

found in the position shown by the line along the middle of the passage, it may even be accompanied by a reversal of the direction of the current along the Gaspé coast. The method of density sections above described was found a very effective one by which to ascertain the location of the current over a wide area at any given time, when compared with the regular observations of the speed and direction of the current as obtained from the steamer while anchored at different stations.

These changes in the position of the current may prove to be due to its displacement by the wind. There are also fluctuations in its velocity which are probably to be attributed to the influence of the tides. It is to be hoped that some light may be thrown upon these relative effects and the conditions under which they occur when the observations which have been obtained are worked out.

The following notes regarding the Gaspé current and its exceptional directions, may be given at present without explanation, to make known the possibility that such directions of the current may occur. The velocities were measured while the steamer was at anchor at the different stations, by means of current meters at the standard depth of 18 feet. The directions given are magnetic; the magnetic variation being 28° W.

The greatest velocity of the current on the Gaspé coast while it ran parallel to the shore from the usual north-westerly direction, was observed at a station 5 miles off Fame Point on July 5th. The velocity then was 2.81 knots per hour.

The most noteworthy instance of a reversal of this current occurred from July 27th to 31st. There is reason to believe that during these days the current in the offing of Fame Point ran continuously from the south-east, or contrary to its usual direction. From observations at a station $3\frac{1}{2}$ miles off Fame Point, the greatest velocity from this south-easterly direction occurred on July 31st, when it amounted to 1.43 knots per hour.

It is possible, also, for the current to run directly on or off shore for a short time, as the following instances show:—

At a station 13 miles N.E. by E. from Cape Rosier, on July 11th, the current veered from N. to E.N.E. and back to N. It ran from the E.N.E. or directly towards the shore, for two hours, with a velocity of a little over one knot. During the following night it again veered in the same way, and ran from the E.N.E. for two hours, with a velocity of nearly one knot per hour.

At a station $4\frac{1}{2}$ miles E.N.E. from Griffin Cove, on September 17th, the current ran for $4\frac{1}{2}$ hours from directions between E.S.E. and E. by N., all of which set on shore. The velocity in these directions varied between one knot, and one and one-third knots per hour.

At two stations, 4 miles off Fame Point, and 5 miles off Griffin Cove respectively, the current on two occasions, while veering in direction, ran for about an hour directly off shore, with a velocity of over half a knot.

Also on the south coast of Anticosti, on July 22nd, at a station $5\frac{1}{2}$ miles from the shore, and 4 miles east of Ellis Bay, the current ran for 5 hours from directions between W.S.W. and W. by N. or almost directly on shore, with a velocity which averaged over three-quarters of a knot.

At a station $6\frac{1}{2}$ miles off the south shore of Anticosti, and 15 miles west of South-west Point, the current during the night of July 24th ran for three hours from directions between W. and S.W., or directly on shore, with a velocity of a little over half a knot. A few hours later the direction at this station was off shore during two hours, with a somewhat lower velocity.

The co-operation of the leading steamship companies was requested in the work of this season, in noting from the logs of their vessels the currents met with in the gulf, for comparison with the results obtained in the survey itself. Blanks were prepared in which the area of the gulf was divided into regions to accord with the various steamship routes, and on which it was desired that the direction of the current should be noted. These were supplied to the following companies:—

Messrs. H. & A. Allan, of the Allan Line; D. Torrance & Co. of the Dominion Line; D. W. Campbell, of the Beaver Line; Kingman, Brown & Co. of the Black

Diamond Line; J. G. Bro Chaleurs Line. The the captains of their ste the notes made will und

The examination of season to ascertain its re of the circulation in th important information will also serve as a gene more thorough study of

As the currents so f only one or two knots p very liable to disturba influenced by the tides obtain complete informa conditions that can occu all the more necessary leading steamship rout practical value.