

**Surveys, B.C.—
Character of
Survey.**

22284. But, speaking for the present of the two main objects of the year's operations, I understand one of the objects upon which you devised the plan of operations was to get such information about the Yellow Head Pass as would enable you to compare its merits with those of the Howse Pass?—Yes.

22285. I understand you now to say that you got information which enabled you to make that comparison without an instrumental examination of the passes?—Of one of the passes.

22286. That particular pass?—That particular pass. It was not so satisfactory as I would wish, but it was enough to enable me to judge.

22287. So that for that purpose, to ascertain the merits of that particular pass, an instrumental examination was not necessary?—The difference between the two was so marked I could arrive at a decision without waiting any longer and keeping the question of the survey of Howse Pass open any longer.

22288. At all events, the result which you had in view at the time you devised the campaign was reached without the mode of examination which you had first thought to be necessary?—In that particular instance?

22289. The Yellow Head Pass?—Yes.

22290. And that was so decidedly preferable to the other that you were enabled to adopt it upon only an exploratory survey as against the merits of the Howse Pass, shown by instrumental examination?—Yes; but if those two passes had been reversed, I doubt very much if we would have been able to do it—that is, if an instrumental survey had been made of Yellow Head Pass and no instrumental survey had been made of Howse Pass, I doubt very much that we would have been led to that decision.

22291. If you had considered it possible to get information of the Yellow Head Pass, which you did eventually get by a mere exploration, then it would have been unnecessary to ascertain all that was ascertained of Howse Pass?—Yes; but that is being wise after the event. When I first set out on this examination, I expected that a great expenditure would have been necessary, at both of those passes, to take the railway through; I had a hazy idea with regard to the absolute necessity of tunnelling the summit of one or the other, and the question was the length of the tunnel and the character of the cutting that would be necessary to get through the summit. That information which I wanted could only be properly ascertained by instrumental survey. It so happened that another kind, a simpler kind of examination was all that was needed in the Yellow Head Pass, but I did not know it until the examination was made.

22292. Did you not consider it a desirable thing to try the simpler method before the more expensive examination?—Yes; but I was desirous of getting positive information, not of one route through the Rocky Mountains, but of the two routes of which mention has been made, before the next meeting of Parliament.

22293. Those British Columbia examinations commenced in July, 1871. I gather, from what you have said, that before six months were over you had got from the simple explorations, and though they were probably delayed on account of the size of the party making its way

When witness started the surveys he expected there would be great expenditure in both Howse and Yellow Head Passes. He had a hazy idea with regard to tunnelling the summit of one or other of them, and the information he wanted could only be had by instrumental surveys.

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Large expenditure.**

northward, you got information sufficient to enable the Government to decide upon the expediency of adopting the Yellow Head Pass. If such a thing were possible, was it not worth questioning the expediency of adopting an instrumental survey at the beginning—whether the requisite examination could not have been made rapidly, and the instrumental surveys deferred until the next year: did you canvass the expediency of all that expense before incurring it?—First, as to the expediency: had I known that the Yellow Head Pass was as favourable as it has turned out, of course it would have been quite unnecessary to send any one at all there; but I did not know that. As to the expense: I discovered, to my surprise, that the expense was very much larger than I ever had any idea of; the expense of the parties in British Columbia was simply enormous, and no man could have been more disappointed than I was to find out that so much money was—I will not say wasted, but expended in that direction.

In six months had learned the nature of Yellow Head Pass by simple exploration. Had he known it was so favourable it would have been unnecessary to send any one there, and as to the expense he was very much disappointed at the amount of money wasted.

22294. Do you mean it was not wasted?—I am afraid some of it was wasted; I am afraid a very large amount of it was wasted.

22295. How do you account for that having taken place?—Well, I suppose I must account for it by want of judgment on the part of those engaged, for want of knowledge with regard to the country they were going to explore—perhaps want of judgment. A very much larger quantity of supplies were purchased than I thought there was really any necessity for.

22296. Did you take any part in directing the quantity or quality of the supplies which the different parties should take with them?—I took no part; I left it to their own discretion. I told them to make the examinations, and, in doing it, to use their own good sense and judgment; and I asked Mr. George Watt, who was appointed commissariat officer—head commissariat officer and comptroller I may say—to consult with those men and assist them, and do what he could to keep down the expenditure.

Took no part in regulating the quantity or quality of supplies.

22297. Have you informed yourself upon the kind of supplies that these parties took with them, either all of them, or any of them, so as to explain this large expenditure?—I have. First of all I would remind you that instructions were sent to British Columbia on the 2nd of April, with respect to the abandonment of all further operations on the Howse Pass route; and, in order to utilize supplies that had been taken there the previous year, the balance of the supplies, whatever they were, be they much or little, to take them through in the way which I thought they could be best taken through, to a point on the line of survey by the Yellow Head Pass. I found, not immediately, but within a year or two years after that date, that a large quantity of supplies had been carried in from the United States towards Howse Pass, purchased in the United States long after the date I had instructed the parties to transfer the balance of the supplies remaining over from the previous year, from the depot near Howse Pass to the line of survey through Yellow Head Pass.

22298. By all the different parties, or by any one in particular?—By the party that had been engaged in making the examination by Howse Pass.

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Exorbitant purchases made by Moberly's party long after directions to abandon operations in Howse Pass.

