

I.—*Methods of Investigation of Tides and Currents: A review of the general methods adopted in a new field of investigation, by the Tidal Survey of Canada.*

*Presidential Address to Section III.*

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It may be of interest, at the present stage, to review briefly the investigations of the Survey of Tides and Currents, as these are now sufficiently advanced to afford a good general knowledge of the nature of the tides on the coasts of Canada, and to exemplify the methods best adapted to deal with tides so diversified in character and with so little known about them for guidance in their investigation. This review may be appropriate, as the Royal Society has always shown a real interest in the matter, and has taken notice of the progress of the Survey in its annual reports to Council.

Definite steps to obtain information as to our tides and currents were first taken by the Marine department some 16 or 18 years ago, and the Survey for the purpose was organized as a branch of that department. Although its primary object was to secure practical data for the benefit of navigation, it is interesting to note the directions in which the results have become of indispensable value to other departments in the Government service, as well as to our coast cities, for other than maritime purposes. It may be true that these accessory results have been obtained by extra work, outside the requirements of the Marine department for the interests of trade and commerce; but they serve nevertheless to show how any such investigation which the Government may undertake becomes of far reaching benefit to the country at large.

To make the present review as brief as possible, it is only proposed to outline the work that has been done, sufficiently to explain the general procedure which has proved serviceable in obtaining the best results. The results themselves need not be enlarged upon, as they are already published; and this review may thus serve as an outline with which all the information published may be connected by references. It is hoped that this may also prove of some service to others who may undertake similar investigations in new fields in other parts of the world.