .1682 .4993	1-02271	1-02562	1-02737					
513	521	June	14	9.26	1 56 N.	19 21 W.	Cir. 2700	200	78.2	48.8 9.3 C.	Buchanan-Richard water-bottle Thermometer No. 102,506	14.0	79.2 26.2 C.	26.1	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	15.5 21.0 26.5 37.0 47.6 58.2 68.5 73.5 78.0	1.5471 .1629 .4279	1-02252	1-02560	1-02715					
513	522	June	14	10.0	1 56 N.	19 21 W.	Cir. 2700	100	78.2	55.0 12.8 C.	Buchanan-Richard water-bottle Thermometer No. 102,505	13.40	79.9 26.6 C.	26.1	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	11.2 16.8 22.0 33.0 44.0 54.9 65.7 70.8 76.0	1.5471 .1632 .3962	1-02296	1-02578	1-02699					
513	523	June	14	9.41	1 56 N.	19 21 W.	Cir. 2700	50	78.2	57.5 14.2 C.	Buchanan-Richard water-bottle Thermometer No. 102,506	10.45	79.6 26.4 C.	23.4	5.10 5.15 5.20 5.30 5.40 5.50 5.60 5.65 5.70	5.5 10.9 16.3 27.0 38.0 49.5 60.5 65.8 71.0	1.5471 .1479 .3465	1-02313	1-02597	1-02655					
513	523	June	14	9.41	1 56 N.	19 21 W.	Cir. 2700	50	78.2	57.5 14.2 C.	Buchanan-Richard water-bottle Thermometer No. 102,506	Tested again, 13.5	79.0 26.1 C.	25.8	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	6.5 11.5 17.0 27.5 38.6 49.2 60.5 66.0 71.0	1.5471 .1613 .3492	1-02405	1-02617	1-02647					
														25.85	5.30	38.6	2.0576	1-02311	1-02616	1-02646					

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		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)								
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	d. from which the Sample was collected.	T.	t.			T'. of the Air.	t'. of the Sample.				w.	R.	V.	Observed at t'. 4 S <sub>t</sub> .	Reduced to 15°-56 C. 4 S <sub>15°-56</sub> .	Reduced to t'. 4 S <sub>t</sub> .			
									° F.	° F.																
513	524	1904.	June	14	9.55	1 56 N.	19 21 W.	Cr. 2700	20	78.2	80.5 26.9 C.		Buchanan-Richard water-bottle Thermometer No. 102,506	10.25	78.9 26.1 C.	26.8	5.00 5.05 5.10 5.15 5.25 5.30 5.35 5.40 5.45	16.2 21.8 26.5 32.0 42.5 47.4 53.2 58.2 63.8	1.5471 .1671 .3636							
514	525	June	14	12.0	2 9 N.	19 26 W.	..	Surface	79.0	80.8 27.1 C.	Reeve's French blue	13.20	79.3 26.3 C.	26.75	5.2277	40.2	2.0778	1.02290	1.02593	1.02286						
515	526	June	14	18.0	2 32 N.	19 32 W.	..	Surface	78.9	80.9 27.2 C.	Reeve's French blue	6.30 15/6/04	79.2 26.2 C.	26.7	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	17.5 22.6 27.7 38.4 49.0 60.0 71.0 76.0 81.0	1.5471 .1665 .4451	1.02285	1.02585	1.02272						
516	527	June	14	24.0	3 48 N.	19 36 W.	..	Surface	79.0	80.9 27.2 C.	Too dark	6.50 15/6/04	79.2 26.2 C.	26.675	5.30	49.2	2.1587	1.02285	1.02585	1.02272						
517	528	June	15	6.0	3 30 N.	19 51 W.	2526	Surface	78.8	80.2 26.8 C.	Reeve's French blue	7.20	80.0 26.7 C.	26.8	5.30	50.1	2.1675	1.02279	1.02583	1.02267						
517	529	June	15	6.40	3 30 N.	19 51 W.	2526	500	78.8	40.0 4.4 C. Read on bridge	Nansen-Pettersson water-bottle Thermometer No. 18,727	14.50	80.0 26.7 C.	26.8	5.30	50.1	2.1675	1.02279	1.02583	1.02267						
