

amounting finally to about \$10,000. Hill's store at the summit of the Selkirks was also swept away. West of the summit the road is blocked with the snow, the slides occurring nearly every day. Wright, the contractor, whose men are working on the east slope of the Gold Range, is now getting his supplies from Beaver Creek, the road to Kamloops being completely blocked. So far there are six men known to have perished in these slides, but there are others whose names have not been ascertained, who also got buried in them. There was a rumor among the men that the line of route was being slightly changed on account of the dangers from avalanches. Instead of seeking the centre of the passes the road was being led along the mountain side, the rock being scooped out to afford more shelter to the passing trains."

Now, Sir, that is the statement of the newspapers as to the condition of things. I should have been glad if the hon. gentleman had given us an authentic statement from the reports of the Government's and the company's engineers and from the contractors, of what the state of things is. I think it was his duty to have done so. I think that Parliament has a right to be informed as to the results of the operations, as to what the results has been with reference to the climatic difficulties on the route which was chosen without those precautions and explorations, which should have been insisted on before the Government allowed themselves to be committed to it at the solicitation of the company. In the same connection I may advert to the circumstances that we now find in the papers on the Table an estimate for a further large sum of money for snowsheds, not merely on the north shore of Lake Superior, but the largest part in the Pacific region. Now this was either considered as an essential for this road originally or it was not. If it was considered as an essential originally and was included in the estimates of last year, it is embraced in the money that is voted to finish the road; but, if it was not considered a necessity then, it has become a necessity on account of these subsequent developments, and, therefore, you have additional proof from the company itself that there have been developments of a serious character with reference to the climatic difficulties in passing this way—how serious, what the drawbacks may be, what the difficulties may be, arising therefrom, it is of course impossible for me to tell. I have endeavored, before reading in this House what is notorious to the public through the medium of the newspapers, to obtain authentic information from hon. gentlemen opposite, and having so endeavored in vain, I have brought the subject once again before the House in the hope that we may even yet obtain that information to which we are entitled. Then passing the climatic question, which is a very serious difficulty, we come to the question of grades and curves. As I have said, it is not only a question of mileage with reference to a railway, it is a question of gradients and a question of curves. In the debate which took place last year, when the hon. member for Richmond and Wolfe (Mr. Ives) undertook the duty of sustaining, after I had spoken, the position of the Government, he, in a very elaborate speech, dealt with many topics, amongst others with that of grades and curves; and he stated, as you will find in the report of the *Debates*, that the utmost care had been taken to give easy grades and easy curves to the Canadian Pacific Railway. Now, by the Yellow Head, the maximum grade was 1 in 100, or 52·80 to the mile. The stiff grades there of 52·80 were all concentrated within 30 miles, and the longest stiff grade was but 3½ miles. That is the condition of the Yellow Head Pass. By the Kicking Horse Pass there are over 52 miles of 116 feet or 117 feet; there are over 52 miles of that grade, more than double the maximum of the Yellow Head Pass grade, and more than three times the mileage of that grade. Contrasting these things you have got in one case 16 miles of a grade of 52·80, and you have got in the other 52 miles of a grade of 116 or 117. This is altogether apart from the temporary line, which temporary line is to be the permanent line for several years to come, and to carry this immense traffic which is expected to go over the line from China to Europe, and back from

Mr. BLAKE.

Europe to China. On that line the grades are 4½ to the 100, or 237 to the mile. The grades are so steep that already serious accidents have occurred. In one case a construction train ran away and a large number of men were injured, and there are in the course of the grade two of what are called switch backs, arrangements by which, if you find the train is overpowering you, you can run it off the main track and run it up a little hill so as to stop it. That is the kind of track over which the traffic on the Canadian Pacific Railway is to be carried on for some years to come—237 feet to the mile, protected by switch backs. Taking the 119 miles west from the summit of the Rockies, there are only 11½ miles about as near as I can make out, of levels. Now with reference to curves. On the Yellow Head line, on the line of my hon. friend from East York, there was but one curve of 8 degrees, and there were several of 7 degrees, and those curves of 7 degrees were on levels, or very low grades, and I need hardly tell the House that that is a very important consideration, that the combination of a steep grade and a sharp curve intensifies the difficulty, and that therefore it is customary, wherever practicable, to compensate for the curvature by the grade. But, as I say, on the Yellow Head Pass, the maximum curve was one of 8 degrees, and there were several of 7 degrees. Now, what is the case in the 119 miles west of the summit of the located line? Why, Sir, there are no less than 103 10-degree curves, 37 9-degree curves, and 76 8-degree curves and under 9 degrees, making 216 curves of that very severe character. And this does not include all, because there are several very sharp curves on the line beyond the 119 miles. The investigation which I have made did not enable me to go through the whole of the line, and therefore I took this particular section of 119 miles, and from the imperfect information before us I gleaned such facts as I could. Now, Sir, the total number of curves on that 119 miles is 691. On one mile there is about 2,000 feet of tangent, as near as I can make out; on another of 1,500 feet; on several more about 2,000 feet. In one place, in about 2,200 feet of line, there are five curves, thus: 10 degree right; 10 degree left; 8 degree right; 8 degree left; and 6 degree right. They take as many and as sharp turns as this Administration does. In 12 consecutive miles there are 123 curves, 18 of 10 degrees, 9 of 9 degrees, 19 of 8 degrees, 15 of 7 degrees and under 8, 2 of 6 and under 7, or 63 curves over the minimum curve of the Union Pacific; and these are on grades which average about 116 feet. That is the condition of things. I say that the hon. gentleman authorised this location; authorised a location by way of Kicking Horse Pass, before he had before him plans and profiles, showing that there was a practicable road within the conditions of the contract, by the Kicking Horse Pass. They had realised that duty of theirs at an early stage. I can call your attention to the Order in Council, and the reports of Sir Charles Tupper, showing that he declined, on the advice of the engineer, to recommend the location of the Canadian Pacific Railway through the prairies of the North-West, beyond a particular point on those prairies, because they were pointing towards Calgary and Kicking Horse; and because he said beyond this point, which is a common point for both routes, the route by the Yellow Head and by Kicking Horse, I will not authorise the location until you show me a line within the contract by the Kicking Horse. That was his determination, and he declined to authorise a location beyond the common point I have mentioned. I can show subsequent Orders in Council passed under the rule of the Acting Minister of Railways in which, with the former Order in Council staring him in the face, and without information that there would be a practicable line within the contract by the Kicking Horse, the Acting Minister of Railways did authorise the location of the line to a point which was run-