

question requiring examination, was whether there was any cross-current on the route from Cape Whittle to Heath Point, the first station occupied in the early part of July, was station A between these points, and at the middle of the channel lying between Anticosti and the north shore. (See chart, Plate I). This station is at an equal distance from the nearest shores on the two sides of that channel; being 35 miles off Table Head, Anticosti; and also 35 miles off Kegashka Bay on the north shore. It is also a little within the line joining Cape Whittle and Heath Point; and is, therefore, well placed to ascertain whether there is any indraught or outflow of current along the line of this channel. The depth of water is 155 fathoms. The weather was exceptionally quiet and favourable; and as spring tides occurred while there, any tidal influence in the current should be at its maximum.

Station B is 24 miles S.E. of Heath Point, and lies on the centre line or axis of the island of Anticosti; and it is also at the intersection of lines lying tangent to the 30 fathom banks, off the south-west and north-east sides of the island at its eastern end. It is thus well situated to obtain the direction of currents which may be guided by the trend of either shore of the island, or the edges of the outlying banks. The depth of water is 52 fathoms.

It was desirable to occupy this station again in September; but as the weather was then more broken, a position was chosen at station H, nearer to Heath Point. In this way it could be more quickly reached whenever the weather was sufficiently moderate to hold at anchor. During nine days anchorage was made four times at this station; and two of these days were too rough to make the attempt. Although the position made was closely the same each time, the depth ranged from 35 to 42 fathoms. This was still sufficient for good under-current observations.

Station C is 18 miles off Cape Whittle, where the main bend in the north shore occurs. It affords a good position to ascertain any relation between currents that may follow the trend of the shore in either direction; and also to detect any tidal element which may influence the currents.

Stations D and E are situated further to the eastward along the north shore. They are 13 to 15 miles from the coast, which makes their situation similar to station C, with reference to any current which may follow the direction of the coast itself. Station E is so placed also, as to be away from the vicinity of the inlets on that part of the coast, and thus to avoid any local cross-currents of a tidal character. The depth at station D is 45 fathoms, and at E, 98 fathoms. These six stations all lie in the vicinity of the steamship route from Belle Isle to the St. Lawrence.

Stations F and G are similarly situated with respect to the coast of Newfoundland; and the same considerations influenced the choice of their positions. Station G is quite beyond the influence of any local current from Bonne Bay. The depth at these stations is 40 and 42 fathoms respectively. It was found better, owing to the irregular character of the currents themselves, to occupy these eight stations for a longer time, rather than to attempt observations at a greater number of points, in the time available for the work.

GENERAL CHARACTER OF THE CURRENTS.

In the region referred to, the currents in the summer months are all very moderate in their speed, usually ranging from about half a knot to one knot per hour. It is reported, however, that there are currents much stronger than this in the spring of the year; but this we will have occasion to refer to again. In their direction the currents are extremely variable and irregular, especially towards the surface; that is, in the layer of water between the surface and five or ten fathoms in depth. Below this, the under-current at 20 and 30 fathoms may sometimes show more definite characteristics; as for example a tendency to make constantly in some one direction, or to vary with the tide. The surface current often appears, therefore, to have little relation to the under-current in its direction or velocity, in the time at which it slackens, or the manner in which it veers.