22299. That is the Moberly party?—The Moberly party. Here are a handful of accounts of purchases made at a place called Fort Colville, from a firm named Openheimer & Co., long after the date of the directions sent to abandon operations in the Howse Pass. There are vouchers for an expenditure of \$6,925, in May, 1872 (handing in papers), and other vouchers for the expenditure of \$2,606, the same month, and another bundle of vouchers for purchases made so late as August, 1872, amounting in all to \$28,283 (handing bundles of papers).

22300. Where were these latter purchases made?—These were purchased at Fort Colville in the United States.

22301. What is the character of the articles purchased there: eatables, clothing, or what other kinds of necessaries?—All sorts of things. Every conceivable thing almost.

Gold pens and quicksilver, and the like, among the things purchased.

22302. Can you state any things which you consider were not necessary for such purposes?—By glancing over them I may catch some things. I know I looked them over before, and was surprised to see that such articles were purchased. The papers are very voluminous, and I cannot say now, but there were such things as gold pens and quicksilver, and other things of that kind, that I did not see were wanted on the survey, among others.

22303. Can you account at all for these purchases being made after your instructions to withdraw from the Howse Pass investigation and proceed north westerly?—I cannot account for it, and I was very much annoyed to find, when I reached the Thompson Valley, such an immense quantity of supplies were purchased and sent in in that way.

Enormous quantity of supplies lost.

22304. Have you ascertained whether large quantities of supplies have really been wasted and not used by parties, causing an unnecessary expenditure?—I know that a large quantity of those supplies carried in at enormous cost by the Columbia River and Athabaska Pass, were left in store in the Jasper Valley, and for, anything I know, they are there still. I would draw your attention to one point there (handing a bundle of vouchers).

238 rim locks and brass knobbed B bolts among the items charged.

22305. Upon looking at this account I find 238 rim locks, and some brass knobbed B bolts, the bolts being charged at \$3.50 each: are these things requisite for surveying parties?—I should say not at all. It seemed to me as if some country store had been bought out when I first saw the account, and if I felt it was necessary to buy that country store, it would have been better in the public interest to have burned them all than to drag them through the country.

22306. Did you take any opportunity to express your disapprobation of this conduct?—I did.

22307. Did you deal with it officially?—Of course. It was some time after the purchase was made that I knew of it; but as soon as I had the least knowledge of it I took steps to relieve the party and the gentleman who conducted it of further work. On that point I may read some letters, if necessary. I made a journey across the country myself that year.

Fleming's Journal across the continent in 1872.

22308. You mean 1872?—In 1872. I left Toronto about the middle of July and went by steamer to Thunder Bay. From Thunder Bay I journeyed through by what is known as the Dawson route to Fort Garry, and from Fort Garry on horseback to Edmonton, and from

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Edmonton to Jasper Valley, not far from Yellow Head Pass, partly on horseback and partly on foot. I met Mr. Moberly in Jasper Valley. I expected that the work I had instructed him to do the previous April had been far advanced, but I found that although he himself was there, his party and his supplies were still a long way from the place.

22309. About how far behind him?—It turned out—I do not know, I am not sure—a considerable distance, perhaps half-way—perhaps more than half way, between the Blaeberry River—

22310. Boat Encampment?—Yes; somewhere about Boat Encampment. He explained as best he could; but, of course, I could not understand why it should take so long, and I expressed my dissatisfaction that so little had been done. However, I could not possibly replace Mr. Moberly or his party by another party, and I deemed it advisable to utilize him as far as could be done, so when I reached the Forks of the River Fraser—that is half a day's journey west of the Yellow Head Pass, Mr. Moberly being still with me—I took him with me to get explanations. I addressed him a long letter, a copy of which I now hold in my hand, on the subject. I do not think it will be necessary to read the whole of it, or perhaps much of it. This letter is chiefly instructions what to do with his party, to hurry them forward as rapidly as possible, and how they could be best employed for the balance of the season; what to do with the horses; what to do with this thing and the other thing. I did not then know that such a large quantity of supplies had been purchased and forwarded, but I did get some information on that subject about a week afterwards. The first letter of instructions is dated the 18th of September, from the Forks of the River Fraser, east of Tête Jaune Cache. I wrote on the 25th of September from Stillwater, on the River Thompson, after I had learned something about the quantity of supplies that had been taken in, to this effect:

Expressed dissatisfaction to Moberly, but determined to utilize him and his party.

“W. MOBERLY, Esq.

“MY DEAR SIR,—I wrote you on the 18th inst., from the Forks of the Fraser River, enclosing a memorandum of instructions, which you read over at Moose Lake camp the day before—

He read them over in my presence—

“I now deem it advisable to cancel that portion of my instructions conveyed to you in my letter which relates to the proposed winter survey and pack trail, from camp No. 48—

That is the camp in Jasper Valley—

“to Jasper House, and thence to Edmonton. On reference to Mr. McLennan's report, I find he did not leave the east end of Moose Lake on his return journey last year until the 21st of October. It is clear to me, therefore, with the good horse trail made during the present season from Kamloops entirely through to the mouth of the Caledonia Valley, and the efficient means of conveyance at your command, there would be no great difficulty in completing the survey across Yellow Head Pass to Jasper Valley, and returning with your entire staff to this side of the country before the close of the season. You will, therefore, finish the work and return with all your parties to Kamloops, and without delay write me a report of your operations during the past year. With regard to the supplies now with you or *en route* to the upper country, you will make a store at some suitable place near Henry House and put everything in charge of John Brown, whom I wrote to you about. You will furnish me with an inventory of all the stores handed over to Mr. Brown, giving a separate list of those taken through to the Athabaska Pass, and those forwarded from this section. All stores now with McCord, Mohnn, or on the way up, will be placed in Mr. Brown's charge. With regard to the pack animals, I think it would be best to send about half of them to Kamloops, leaving the remainder in charge of Mr. Brown, who knows where they can be best wintered in Jasper Valley. In selecting those to return to Kamloops, you

Instructs Moberly to complete that season's survey across Yellow Head Pass to Jasper Valley, and how to dispose of supplies and animals.

