

one, would heartily go for throwing them off. It is in the increased trade that the country really is to get a return for the expenditure.

Mr. VAIL. Will the Minister tell me what the reduction has been, and what the rate is at present.

Mr. POPE. It is two cents a ton now, and it was twenty before.

Murray Canal..... \$170,000

Sir RICHARD CARTWRIGHT. I should like to have full information about the position of work on the Murray canal. The work should have been in a much more forward state than it is. The quantity of work to be done is comparatively small, and I think it was four years ago that a sum on that account appeared in the Estimates. It is the opinion in certain sections of the neighborhood that an error has been made in the locality chosen. I should be glad to know what further information the hon. gentleman has on the subject.

Mr. POPE. I have no further information on the subject. The contract was let on 4th August, 1882. The amount was \$1,140,655. In 1884, \$286,100 were paid.

Sir RICHARD CARTWRIGHT. When is the contract period for completion?

Mr. POPE. I do not know.

Sir RICHARD CARTWRIGHT. I thought it was to be completed before this date. How many feet of water will there be?

Mr. PLATT. Is the cost of dredging Presqu'île harbor to be paid out of this vote?

Mr. POPE. It is part of this contract.

Mr. PLATT. Have the contractors undertaken the dredging of the harbor or did the Government let the contract to the contractors who are at present doing the work.

Mr. POPE. The contract was let for the whole work including the dredging.

Mr. BOWELL. The contractors for the whole work let the dredging to Mr. Murray, of St. Catharines. The cost of the work is not separated. The dredging of the harbor will cost from \$50,000 to \$75,000.

Mr. POPE. The depth of water required is 11 feet. I have been informed by persons engaged in the navigation of the Bay of Quinte that it did not allow a depth of more than 10 feet.

Mr. BOWELL. 12 feet at the lowest point.

Sir RICHARD CARTWRIGHT. It is well known that the water falls in particular seasons very much lower than the average; and if the canal is to admit a depth of 11 feet, care should be taken that the navigation in the bay should exceed that.

Mr. POPE. The report of the chief engineer is that there is a depth of 12 feet in the bay.

Sir RICHARD CARTWRIGHT. Has anything been done of late years to remove shoals and obstructions?

Mr. BOWELL. Not for seven or eight years. The bay was sounded by an engineer when this question was under consideration. There are two points at which there is low water. One, at Nigger Island, where there is a lighthouse, and the other just below Trenton. But the depth of water at those points was 12 feet.

Mr. PLATT. The report of Mr. Page says that 11 feet is all that can be depended on, and Mr. Rubidge states that 11 feet is all that can be depended on without incurring considerable expense in improving several places in the bay.

Mr. BOWELL. That will be when the lake is low.

Mr. PLATT. Yes; at present there are 12 or 13 feet. Has the hon. Minister any report of the progress of con-

struction, of the difficulties met with in the progress of the works, and as to whether time is undoing what the Department has been doing for the last few years? Will the hon. gentleman tell me in what way the payments are made to the contractors, in proportion to the work done, and how does the Minister obtain a knowledge of the number of yards excavated?

Mr. POPE. We obtain it from the engineer.

Mr. FERGUSON (Welland). That is always done by cross-sectioning previous to the work being done, and then cross-sectioning afterwards.

Mr. PLATT. What I want to find out, is, whether the contractors are paid for the amount of excavation, or for the number of excavated yards they remove.

Mr. POPE. I am told it is the excavation that is paid for. It is like any other work, of course the engineer takes cross-sections and then afterwards he measures up the work.

Mr. PLATT. Last year a certain amount of excavation was done for which a certain amount was paid. This spring it was found that nearly half of the work had to be re-excavated. Will that have to be paid for twice.

Mr. McCALLUM. I suppose that it is like any other contract, the engineer will take his soundings and as the work is done, he will measure up the excavation on the scows by progress estimates. The filling in would I suppose be a question of damages.

Mr. PLATT. If the contractors are to be paid for the re-excavating as fast as the sand fills in, it will cost us from \$3,000,000 to \$5,000,000, as the sand is filling in very rapidly during the winter and early spring, there being sometimes as much as 50 to 100 cubic feet in a single movement. I would suggest that, under these circumstances, something should be done to protect the canal from the influx of this moveable sand, and that the Government should make immediate enquiry as to the character of the work. Something has been said with regard to the depth of the canal, and I would ask the hon. gentleman, if any representations have been made as to the width of 80 feet at the bottom and 100 feet at the top being sufficient.

Mr. POPE. I may say that both of our engineers have reported that the sand is not filling in, and that it was all a mistake. Mr. Page also gives his opinion that it is wide enough. Mr. Page and Mr. Rubidge both say that it should not be wider. Of course everybody likes a wide canal. At the same time, our engineers report that 80 feet is enough for the business of the canal.

Mr. PLATT. We do not know how much the business will be, but the object of having it, say 150 feet wide, would be to prevent it filling up so rapidly by the sand. This canal has been the result of very much agitation, but the original promoters had better grounds for urging on the Government that it should be made than those who have urged its construction in later years. The hon. member for Grenville has told us that the character of the vessels doing our lake trade has changed so much of late years that even a 12-foot canal is comparatively valueless at the present time. I find that in Mr. Page's report of 1867, he says:

"The principal reason urged in favor of a canal connection between Lake Ontario and the Bay of Quinté, is the advantage which it would confer on commerce by enabling vessels of the class which navigate the lake to avoid the dangers in the vicinity of Long Point during the stormy seasons of the year, by passing through the comparatively sheltered waters of the Bay of Quinté. In order to secure this, the draft of water, should be at least equal to that of the Welland canal, through which vessels drawing 10½ feet can pass. This would render it necessary to take advantage of the full available depth of the Bay of Quinté, which, as before stated, would be 10 feet at the very lowest water, and fully 11 feet at ordinary low stages of the bay and lake."