517	528	June	15	6.0	3 30 N.	19 51 W.	2526	Surface	78.8	80.2 26.8 C.	Reeve's French blue	7.20	80.0 26.7 C.	26.75	5.30	49.7	2.1637	1.02281	1.02583	1.02268						
517	529	June	15	6.40	3 30 N.	19 51 W.	2526	500	78.8	40.0 4.4 C. Read on bridge	Nansen-Pettersson water-bottle Thermometer No. 18,727	14.50	80.0 26.7 C.	26.6	5.30	48.3	2.1500	1.02289	1.02587	1.02283						
517	529	June	15	6.40	3 30 N.	19 51 W.	2526	500	78.8	40.0 4.4 C. Read on bridge	Nansen-Pettersson water-bottle Thermometer No. 18,727	14.50	78.8 26.0 C.	25.7	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	18.0 23.0 29.0 39.8 51.0 61.0 72.0 77.0 81.8	1.5471 .1607 .4550									
														25.75	5.30	50.3	2.1628	1.02282	1.02553	1.02736						

Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.																
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)										
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				T'.	t'.	w.	R.	V.	Observed at t'.	Reduced to 15° 56 C.	Reduced to t.			
																										of the Air.	of the Water.	of the Air.
517	530	1904.	June	15	7.30	3 30 N.	19 51 W.	2520	400	77.0	40.92 5.0 C. Read on bridge		Nansen-Petters- son water- bottle Thermometer No. 18,727	14.35	79.7 26.5 C.	25.2	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.60	16.0 21.8 26.5 37.3 48.0 58.2 69.8 80.0	1.5471 .1579 -4351									
517	531	June	15	8.5	3 30 N.	19 51 W.	2526	300	77.0	43.0 6.1 C. Read on bridge	Nansen-Petters- son water- bottle Thermometer No. 18,727	14.15	79.1 26.2 C.	25.1	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	14.0 19.5 25.5 36.5 47.0 57.7 68.5 73.7 79.0	1.5471 .1572 -4234	1-02294	1-02551	1-02729								
517	532	June	15	7.25	3 30 N.	19 51 W.	2526	200	77.0	50.2 10.1 C. Read on bridge	Buchanan-Rich- ard water- bottle Thermometer No. 102,505	14.55	78.8 26.0 C.	25.6	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	13.2 18.5 23.5 33.5 44.0 54.5 65.0 71.0 74.7	1.5471 .1604 -3998	1-02301	1-02555	1-02720								
517	533	June	15	8.0	3 30 N.	19 51 W.	2526	100	77.0	56.9 13.8 C. Read on bridge	Buchanan-Rich- ard water- bottle Thermometer No. 102,506	13.40	78.7 25.9 C.	25.8	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	8.0 13.2 18.5 28.8 39.5 50.0 61.5 66.5 71.5	1.5471 .1613 -3591	1-02313	1-02583	1-02691								
517	534	June	15	7.55	3 30 N.	19 51 W.	2526	50	77.0	74.6 23.7 C. Read on bridge	Buchanan-Rich- ard water- bottle Thermometer No. 102,505	11.50	78.0 25.6 C.	26.1	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	0.5 5.5 10.8 21.5 32.0 42.5 53.6 57.0 48.3	1.5471 .1629 -2433	1-02335	1-02610	1-02648								
518	535	June	15	12.0	3 50 N.	19 58 W.	...	Surface	76.8	80.1 26.7 C.	Reeve's French blue	12.10	77.9 25.5 C.	26.6	5.00 5.05 5.10 5.20 5.30 5.40 5.50 5.55 5.60	23.8 29.5 34.0 44.5 55.0 65.0 75.2 80.0 84.8	1.9533 1.5471 .1657 -4939	1-02372	1-02655	1-02443								
														26.55	5.30	54.6	2-2067	1-02257	1-02553	1-02253								







Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.										