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will take care that they are in fit condition for the journey, as the grass is very deficient between this point and Yellow Head Pass. I will leave further instructions for you before I leave this province for Ottawa.

"Yours truly, &c."

I read that letter more especially to show that I had taken means, as soon as the information came to me about the purchase of those supplies that were not needed, and the waste of time unnecessarily through their purchase, to cancel the instructions that I had given to the gentleman referred to at the Forks of the Fraser, and withdrawing him from the survey.

22311. Did these instructions withdraw him from the survey at once, or do you mean that they continued him in the service, but for a more limited period?—Until he did the work. Of course I wanted to utilize him and his party as far as could be done while they were there, and had been taken there at such an enormous expense, during the few weeks remaining of the season; and, according to the instructions, I informed him not to survey any more, but to come back to Kamloops and write me a report of all the operations during the past year.

Never saw the necessity of such a large number of pack animals as Moberly had with him.

22312. Did you give any instructions on the subject of the pack animals or other beasts of burden provided by him for those parties?—I never could see the necessity for such a large number of pack animals.

22313. Did you give the subject your consideration, and come to a conclusion, whether it was an improvident act on his part?—I think there were too many animals purchased. There was no necessity at all for taking any animals that way that I could see—at least any considerable number.

22314. Did you communicate your disapprobation of that particular feature of his outlay?—By letter or verbally?

22315. In any way?—I do not remember at this moment; these are simply scraps of letters that have been accidentally saved from the fire. I can find no others, and I do not remember any others expressing dissatisfaction.

22316. Having disapproved of this great expenditure by him, I suppose he was not employed the next year?—That was the end of the employment in 1872.

Moberly carried out the first, and not the second instructions (i. e. to complete work that season) remaining out the whole winter.

22317. Did he not do work in 1873?—Pardon me; that was not the end. He did not comply with my instructions. He remained out the whole of the winter and carried out the first instructions, not the second; and in answer to that he said he did not get the second instructions.

22318. Then your judgment on his conduct was not communicated to him, as you understand, at the time you expected it was?—I did not see him for a long time afterwards. He remained out, and did not come back. There was no means of sending communications up there except by hand. This was sent by an Indian, or by pack train taking up supplies over the Yellow Head trail.

Assumed that Moberly had abandoned the service.

22319. When you returned to Ottawa did you take any steps to have him dealt with by direct action of the Department, or in any other way, or did you take it for granted that he had abandoned the service?—I took it for granted that he had abandoned the service.

22320. When did you first learn that he had not; that he was still under pay?—My information was of a negative kind. I did not hear from him for a long time.

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Moberly reports
January, 1873.

22321. He puts in a report dated January 13th, 1873, from the Athabaska depot to you, which was accompanied by a more general one. This last is printed. This (Exhibit No 102) he says was a sort of private report?—May I ask you if this was received from him?

22322. From him?—I will not say I did not receive a copy of this, but I do not remember. It is quite likely that I received a copy of this.

22323. Do you remember whether you assented to his remaining in the service after you became acquainted with the fact that he was continuing as a member of the staff?—I suppose I may say that I assented by doing nothing. I could not reach him. I could not communicate with him.

Assented to
Moberly's re-
maining in
service.

22324. You mean during the season of 1873?—I cannot say about 1873. This letter is dated the 17th of January, 1873, and when he came out I do not know at this moment. This, doubtless, was sent to me, and came out by way of Edmonton, and perhaps did not reach me until the spring of 1873. On reading this report of Mr. Moberly's, there are some points that occur to me, and I think it is only just to Mr. Moberly to draw reference to some things that I did not remember before, which may possibly account for him buying the supplies that were taken in after the order was given not to proceed with the Howse Pass survey. On the 13th of March, the Hon. Mr. Langevin received a telegram from the Lieut.-Governor of British Columbia, Mr. Trutch, pointing out that the railway explorations should recommence immediately. It went on to say: "Moberly anxiously awaiting here."

22325. What year was that?—13th of March, 1872—

"Moberly anxiously awaiting here authority to employ additional party east of Rocky Mountains. Coast survey by Bute Inlet cannot proceed as no capable engineer here available to take charge."

And something else that had no reference to it. That telegram appears to have been handed to me by the Minister, Hon. Mr. Langevin, and in consultation with him I was authorized to telegraph this:

"Lieut.-Governor TAUBER, Victoria, B.C.:

"Considered advisable under circumstances to transfer one party from Lower Fraser to Moberly to complete mountain work early. Now arranging here to send staff for Vancouver and Bute Inlet districts."

I bring these out because it would appear that before April 2nd it was intended to continue the survey by Howse Pass. Between these dates, March and April, it is just likely that the supplies may have been purchased by Mr. Moberly.

