## QUEBEC HARBOUR COMMISSIONERS' REPORT FOR THE YEAR 1878.

(Under the 38 Victoria, Chap. 55, Section 14.)

QUEBEC, 16th January, 1879.

To the Hon. JAMES C. POPE,

Minister of Marine and Fisheries.

&c., &c., &c.,

Ottawa.

SIR,—I have the honour to submit the following on the doings of the Quebec Harbour Commissioners for the year 1878.

Having reported to the Public Works Department on the works of the harbour improvements and the graving dock, and on the operations of the lifting barge, for the year 1878, I beg leave to state that, under these titles, this report will contain what I have already reported to the aforesaid Department.

## The Harbour Improvements in the River St. Charles.

During the winter of the year 1877-78 the damage done to the works in progress was slight. The extraordinary mildness of the season doubtless contributed to this result; but the fact is

worthy of record as a test of their general stability.

During this period, beyond the improvement, repair and increase of the contractors' plant, little beyond the preparation and miscellaneous iron work was done by the contractors.

In the construction of new and improved plant and other appliance, much energy was displayed; and the following engine moved, and labor-saving tools were placed on the works to commence operations in the spring :-

One clam-shell dredge of the largest kind yet manufactured. One dipper or shovel dredge on the principle of the wellknown steam navy, equal to moving at each dip 84 cubic feet of

material, or upwards of three cubic yards.

One steam revolving derrick of 110 feet radius, or 220 feet diameter, carrying buckets of equal capacity with the dipper

Two steam tugs, two pile engines, six hoppers and other

barges, and one double cylinder concrete mixer.