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)				
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	° F.	° F.			T.	t.				T'.	t'.	w.	R.	V.
															of the Air.	of the Water.	of the Air.					
528	556	1904.	June	20	12.0	13 7 N.	21 47 W.	..	Surface	75.4	74.3 23.5 C.		Antwerp blue	9.45 28/6/04	76.1 24.5 C.	24.1	5.20 5.25 5.30 5.35 5.40	16.0 21.0 26.0 31.0 36.2	1.5471 .1507 .2352			
														24.15	5.30	26.0	1.9330	1.02411	1.02636	1.02430		
529	557	June	21	12.0	14 27 N.	23 30 W.	..	Surface	73.9	74.6 23.7 C.	Reeve's French blue	10.0 28/6/04	76.2 24.6 C.	24.1	5.30 5.35 5.40 5.45 5.50	21.5 26.8 32.5 38.0 44.0	1.5471 .1507 .2949					
														24.15	5.40	32.6	1.9927	1.02432	1.02657	1.02445		
530	558	June	22	12.0	15 25 N.	25 20 W.	..	Surface	73.0	73.8 23.2 C.	Pale Reeve's French blue	10.15 28/6/04	76.1 24.5 C.	24.1	5.50 5.55 5.60 5.65 5.70	42.5 47.5 52.5 58.0 63.0	1.5471 .1507 .4767					
														24.15	5.60	52.7	2.1745	1.02440	1.02666	1.02467		
531	559	June	23	12.0	16 55 N.	26 22 W.	..	Surface	71.8	72.8 22.7 C.	Reeve's French blue	10.30 28/6/04	76.3 24.6 C.	24.1	5.30 5.35 5.40 5.45 5.50	20.0 25.0 30.0 35.0 40.0	1.5471 .1507 .2714					
														24.15	5.40	30.0	1.9692	1.02445	1.02671	1.02486		
532	560	June	24	12.0	18 43 N.	27 46 W.	..	Surface	72.3	72.8 22.7 C.	Reeve's French blue	10.40 28/6/04	76.3 24.6 C.	24.1	5.30 5.35 5.40 5.45 5.50	18.7 24.0 29.5 34.8 40.0	1.5471 .1510 .2660					
														24.2	5.40	29.4	1.9641	1.02448	1.02675	1.02490		
533	561	June	25	12.0	20 19 N.	29 10 W.	..	Surface	73.6	73.5 23.1 C.	Reeve's French blue	10.55 28/6/04	76.3 24.6 C.	24.1	5.30 5.35 5.40 5.45 5.50	13.5 18.8 24.5 30.0 35.2	1.5471 .1507 .2207					
														24.15	5.40	24.4	1.9185	1.02474	1.02700	1.02504		
534	562	June	26	12.0	22 44 N.	30 35 W.	..	Surface	73.8	74.4 23.6 C.	Reeve's French blue	11.10 28/6/04	76.4 24.7 C.	24.2	5.50 5.55 5.60 5.65 5.70	30.0 35.3 41.0 47.0 52.5	1.5471 .1516 .3727					
														24.3	5.60	41.2	2.0714	1.02498	1.02729	1.02518		
535	563	June	27	12.0	25 2 N.	31 51 W.	..	Surface	73.5	75.0 23.9 C.	Cobalt	16.0	75.8 24.3 C.	24.5	5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	6.0 11.5 17.0 27.5 38.5 49.5 60.5 65.5 70.5	1.5471 .1529 .3483					
														24.5	5.60	38.5	2.0483	1.02511	1.02749	1.02529		



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.																			