22326. Between what dates?—Between the 13th of March and the 2nd of April.

22327. But the dates you read for the expenditure—two of them—were one in May and the other one in August?—I mean a portion of the supplies may have been purchased between those dates. There is in this letter, I see, among other things—and I think this letter was written from Athabaska depot on January 17th in order to explain as best he could why so large a quantity of supplies were purchased. He says here:

"His Excellency the Lieut.-Governor of British Columbia informed me he had been requested to exercise a general control or supervision over Canadian Pacific Railway affairs in British Columbia. I therefore, from that time, considered it my duty to co-

Moberly's explan-
ation respecting
supplies.

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sult with and be guided, to a certain extent, by him in all matters pertaining to my further operations regarding the prosecution of the survey and other work entrusted to me in British Columbia, which course I followed in every particular until I left Victoria for Howse Pass on the 19th of April. Anticipating that the survey would be completed through the Howse Pass route, after consultation with Mr George Watt, commissariat officer and paymaster for British Columbia, I inserted an advertisement in the principal British Columbia papers calling for tenders for various supplies I considered it necessary to have forwarded on the opening of the season to the neighbourhood of the Big Eddy and the Boat Landing on the Upper Columbia."—

22328. You will understand that we have this document in evidence before us, and the contents of it; of course, if you desire to put it down on the notes we have no objection, but I was not sure that you understood it in that way?—I feel it due to Mr. Moberly to give a few paragraphs in the way of explanation. I did not wish to read it all through:

"These tenders were forwarded to Mr. Watt, but no contract was awarded until further instructions of a definite nature should be received from you regarding the season's work. Everything, however, was in readiness to have the contract awarded and the supplies forwarded, the moment those orders should be received."

I will read no more.

Felt that Moberly's judgment was so much at fault respecting supplies that he could not ask him to remain in service.

22329. We do not wish to prevent any reading which will explain any other evidence?—No; I think it was only due to Mr. Moberly to give some of those paragraphs, but the paper having been read already, I think it will be quite sufficient. At all events, although I felt that Mr. Moberly did not spare himself, and I was perfectly satisfied that he worked very hard in making explorations in the mountains, still, I felt that he erred so much in judgment in connection with the purchase of those supplies that I could not very well ask him to continue in a similar position any longer. I should mention to you also, that the surveys in British Columbia gave me a very great deal of anxiety. My instructions were not carried out in the way that I hoped they would be. Perhaps it was impossible to have them carried out, but I was disappointed with the result, and I thought it was expedient to have someone, some good man in that province to act as my deputy on the spot, and to see that all the operations were conducted in a proper and economical way. I accordingly prevailed upon the Minister to allow me to get the services of Mr. Marcus Smith, and he was sent over, I think, early in April, 1872. I think his instructions were dated the same day. I have not a copy of this letter conveying to Mr. Smith his appointment.

Instructions to Marcus Smith, 30th March, 1872.

22330. I do not think the exact date is very material unless you have some particular object?—No; it was dated the 30th of March, 1872, and pointed out that he was expected to proceed to British Columbia with as little delay as possible, and immediately on his arrival there to take under his special charge the surveys deemed necessary between Victoria, Vancouver Island, Bute Inlet and Fraser River, at the same time "assuming general charge as my principal resident assistant of all the other surveys now going on in British Columbia" and mentioning the amount of salary, &c.

22331. Is there any other matter which you consider necessary to offer, by way of evidence, connected with this question of surveys, or in any way concerning British Columbia?—I do not think there is. I am of course naturally desirous of satisfying the Commissioners that everything was done by me that could be done to have the surveys made without unnecessary expense.

**Surveys, E.C. -
Smith's Map -
Correspondence
between Fleming
and Marcus
Smith put in.**

22332. Is there anything connected with any of the other subjects which have been alluded to that you wish to mention?—I mentioned yesterday that a number of letters had passed between Mr. Marcus Smith and myself respecting a map which was said to have been suppressed, but inasmuch as Mr. Smith's letters are marked private I did not care about using them. However, I caused a letter to be sent him in reference to the letters, and asked him if he would give his consent to placing the letters before you. He replies generally that he has no objection, provided they contain no personal reflections on any one. Inasmuch as the letters only reflect on myself, I think I may venture, having got the consent of Mr. Smith, to place them before you. I do not think it will be necessary to read them. I think it will be quite sufficient to pass them across the table. (Exhibit No. 317.)

22333. I am not sure that I have the correct impression as to the different periods of your absence from Canada upon leave: can you state approximately the time and length of the different absences. I have the first one marked as from the 10th May, 1876, to the 15th February, 1877: do you remember whether that was about the period—I do not wish to know exactly?—I can give you the aggregate period, because I have it here. I left in July, 1876. I was called back the following winter. My leave of absence for twelve months, which I had asked for and obtained, was broken into, and I returned to make up my leave. The following winter I was again called back, and having left my family behind me—having been called back on very short notice, I was directed to return by the first steamer—having left my family behind me it was necessary to return again the following summer for my family, which I did. The aggregate time which I was away from Canada during those three years was, I think, nineteen months.

**Absence from
Canada of
Chief Engi-
neer.**

**During three
years away from
Canada on leave
nineteen month**

22334. During that time, as I understand it, you were on leave, and it does not include the time when you went home to help in the purchase of rails?—Yes; this is irrespective of the time I went home on duty. I was away a part of three years—

22335. I think you said that before you got leave of absence on the first of those occasions, that you had not been over the line at all excepting during your trip across the continent in 1872?—I had not.

