

A further memorial was presented to the Minister by the Shipping Interest of Montreal, bearing the representative signatures of Messrs. H. and A. Allan, David Telfrance & Co., H. E. Murray, Anderson McKenzie & Co., and F. W. Hemshaw. This memorial points out the special deficiency in Canada of such information to mariners as is supplied by the Imperial Government in the British Tide Tables; which show not only the change in the depth of water due to rise and fall of the tide, but also supply very full information about the currents in the waters surrounding the British Islands, whether due to the action of the tides, or influenced by atmospheric causes. The annual wreck list is referred to, as showing the urgent need of similar information for Canadian waters; and as far as ascertained, ship-masters were unanimous in their anxious desire for information on the subject. The need of taking immediate action in the matter is urged, as the necessary observations will occupy some years, and every year before their completion will show its list of preventable wrecks.

This memorial was also heartily endorsed by the President of the Quebec Board of Trade. It was referred to Captain W. H. Smith, R.N.R., Chairman of the Board of Examiners of Masters and Mates, who has had thirty years' experience in the Atlantic service; and in reply he concurs in recommending that self-registering tide gauges be placed at all the prominent ports, and observations taken by competent persons.

About the same time a further communication was received from Dr. Johnson, on behalf of the Committee of the British Association, which reviews the representations already made by them. Amongst other reasons adduced, the rule of the Imperial Board of Trade is referred to. This requires all masters of ships to obtain a certificate of competency, and for this purpose to pass an examination; which examination, in the case of masters desiring a certificate for the coasting trade, includes a knowledge of the tides and tidal currents. The information enabling them to pass this examination is found in the tide tables published by the Admiralty. This is cited to show the need of obtaining data for Canadian waters on which similar information could be based. The recent re-survey of part of the Lower St. Lawrence under Staff Commander Maxwell, is also referred to; and his endeavour as far as time permitted him, to investigate the tides and currents in the part of the river in which he was at work; although he acknowledges his means to be limited and insufficient to establish comparisons with other points. The opinion of Captain Lecky, R.N.R., is also quoted from his work on 'Practical Navigation.' This work has received the approbation of the naval authorities of Great Britain and of the United States, and is supplied to the fleets of both these countries. In it he gives a list of 16 books which he says 'may be considered absolutely essential to safe navigation in the present day, when the question of speed enters so largely into the calculation.' His list includes the Admiralty 'Tide Tables' and Galbraith and Houghton's 'Manual of the Tides and Tidal Currents' for the waters surrounding the British Islands.

COMMENCEMENT OF THE WORK.

In the following season of 1860 a practical commencement was made. It was proposed to make some further preliminary observations; to purchase a few tide gauges; and also to make available, as far as might be possible, some old tidal records for the years 1860 and 1861, which were discovered in the archives of the Hydro-