

some 12 miles from the south end of the lake and extending nearly across it, which suggested the idea of crossing the lake, and thus saving a long detour to the south. The survey and soundings show that the crossing of the West Narrows from the mainland to Deer Island is 400 feet in length, with a depth of but 5 feet at the ordinary stage of water. There can be no objection to filling in the greater part (if not, in fact, the whole) of this crossing.

"The main channel of the lake is between Deer and Sugar Islands, and is 2,400 feet in width, with an extreme depth of 34 feet at the ordinary stage of water. A draw-bridge would be required here, for the passage of the small steamers which navigate the lake when free from ice. There has not been an opportunity to examine critically the nature of the bottom, but indications are that it is a firm, gravelly deposit, which would furnish a good foundation for piers, and make it practicable to drive piles, if thought desirable to do so, in the construction of a bridge.

"The East Narrows, between Sugar Island and the mainland, is 650 feet wide, with an average depth of about 6 feet at the ordinary stage of water. The greater part, if not all, of this crossing, can be made by an embankment. A draw-bridge might be desired, to admit of direct water communication between Lily Bay and Greenville but, in my opinion the exigencies of the case do not demand it.

"The saving in distance effected by thus crossing the lake, instead of skirting the south end of it, is in the vicinity of 13 miles, of which several miles would require a large amount of earth and rock work."

So it seems that, first of all, he does not know anything of that most important portion of the lake, the portion 2,400 feet long, with a depth of 34 feet. Then, he admits that it would be necessary to have a draw-bridge, and I would call the attention of the House to this fact. All railway authorities agree in saying that it is better to lengthen a line, even by several miles, if by so doing you can avoid a draw-bridge. Everyone knows the danger of draw-bridges. I do not think there is any draw-bridge which has not been the scene of a very serious accident. Even if the construction of the bridge were possible, it would cost an immense sum. Engineers do not know what the amount would be. There has not been an opportunity to examine, critically, the nature of the bottom, but the impression is, that it is formed of a gravelly deposit. Surely this is not furnishing the House with those details which have been promised. As to the grades and curvatures of this line, here is what Mr. Spofford says :

"This line was run with a view of adopting a maximum grade of 66 feet to the mile, but the topography and distance indicate that a lighter grade can be used in the location. I have, therefore, laid upon the profile a continuous grade of 1.07 feet per 100 feet, or 56½ feet per mile, for 12½ miles, and for 4½ miles a grade of 53 feet per mile, with 2,000 feet of level grade between them."

He adds :

"It is possible that the 1.07 grade can be reduced still further, by increasing the length of the line at Mountain Brook. It is also possible that an entirely different line might be obtained, giving a little more distance, by following another branch of the river, which runs several miles north of the branch followed, but heads near the same point. This long grade is the chief drawback to this route, though not so objectionable as it would be if opposed to the anticipated traffic from the west. However, all efforts and investigation made with a view to discovering a lower summit upon this general route have been unavailing."

He goes on to say :

"Leaving Pleasant River valley, the line runs in a generally easterly direction, over an undulating surface, with no very long grades, though the topography of this section of country necessitates considerable curvature in the alignment at some points. Grades of 1 foot per station can be adopted, with, perhaps, one exception—that upon the east side of Mud Brook, between stations 970 and 1,115. There is some question whether the distance necessary for a 1 foot grade can be obtained here, and I have laid a 1.10 per 100 feet grade upon the profile, to which the location can be adapted."

All this is mere guess work. There is nothing settled. Mr. Spofford says that all efforts and investigation made with a view to discovering a lower summit upon this general route have been unavailing. We will see what that highest summit is which it has been found impossible to reduce. Here is a most damaging feature of the line, which we find in the report of Mr. Burpee, which is annexed to the report by Mr. Spofford. Mr. Burpee, at page 40, says that there is a summit of 950 feet to overcome—besides the height already reached—which is not to be overcome by the combination line. According to other information I have obtained since,

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and which is to be found in the smoking room, there is not only 950 feet to be overcome, but more than 1,100 feet. But let us take the lower figure, and that is the figure given in Mr. Burpee's report, which is an official report, and let us see how the matter stands. It is admitted by railway authorities that a rise of 20 feet is equal to an increased distance of one mile. If we make a calculation, we will find that the 950 feet in question will be equal to an increased distance of 47½ miles. The survey of that portion of the line from Moosehead River to Mattawamkeag has been so imperfect that the two engineers in charge, Mr. Spofford and Mr. Burpee, do not give a calculation as to the cost. Those engineers have too much respect for their characters to give an estimate—they do not give even an approximate estimate of the cost of the line. How could Mr. Spofford give an estimate of the cost of crossing Moosehead Lake? He admits that everything is uncertain, and all authorities are agreed that it is a very difficult place to cross. As to the line from Mattawamkeag to St. Andrews and St. John, we have no information given, but the road is to follow the existing line. In one portion of Mr. Schrieber's report it is proposed to build a new line from Mattawamkeag to St. Croix crossing. No survey has been made of that portion of the line, which is 58 miles in length. I understand the hon. member for Charlotte (Mr. Gillmor) to say that it has been surveyed. If such is the case, we have not been given information on the subject; and if the Government had that information we should obtain it.

It being six o'clock, the Speaker left the Chair.

After Recess.

Mr. LANGELIER. When the House took recess, I was endeavoring to show that the surveys of these proposed lines were quite incomplete. So far as the Pope line is concerned, a survey has not been made from St. Lambert to Chambly; and from Chambly to Lennoxville it is imperfect. The grades are bad, and Mr. Davy says that it is not sufficiently explored. From Moosehead River to Mattawamkeag the surveys were made by Messrs. Spofford and Burpee, the former locating only six miles, and out of 135½ miles, only 69 have been carefully located. Further on in the report it is stated that the difficulty of crossing Moosehead Lake has been considered by engineers a formidable obstacle in the way of a short line from Megantic to Mattawamkeag. The curves and grades are bad, according to Mr. Spofford's report, and the survey is so imperfect that Messrs. Spofford and Burpee do not even attempt to get an approximate estimate, and out of 135½ miles, only three are level. Then as to the two routes, one follows entirely existing lines, and the other also, with the exception of two missing links, one from Harvey to Fredericton, and the other from Fredericton to Salisbury, amounting to about 137 miles. So far as this line is concerned, there are 133 miles which are completely unsurveyed, according to the reports which we have, and for 66 miles there has been no location on the ground, so that there are 203 miles of the proposed line which have not been surveyed and located, or nearly one-half of the total mileage which is only located on the map.

I come now to the Edmunston line. One of the proposed locations of that line is by way of Rivière Ouelle, and we have very little information with regard to it. We have a report of Mr. Crawford, to the effect that his plans and profiles are not complete, but he understands that it is an easy and good line.

So far as the Rivière du Loup line is concerned, Mr. Crawford says it is pretty difficult, but he gives some details of his survey.

I come now to the combination line, and here again the surveys are not completed, and we have not the information to make a selection. A portion of this line is well known