22336. And I think you said that it was not possible for you to leave the capital to do so?—It was extremely difficult. I was engaged. Up to midsummer of 1876, I was Chief Engineer of the Intercolonial Railway, and that required a good deal of my attention. After July, 1876, I got leave, and except my presence here during the following winters, I was absent during the rest of the year.

22337. If you had been free from the connection with the Intercolonial Railway, do you think you would have been able to visit those works?—Undoubtedly.

22338. Then your inability to go over the line, was due to your connection with the Intercolonial Railway?—Yes. Then, again, in 1879, when I was required to accompany the Minister to England, on public business. I returned when that business was completed, and I returned as soon as I could with the view of going over the whole line under construction between Thunder Bay and Fort Garry, and other parts as well, but I was directed not to leave Ottawa until a decision had been arrived at with respect to the route through British Columbia.

**Why witness had
not gone over the
line.**

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At that time they were expecting a telegraphic report from Edmonton with respect to certain explorations that had been going on during the previous summer, from the mouth of the Skeena to the Peace River country. The information came from Edmonton about the end of September. I reported on the routes in British Columbia. An Order-in-Council was passed, I think, on the 4th of October, and the same evening or next morning, if my recollection is correct, I left for Manitoba, to examine the works under construction. It was then my intention to proceed over the whole line to Thunder Bay, but on reaching section 42, I was telegraphed for to return to Ottawa, on some business of importance, and I did return. The following year, some time in May, I ceased to be Engineer-in-Chief.

Alleged improper influence.
Influenced by no private considerations in recommending Selkirk.

22339. There is another matter on which I have, perhaps, not made my questions as full as you would like, I mean as to the personal interest, if any, which you had in any section of the country, or in anything at all affected by the works of the Pacific Railway?—I am very glad you have asked the question, because I am quite prepared to answer it. When you asked me the question: if I owned any land, or had any interest in land at or near Selkirk, the object of the question was, doubtless, to ascertain if I had been any way influenced in my recommendations respecting Selkirk as a site for bridging Red River, and my answer was of a negative character; and I stated further, that if I had been influenced by any personal or private considerations I would have favoured the taking of the railway, not to Selkirk, but to Winnipeg or to Stone Fort, and I gave the reasons why: simply that I own a few shares in the Hudson Bay Co. It was on public grounds alone that I made my recommendations, and one of the reasons was the existence of a large block of Government land at Selkirk, which I felt would be greatly increased in value by the establishment of a town at that place. I may mention to you that I have been told, within the last few days, by the Hudson Bay Land Commissioner, as a matter of fact, that half the Hudson Bay Co.'s land at Winnipeg, or about 250 acres, has been sold for about \$750,000. Had Selkirk been established as a city in place of Winnipeg, and the land sold at the same rate as that mentioned by the Hudson Bay Commissioner, one-third of the Government block at Selkirk might have been disposed of for as much money as Canada paid in the first place to the Hudson Bay Co. for the whole North-West Territory. I merely mention this to show that I think I was perfectly justified in viewing the Government land at Selkirk as an element of no mean importance in the consideration of the location of the line and the bridging of Red River. I hold still that Selkirk is a much more favourable site, naturally, for a city than Winnipeg. As to the private owners of land adjoining the Government block I know nothing, and have not taken the trouble to make any enquiry. With regard to owning land, or being interested anywhere else in the North-West Territories, I may state that beyond the remote interest as a small holder of Hudson Bay stock already referred to, I am not now directly or indirectly interested in any land or property of any description at any point between Lake Superior and the Pacific Ocean. I state most positively that I have at no time been influenced in the slightest degree by any personal pecuniary considerations, near or remote, in performing my duties as Engineer-in-Chief of the Pacific Railway. Besides engineering duties, I was charged for several years with the whole expenditure and was held accountable for the total outlay of money, hundreds of thousands of dollars, a responsibility which of itself was very irksome,

Government land at Selkirk an element of no small importance.

Alleged improper influence.

and added immensely to the difficulties of my position. Every farthing of public money placed in my hands has been completely accounted for. During the whole nine years I filled the office of Engineer-in-Chief I derived no personal profit or pecuniary advantage whatever. As a matter of fact I was an actual loser, as the burning of the Canadian Pacific Railway offices in 1873 or 1874 destroyed my private property in books, instruments and papers, valued at the time at a considerable amount. These losses are referred to in a letter to the Minister of Public Works dated February 7th, 1874. For the losses then sustained I received no compensation whatever, and I made no claim. The Commissioners were quite right in satisfying themselves with respect to my personal interest in Selkirk and the North-West generally, as the enquiry should set at rest any theories that may have existed in men's minds. I am glad the question has been asked, and I state most unhesitatingly that with respect to the Pacific Railway, my time, labour, and best intelligence and all the judgment I possess have been given from the first day to the last day of my service in the public interest, and with perhaps too much indifference to personal and pecuniary advantages. During the whole nine years I have filled the office, and have spent myself in endeavouring to establish this great national undertaking, I received no compensation, and I asked none. It was only after I ceased to be Engineer-in-Chief that the Government, unsolicited, sent me an Order-in-Council granting me \$30,000 for my services. I expressed no opinion as to the amount. I had made up my mind to accept whatever sum, if any, might be offered me, and I acted accordingly.

Witness devoted to Canadian Pacific Railway with too much indifference to personal advantage.

