

## Steamboat Inspection.

middle of the passage, has usually a width of about 12 miles and a mean depth of 30 fathoms, with an average velocity between the surface and that depth of one knot per hour. Such a current would therefore have a volume sixty-four times greater than the St. Lawrence River. In the Mingan Channel, north of Anticosti, the current is tidal in both directions; and there was found to be only a very slight difference of flow in favour of the inward direction. Also, the deep water at 100 and 150 fathoms in the passage between Gaspé and Anticosti, was found to be without movement. In these circumstances it would appear probable that the return flow must take place in some part of the width of this passage, and either at the surface or as an under-current of moderate depth.

The indications, so far as obtained, point to the Anticosti side of the passage as the locality where this return flow probably takes place. Two night anchorages were made off the south coast of Anticosti near its eastern end. On August 7th at 11 miles S.E. from Heath Point, the current ran steadily from the W.S.W. for four hours; which was as long as it was then possible to hold at anchor. Also, on September 4th at six miles S.S.E. from South Point, it ran steadily for 10 hours from directions between E.S.E. and S.S.E. These inward directions correspond with the higher density of the water in that locality, as shown on Plates IV. and V.; which also indicates that the water must make westward around the east end of Anticosti.

It is not possible to trace the course of this return flow without more extended information; and it is also probable that it may change in position, when the outward current itself takes different routes. The necessity for some return flow also makes the reversal of the current on the Gaspé side less anomalous.

*Information from fishermen.*—The following description of the currents in the Gaspé region is given by two Gaspé fishermen who have lived for many years at Cape Gaspé, and have noticed the set of the currents while fishing off the Gaspé coast and around Anticosti. They have also excellent opportunity during the winter to judge of the current from the movement of the ice off Cape Gaspé itself; as their point of view on the cape is nearly 600 feet above the water. They state that the inshore tide which runs up and down, is seldom more than one mile or one and a half miles wide, off the cape. Outside of this, the ice runs constantly down all winter, and no open water is visible. This continues as long as the wind is north or north-west, which is its prevailing direction in winter; but when the wind changes to south or south-west, the ice leaves the shore, and makes open water as far out as can be seen. There is no change in the speed of the ice towards spring; but the fresh water ice which then begins to appear is quite different from the winter ice and can be readily recognized. The current however is stronger in the spring of the year than in the autumn.

Off the south coast of Anticosti, between South-west Point and South Point, they have found the current to set obliquely on-shore from the southward; and in the Mingan Channel, north of Anticosti, they believe the current to make inwards from the south-east more than outwards. They therefore consider that the current circles round, running outwards on the Gaspé side and inwards on the Anticosti side; and that it is assisted in turning by the inward set in the Mingan Channel. This circling movement appears to be confirmed by the case of a boat used for duck shooting, which went adrift off Cape Gaspé in January, and passed the Cape a second time in the early part of March.

### SUMMARY OF THE BEHAVIOUR OF THE GASPÉ CURRENT.

The descriptions above given, from the extended observations made will serve to show the general behaviour of the current between the Gaspé coast and Anticosti at different times; and also the special features which it may occasionally present, or assume locally. The region extending from Fame Point to Cape Gaspé was studied with the most care, as it is there that vessels make and leave the Gaspé coast on all the trans-atlantic and Gulf routes which lead into the St. Lawrence.

In the following summary, which is based upon these investigations of July and September, 1895, the characteristics of the current are given as correctly as possible, by