

servants working to make their country more prosperous. This work has covered a period of about five years and has cost the country nearly three-quarters of a million of well spent money. According to this report, the distance from Montreal to French River village on the Georgian bay by the route adopted is 440 miles. The plans and specifications are made for a channel 22 feet deep all the way, so as to accommodate the largest lake freighters measuring 600 feet in length by 60 feet beam and 20 feet draught.

The water supply is taken from the natural summit levels that is to say from the lakes above lake Nipissing called Trout, Turtle and Talon lakes. These and the natural low water flow of the Ottawa and French rivers are proven to be amply sufficient to feed the canal at all times. But the engineers recommend the storage of the surplus water flowing into the Ottawa river during the spring floods and to use the same in case of emergency. In this respect it is very interesting to consult the report made by Mr. Coutlee, a government engineer, on the question of the Ottawa River storage, which report should be considered as a necessary supplement to the report on the Georgian Bay canal. This water storage scheme has been working very well in many countries of Europe and in the United States. Lake Nipissing is also offered by the engineers as an alternative summit reservoir on the condition of spending \$10,000,000 more and of excavating 12 additional miles of canals. From Montreal to the summit level the rise is 659 feet, requiring 23 locks; and from the summit level to the Georgian bay the drop is 98 feet, requiring 4 locks, making a total of 27 locks and 18 dams. The whole distance of 440 miles is to be divided as follows: 28 miles of canals, 66 miles of dredged channel and 346 miles of lake and river navigation. The alternative route by Back river or Rivière des Prairies around the island of Montreal would cost \$5,000,000 less than the route by Lachine. The cost of the whole enterprise is calculated at \$100,000,000. Conditions having considerably changed, however, since 1909, I believe that the sum of \$150,000,000 would be a fair estimate to cover everything, including all possible contingencies.

I have taken some of the time of this House to analyse and compare the contents of all the reports made by engineers since the year 1858, not for the purpose of giving new information on this question of construction, but principally to show that since

the beginning, all the experts who have explored or surveyed the Ottawa and French River route have declared themselves satisfied as to the feasibility and the advantages of this great enterprise, and to dispel, once for all, the false impression conveyed by the adversaries of this project that those different reports were of a conflicting character. Not only do they not conflict, but I think I have demonstrated that even the existence of apparent or unimportant differences tends to prove the rectitude of the similar general conclusions arrived at.

Before dealing with the commercial utility and other advantages of the Ottawa and French River route, I think it is necessary to dispose of three objections which are generally made against the construction of the canal. Other objections having regard to the commercial aspect will be dealt with later.

The first objection is that, the route being situated at a northerly latitude, ice will be an obstacle for a longer period than along the Welland-St. Lawrence route far more to the south. This objection is not serious. First of all, there is not very much difference, if any, between the time the St. Lawrence is free of ice and the time the Ottawa is free also. But even if there was such a difference, it must be remembered that the trade comes from lake Superior and that the boats going to the Welland as well as those going to Georgian bay must necessarily lock through the Sault canal and the latter is situated at a higher latitude than the highest point along the whole Ottawa and French River route.

The second objection is that the channel will be dangerous for navigation on account of numerous curves. According to experts, a curve may be dangerous to navigate and on the other hand it may be as safe as a straight line. One has to consider the width of the channel at the curve, the radius of the curve and the length of the curve. The channel of the proposed Georgian Bay canal is designed to be wide enough in the curves to give ample room to the biggest ships: As to the radius of the curves, no curve on the whole Georgian Bay canal will be as sharp as those in the neighbourhood of Sugar island, on the Great Lakes, where no accident has ever occurred to the big ships constantly navigating there day and night. As to the length of the curves, very few are long and they form an aggregate of about 69 miles where navigation is affected. The rest of the route is straight or nearly so. Besides it must be