\$30,000 given him for his services.

22340. Is there any other evidence which you desire to give concerning your connection with this railway, or the ending of the connection? —I can give some little information with regard to the circumstances which led up to my ceasing to be Engineer-in-Chief, which I will be very happy to do. I would first wish to say, with regard to the appointments that have been made from time to time, the evidence that I have given was in answer to questions, and the facts are not always brought out by questions in the way that a witness would wish to give them. When the survey first began, the great difficulty was in finding capable men to do the work. All, or nearly all, with whom I was acquainted myself, were actually engaged in other works—many of them in connection with the Intercolonial Railway, and they could not be spared from that work until that service was completed. I did not, if I have done so—I did not mean to say that the Government in making appointments were desirous of appointing any but the most efficient men, and when I say the Government I mean any Administration that I had been acting under, and I have acted under three different Administrations during the survey of the Pacific Railway. Each Minister and each Member of the Government with whom I came in contact was desirous of getting the best men that could be had; but sometimes it was not possible, even if there were choice, to get the best men, on account of the pressure that came from Members of Parliament and others to have their friends or *protégés* appointed. I mention that simply for the purpose of stating that if inferior men were at any time selected by this Government or that Government, it was not done with the view of getting inferior men by any means; and, indeed, although there are some men on the survey not up to the work for which they were employed, I have great pleasure in saying that there are a great number of very efficient men whose friendship

Management. Remarks on appointments of officers.

Management.

I shall always remember with kind feelings, and who were as earnest as myself to carry out the undertaking in a creditable way, and who were as anxious as I was to do everything in the public interest.

22341. Do you intend to convey the idea that the anxiety of the different persons connected with the Government to get efficient men led to the best men being employed, and that if they had been selected by a private company that they would have been probably no more efficient?—I do not mean that. I mean a private company would be free from the difficulties that I have referred to with regard to the appointment of men.

A private company could accomplish the work more efficiently and at less cost than a Government.

Discontinuance of witness's connection with Railway

22342. Would they be able to accomplish the work more efficiently and at a less cost than the Government is able to do it, in your opinion?—Yes; I think so. I decidedly think so. I shall now answer the question as to the circumstances which led up to my removal from the office of Engineer-in-Chief, in the spring of 1880, and I will be obliged to read from letters. It is not an easy matter for me to explain the circumstances which led to my removal from the office of Engineer-in-Chief, because no reasons have been assigned to me by the Government, I can only draw my own inferences from the few facts which have come to my knowledge. I had no reason to think until early in 1880 that any member of the Government, or any prominent supporter of the Government, had the least unfriendly feeling towards me personally or officially, or had the least desire to change my position as a public servant. The first intimation I had of dissatisfaction was in February, 1880. I saw a memorandum from a gentleman who was not then, but has since entered the Cabinet. This memorandum was given to Sir John Macdonald by Senator Macpherson. It discussed the Pacific Railway, the Government policy in connection therewith, my own position, and found fault generally. It occurred to me that this memorandum was the outcome of the examination by a Committee of the Senate the previous winter, of which Mr. Macpherson was chairman; but it seemed only natural that he should feel chagrined not only with the Committee for reporting against his views, but likewise with myself, for not falling in with his way of thinking when I gave my evidence. Be that as it may, I felt that an explanation was necessary. I accordingly addressed a letter to the Minister of my Department for the information of the Government. I cannot furnish the Commissioners with Mr. Macpherson's memorandum, as it was returned, and I have kept no copy; but I shall be happy to read my own explanations:

“ CANADIAN PACIFIC RAILWAY,
“ OTTAWA, 9th February, 1880.

Letter to Sir Charles Tupper.

“ MY DEAR SIR CHARLES,—I am greatly obliged to you for allowing me to read the paper of the Hon. Mr. Macpherson on the Pacific Railway. It is not for me to defend this or that policy, but I feel called upon to offer some explanations on matters personal to myself.

“ Up to the time that British Columbia entered the Dominion, I had, for a series of years, laboured assiduously in connection (1st) with the surveys; (2nd) with the construction of the Intercolonial Railway. In the middle of the work in 1871, I was asked by the Government, through the then Minister of Public Works, the Hon. Mr. Langevin, to begin and carry on the Pacific Railway explorations. At first I declined, feeling that I had already more than sufficient work on my hands. Mr. Langevin, however, was pleased to say that the Government had great confidence in me; that he knew of no one else whom he could call upon, and he was good enough to press the new duty on me in such a kind and complimentary manner that my friends told me it was impossible for me to decline. With great hesitation I accepted the additional charge of the Pacific Railway, but once accepted, I determined to bring to bear on the double work (the Intercolonial and the Pacific) all the reserve energies of my mind and body that I could command. I, indeed,

Discontinuance
of witness's
connection
with Railway

Arduous charac-
ter of work,
consequent
injury to wit-
ness's health.

felt the weight of the responsibilities that were thrown upon me, and I laboured night and day in a manner which will never be known. Some time after I began to work double tides, I had the misfortune in two consecutive years (1872-73) to meet with serious accidents. By the first I came near terminating my life; by the second I was placed on crutches for six or seven months. During the whole of these periods, except when actually confined to bed, I never ceased to carry on my work, which I need not say was at times very arduous. As a consequence my general health suffered, and I was forced to seek for some respite. When the Intercolonial Railway was finished in 1876 an opportunity presented itself for this change. I asked for and obtained leave of absence for twelve months, making, as I thought, full provision for conducting operations on the Pacific Railway during my absence. I went to England so as to have as complete rest as possible, but twice during my absence I was recalled by the Government to attend to urgent duties which, it seemed, could not be performed without me. When I finally returned in 1878 I found my staff demoralized, and many things had been allowed to drift into a state of confusion. The perplexing difficulties I was then compelled to face have not yet been entirely overcome. These difficulties I need not here describe, it is enough that I should remind you that they were not of my making. I was in no way responsible for them, unless they were due in part to my absence, and it may be said that they would possibly not have arisen had I been at my post. My absence was, however, necessary. The rest I sought for and in part obtained, was absolutely needed as I was then, and indeed to some extent I am still, suffering from the effects of over-work.

