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THE ICE PHENOMENA AND THE TIDES OF THE BAY OF FUNDY,  
*Considered in connection with the construction of the Baie Verte Canal.*

BY HENRY V. HIND, M.A., WINDSOR, N.S.

I. THE BAIE VERTE CANAL.

THE BAIE VERTE CANAL is a contemplated work designed to connect the waters of the Gulf of St. Lawrence, at Baie Verte, with those of the Bay of Fundy, at Cumberland Basin. It will cross an isthmus between these Atlantic Ocean waters, fifteen miles and one quarter in breadth at the narrowest part; the lowest summit on the isthmus being of a soft marshy nature, and elevated only five feet above the level of a tidal wave which occurred in the Bay of Fundy, on the 5th Oct., 1869; and 9 feet above a tide observed on the 25th Oct., 1870.\* The tidal waters of the Gulf of St. Lawrence and the Bay of Fundy approach within  $6\frac{3}{4}$  miles under ordinary conditions, and at certain periods the water in Cumberland Basin is eighteen and a half feet above that in Baie Verte, but during ebb tides the water in Baie Verte is nineteen and a half feet higher than that in Cumberland Basin.†

The boundary line between the Provinces

of Nova Scotia and New Brunswick is twice intersected by the route adopted for the proposed navigable channel of communication.

The reports on the Baie Verte Canal by the Chief Engineer of Public Works (Mr. Page), and by the Assistant Chief Engineer, (Mr. G. F. Baillaigé), embrace valuable and interesting information respecting the physical geography of part of the Bay of Fundy, and particularly of the isthmus separating its waters from those of Baie Verte in the Gulf of St. Lawrence; but these reports are in the main devoted to the engineering details and novelties inseparable from the undertaking, which, the Chief Engineer states, is attended with unusual difficulties.

The opening of a communication between the waters of the Bay of Fundy and Baie Verte has been discussed periodically since the year 1822,\* but in none of the reports to

\* *Vide* "Synopsis of Reports on the Baie Verte Canal, published by the Department of Public Works.—1. Rob. C. Minnitte, P. L. S., 1822; 2. Francis Hall, C. E., 1825; 3. Thomas Telford, C. E., 1826; 4. H. O. Crawley, Capt., R. E., 1843; 5. John Page, Ch. En., P. W., 1869; 6. G. F. Baillaigé, Assistant C. E., P. W., 1872; 7. Canal

\* Report of the Chief Engineer of Public Works.  
† *Ibid.*