STATION M.—At the mouth of Placentia bay on the east side, eight miles farther out than Station G. Position, 25 miles S.W. ¼ S. from Cape St. Mary, in 60 fathoms. Observations were taken here from July 20th to 23rd, and from August 4th to 7th, making two periods of 64 and 62 hours respectively, of continuous observations. Both of these periods were at similar parts of the lunar month, between the quarter and the change of the moon. The weather was moderate on both occasions, without sufficient wind to affect the current appreciably.

The current always veered round to the right in its direction, only once backing through eight points. The period in which a complete revolution took place was 16 hours, as at Station G. The current held longer in northeastward directions; and on coming round to the southward, would suddenly change to the westward direction. There was thus usually about a quarter of the circumference towards which it did not set at all, in making each revolution; and it was in general the southwest quarter which was thus omitted; which accords with a predominant set to the N.E.

The details of the six complete revolutions are given in the table opposite, as well as four of the revolutions at Station G; and the directions omitted in each revolution are stated. The average result of the observations on each occasion, is given in Plate VI.

It thus appears that as far out as 25 miles from Cape St. Mary, the more usual direction of the set is northeastward, or inwards towards Placentia bay on its east side. The velocity however was not in any case as much as one knot, and did not actually exceed 0·77 knot.

It is also to be noted that the set of the current at this distance from shore is out of correspondence with the time of the tide; as a complete revolution in direction takes place in the 16-hour period. It is a general characteristic of these currents that they are less affected by the tide as the distance from the shore increases, as already mentioned.

The behaviour of the under-current is very irregular, and it is here difficult to draw any general conclusions when the observations are limited to the day time only. The surface direction of the current usually extends down to five fathoms without more than two points of change; but below this the direction usually becomes quite different. The under-current does not furnish any distinct indication of tidal influence; unless possibly there may be a tendency to a northeastward set during flood tide.

There is one important indication however, which corresponds with the behaviour of the surface current. It is quite exceptional for the under-current to set towards the southwest quarter, but in the other three quarters it is often strong and deep, being sometimes distinctly felt as far down as 30 fathoms.

STATION N.—This position was chosen on the centre line of Placentia bay opposite the line of the deep gulley of one hundred fathoms which runs up the middle of the bay. It was 28 miles outside the line of the headlands on the two sides of the bay. An anchorage was made here from July 23rd to 25th, when continuous observations were secured during 44 hours. The weather was quiet with the exception of a heavy rain squall during a few hours, but the fog was continuous.