"I am quite sure if Mr. Macpherson was aware of the circumstances, he would be the last man to charge me with neglect of or indifference to duty. I shall not make any boast of my services. I shall leave others to speak of what I have done. I may only point to the volumes of printed reports and to the still larger volumes of unprinted matter as a faint idea of my labours. This much I can say: I have devoted myself to the particular services upon which I have been engaged now for nearly seventeen years (and with but little intermission) with a deep earnestness of purpose. I have given ungrudgingly the best years and energies of my life. I have felt that I could only in this way, but serve my country, and this thought, be it right or wrong, has sustained me in difficulties and given me pleasure in overcoming them.

P ints to the
volumes of
printed reports,
&c., as giving a
faint idea of his
work.

"With regard to salary, a matter mentioned in the paper you have given me to read, I should offer this explanation: When I was appointed to the charge of the Pacific Railway, in 1871, I was then in receipt of \$4,800 per annum as Chief Engineer of the Intercolonial Railway. At that time the Minister received \$5,000 per annum, the difference being only \$200. It was felt that an officer should not receive more than a Minister, and to place an officer in this case, even on an equal footing in point of salary, by paying him \$200 per annum as engineer of the Pacific Railway, would be somewhat absurd. It was agreed that the question of compensation should therefore stand over, and this was the more readily concurred in by me, as I then, and have ever since, looked upon salary as secondary. I assumed the duty for the reasons I have above set forth, and I have laboured from then until now for the pleasure the work afforded me, confident in the belief that I was usefully engaged in my country's service. I trust I may continue to have the confidence of the Government, and that I shall have strength to perform my duty satisfactorily, at least, until a train can run through on Canadian territory from Lake Superior to Red River. When that time comes I shall be glad to retire, and if the services I may have rendered be considered of any value, then I shall cheerfully accept whatever compensation the Government may be pleased to offer.

Salary.

"Believe me, very sincerely yours,

"SANDFORD FLEMING.

"To Sir CHARLES TUPPER,
"Minister of Public Works."

I heard nothing more of any consequence until Parliament met. On 3rd of March speeches were delivered in the House of Commons in which my conduct as Engineer-in-Chief was assailed with some bitterness. The charges then made against me are specially referred to in a memorandum which I felt it necessary to prepare in my own defence. It was addressed to the Minister of the Department the 26th of March, 1880, and I now propose to submit its contents:

"CANADIAN PACIFIC RAILWAY,
"OFFICE OF THE ENGINEER-IN-CHIEF,
"OTTAWA, 26th March, 1880.

Memorandum
addressed to the
Minister of
Railways.

"(Memorandum.)

"On the 3rd March, grave charges were made in the House of Commons, against the writer, as Chief Engineer of the Canadian Pacific Railway, which have since been against witness.

**Discontinuance
of witness's
connection
with Railway**

published throughout the Dominion. These charges seriously affect his personal character and his professional reputation.

"A Member of the House of Commons has certainly the right to investigate the conduct of any public servant, if he deems it proper to do so. Equally, the party assailed, if wrongly accused, may claim to be heard in his justification.

**Position of a
Government
Engineer, and
course open to
him when
assailed.**

"An engineer is an executive officer of the Government, to whom the public interest is confided according to his rank and status. No charge can be more painful than that he has neglected his duties, or that he has failed honestly and with ability to consult the interests he has undertaken to protect

"It is obvious that, if called upon to vindicate his character from what he holds to be an unjust accusation, the only course open to an engineer, in the employ of the Government, so long as he holds his position, is to address his remonstrance to the Minister at the head of the Department.

"He cannot with propriety avail himself of the columns of the newspapers or of a magazine, neither can he publish a pamphlet in his vindication. To the mind of the writer it is still more objectionable to have recourse to a borrowed pen, and to get published anonymously what he holds inexpedient to state above his signature.

"The writer, therefore, respectfully asks leave to address the Minister on the subject of the charges made against him in Parliament.

**Charges against
witness formul-
ated.**

"They may be formulated:—That the writer has recommended an ill-judged and unwarranted site for the bridge-crossing of Red River; that he was long absent in England from his duties, during which time the railway work was unconsidered, and his responsibilities neglected; that the original estimates given for the work under contract have been greatly exceeded; that he has caused needless expenditure at Cross Lake on an improper location, and that he has permitted large sums of money to be carelessly wasted.

