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1-0263. This range of density is very interesting in affording an explanation for the otherwise anomalous fact that the colder water at 50 fathoms is found to float upon it.

The following tables give summaries of the temperatures and densities as found in this deep channel. In obtaining these temperatures, the registering thermometers of the Miller-Casella pattern are not suitable, as they will only register the temperature of the coldest layer irrespective of its depth. For this reason the temperature below 50 fathoms were taken with Negretti & Zambra's deep-sea reversing thermometer, which gives the actual temperature at the depth to which it is lowered. This thermometer has to be used with some care, as in rough weather the release which is mechanical, is apt to take place prematurely. Also, if there is much current, the steamer should be free and not anchored; as there is then so much stray line that great depths cannot be correctly measured. In these observations two thermometers were used which were kept in perfect working order. The thermometers were checked against each other by duplicate readings at the same depth, and were also compared directly with a standard thermometer. Any readings which there was reason to suspect of inaccuracy are omitted from the results given. The temperatures are Fahrenheit.

TEMPERATURES AND DENSITIES IN THE DEEP CHANNEL, GULF OF ST. LAWRENCE.

From observations extending over a distance of 200 miles, from Cape Breton to the Gaspé region.

| Locality and Date. | Surface. | 50 Fathoms. | 100 Fathoms. | 150 Fathoms. | 200 Fathoms. |
|--|----------------|--------------------|-------------------|---------------------|-------------------------|
| Between St. Paul Island and Cape Ray; at three points 12 miles apart. 16th Aug., 1894. | 58 60 59 | 31½ 33 | 37½ 38½ 40 | 40½ 40½ | 39½ |
| At 13 miles W. by N. from Cape Ray. 22nd Aug., 1894. | 58 | ..... | 39 | ..... | 40 |
| At 14 miles W. by N. from Cape Ray. 28th Aug., 1894. | ..... | 32½ | 40 | 40½ | 39½ |
| At the centre of Cabot Strait. 30th Aug., 1894. | 63 | 34 | 40 | 40 | 39½ |
| On a line along the middle of Cabot Strait, at three points 7 miles apart. 27th Sept., 1894. | 53 52 52 | 32½ 32½ 32½ | 37 39 | 38 40½ 40½ | 40 39½ 39½ |
| Between Fame Point and Ellis Bay, Anticosti; at three points 6 miles apart. 29th June, 1895. | 53 46 48 | 32 31½ 32 | 36½ 36½ 37 | 38½ 38 39½ | ..... ..... ..... |
| At 29 miles E. by S. from Cape Gaspé. 23rd Sept., 1895. | 52 | 32½ | 37½ | 39½ | ..... |
| At 40 miles E.S.E. from Cape Gaspé. 23rd Sept., 1895. | 53 | 33½ | 38½ | 40 | ..... |
| At 12 miles E.S.E. from St. Paul Island. 24th Sept., 1895. | 55 | 35½ | 39 | 40½ | ..... |
| At 30 miles E.S.E. from Cape Egmont. 25th Sept., 1895. | 54 | 37 | 39½ | 40½ | ..... |
| Mean Temperatures..... | 54.4 | 33.0 | 38.4 | 39.8 | 39.6 |

| Locality and Date. | Surface. | 50 Fathoms. | 100 Fathoms. | 150 Fathoms. |
|--|----------|----------------|-----------------|-----------------|
| At 24 miles N.E. ¼ N. from Fame Point. 12th Sept., 1895. | 1.0222 | ..... | 1.0258 | 1.0262 |
| At 11 " N.E. by N. " 13th " 1895. | 1.0220 | 1.0248 | 1.0260 | 1.0261 |
| At 29 " E. by S. from Cape Gaspé. 23rd " 1895. | 1.0234 | 1.0248 | 1.0255 | 1.0259 |
| At 40 " E.S.E. " 23rd " 1895. | 1.0238 | 1.0251 | 1.0257 | 1.0258 |
| At 12 " E.S.E. from St. Paul Island. 24th " 1895. | 1.0221 | 1.0250 | 1.0257 | 1.0263 |
| At 30 " E.S.E. from Cape Egmont. 25th " 1895. | 1.0229 | 1.0251 | 1.0256 | 1.0260 |
| Mean Densities..... | ..... | 1.0250 | 1.0257 | 1.0261 |