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C. = 1.)													
		Month.	Day.	Hour.	Lat.	Long.	D.	d.	T.	t.			T.	t.				Observed at t.	Reduced to 15°-56 C.	Reduced to t.											
																					of the Air.	of the Water.	of the Air.	of the Sample.	4 S <sub>t</sub> .	4 S <sub>15°-56</sub> .	4 S <sub>t</sub> .				
536	564	1904.	June	28	12.0	27° 23' N.	33 6 W.	..	Surface	73.2	74.8	73.2	74.8	23.8 C.	Cobalt	12.10	76.7	24.1	5.50	26.5											
537	565	June	29	12.0	29 54 N.	34 10 W.	..	Surface	72.1	73.8	72.1	73.8	23.2 C.	Cobalt	11.30	75.2	23.6	5.30	8.0												
538	566	June	30	12.0	32° 11' N.	34° 10' W.	..	Surface	72.1	74.0	72.1	74.0	23.3 C.	Reeve's French blue	12.5	75.5	23.8	5.30	10.0												
539	567	July	1	12.0	33 53 N.	32 27 W.	..	Surface	71.6	73.8	71.6	73.8	23.2 C.	Reeve's French blue	11.25	70.9	22.0	5.30	2.0												
540	568	July	2	12.0	36 5 N.	30 50 W.	..	Surface	69.8	69.8	69.8	69.8	21.0 C.	Reeve's French blue	12.0	71.0	21.4	5.40	16.5												
541	569	July	3	12.0	37 41 N.	29 25 W.	..	Surface	64.0	66.7	64.0	66.7	19.3 C.	Turquoise	8.40	65.8	18.8	5.40	8.5												
					</																										



Number of Station.	Number of Sample.	Data Relating to the Collection of the Sample.										Data Relating to the Determination of the Density of the Sample.																
		Date (E.)			Position (L.)		Depth in Fathoms.		Temperature at time of Collection of Sample.		Colour of Water, Current, and Remarks.	Time and Date.	Temperature during Experiment.		Weights added to Hydrometer (grams).	Reading of Hydrometer.	Volume of immersed Portion of Hydrometer (cub. centims.)	Density of Sample. (Density of Distilled Water at 4° C.=1.)										
		Month.	Day.	Hour.	Lat.	Long.	D. of Sea at Position L.	d. from which the Sample was collected.	° F. of the Air.	° F. of the Water.			T'. of the Air.	t'. of the Sample.				w.	R.	V.	Observed at t'.	Reduced to 15°-56 C.	Reduced to t.					
																								4 S <sub>t</sub> .	4 S <sub>15°-56</sub> .	4 S <sub>t</sub> .		
550	576	1904.	July	12	12.0	45 56 N.	12 53 W.	...	Surface	63.7	62.2 16.8 C.	Turquoise	12.10	66.2 19.0 C.	18.5	5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	1.0 6.3 11.5 22.0 33.0 43.5 54.5 60.0 65.0	1-5471 .1161 -2985										
551	577	July	13	12.0	48 23 N.	10 22 W.	...	Surface	61.0	60.2 15.7 C.	Turquoise	17.20 14/7/04	66.9 19.4 C.	18.7	5.60 5.60 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	33.0 33.0 9.0 14.5 25.0 36.0 47.0 57.5 63.0 68.0	1.9617	1-02560	1-02632	1-02604								
553	578	July	14	12.0	51 13 N.	7 20 W.	...	Surface	60.0	59.6 15.3 C.	Dull Antwerp blue	17.30	64.2 17.9 C.	17.8	5.30 5.35 5.40 5.50 5.60 5.70 5.80 5.85 5.90	9.0 14.0 19.0 30.0 40.5 51.0 62.0 67.2 72.2	1-5471 .1114 -3664	1-02544	1-02616	1-02613								
														17.85	5.60	40.5	2.0249	1-02524	1-02577	1-02582								