**Red River
Crossing.**

"The writer has submitted, at length, the reasons which have led him to recommend the location of the Red River bridge. They are set forth in his report to the Government, of 8th December, 1879, to be laid before Parliament. Subsequent enquiry having confirmed the facts, he cannot change or modify his opinions. He respectfully submits that, if the question be examined and the facts and circumstances be fully weighed, it will be found that his view of the case will be sustained, and his recommendation justified. It is known that the location recommended by him is not looked upon with favour in quarters and localities adversely interested; but his own convictions remain unchanged, and he holds it incumbent on him, in the general interest of the public, to adhere to the selection he has submitted, and to ask that the considerations which dictated it be fully examined.

"On this point of the censure directed against him, he begs leave respectfully to refer to his report to the Government, and to ask for it impartial consideration.

**Neglect of duty.
Large expendi-
ture.**

"He turns to the other issues which have been raised. The charge is unusually grave: that of having neglected his duty and allowed large sums of money to be squandered. An engineer is in no way answerable for the policy adopted by the Government in making contracts; but once a contract is entered into and placed in his hands, he is responsible to the Government, through the Minister of the Department, that it be honestly fulfilled. It is his duty to carry out and enforce its conditions, to see that the work is properly performed and full value given for the money paid. It is equally his duty to do justice to the contractor as to the public; indeed, to act as a judge between parties whose views of right are not always identical. It is, moreover, his duty to submit to the Minister any changes, in construction or otherwise, he may hold to be desirable, and, on obtaining the Minister's authority, to have them carried out.

"Between 1863 and 1871, the writer was Chief Engineer of the Intercolonial Railway. From 1871 to 1876, he filled the position of Engineer-in-Chief of both the Intercolonial and Canadian Pacific Railways. In the latter year, the Intercolonial was opened for traffic, and the writer ceased to act as Chief Engineer. At this date, most of the difficulties connected with the Canadian Pacific location had been solved. Two sections, easy of construction, had been placed under contract: No. 13, the first section west of Fort William, Lake Superior, thirty-three miles; No. 14, the first section east of Selkirk, Red River, seventy-seven miles.

**Health of
witness.**

"The writer's health had been much affected by his labours: his medical advisers counselled rest. He himself felt that abstinence from work was indispensable. He applied accordingly for twelve months leave of absence. So much a matter of necessity did this rest appear to himself that he had determined, should the leave of absence not be granted, to resign his position, a fact perfectly capable of being established.

"Before leaving, it was arranged that the senior assistant on the Pacific Railway staff in the writer's absence should assume his duties. Full confidence was felt in the ability, experience and reliability of that officer, and, on the writer's recommendation, the then Minister of the Department consented to the arrangement. That gentleman was placed in charge and he entered on his duties with the title of acting Chief Engineer.

**Neglect of duty.
Large expenditure.**

"The writer left for England. At that time sections 13 and 14 only were under construction. The work then performed was valued at: Section No. 13, \$127,353; section No. 14, \$102,140. Section No. 25 had been placed under contract as the writer was leaving, but no work had been executed. Six months afterwards the contract was signed for section No. 15.

"During his absence the writer was relieved from active direction of work, superintendence of details, and all the incidental duties appertaining to his office. Matters, however, connected with the railway were frequently brought to his notice, and formed the subject of correspondence.

"Twice he was recalled by the Government. His leave was thus temporarily set aside, and, in consequence, renewed and extended. Before six months had passed he was peremptorily summoned by the Minister to Ottawa. Leaving England in December, 1876, he remained in Canada until May following. In this period, independently of the other duties which engaged most of his time, the writer completed the voluminous report of 1877, which he had commenced in England.

Leave of absence broken in on.

"The leave of the writer was renewed, and he again left for England. He was again recalled, and so urgent was the summons that he started on a few days' notice. The consequence was that he was forced to neglect important private affairs, the arrangement of which necessitated his return to England.

"In October, 1878, he returned to Canada and resumed his duties. The acting Chief Engineer had, from July, 1876, held the position of principal executive officer of the Government to supervise the works under contract, to give directions to the engineering staff, to control the expenditure, and to issue proper certificates for work performed by the contractors.

"From July, 1876, to October, 1878, no charge was taken by the writer of details of work under construction, beyond replying to the points submitted to him and receiving the reports forwarded from time to time. The latter in no way presaged the difficulties which now attract public attention.

From July, 1876 to October, 1878, writer took no charge of details.

"On the return of the writer to his duties in the autumn of 1878, his attention was directed to the difference between the original quantities and the work returned as executed on sections Nos. 14, 15 and 25.

Discrepancy in quantities.

"Whatever the cause, it was plain that the original quantities had been greatly increased. No report of any such contingency had been made to him. The fact fell upon him as startling, from being unexpected, as it was alarming and unaccountable.

"He had never supposed that a result of this character was possible. Had he been in the country his duty would have led him to take means to keep down the expenditure, to amend the line where change was advantageous and possible, and if through any cause the quantities of work executed showed a tendency to over-run the estimate, his attention would have been at once directed to the subject, as progress sections and the monthly returns conveyed the unwelcome information.

"No time would have been lost in endeavouring to ascertain the cause of the difficulty, and steps would have been taken to rectify it.

"The original bills of quantities were made up without the exact data necessary for forming estimates with accuracy. They were prepared from the best information, by engineers who had charge of each particular survey. As there was great pressure to have the work placed under contract, and definite quantities were indispensable, the results were, to a certain extent assumed.

"Much of the line passes through muskegs and marshes. The surveys were mostly made in winter when the ground was frozen. This circumstance doubtless, in some cases, deceived the surveyors as to its character, and led them to mistake marsh and muskeg for firm earth. One thing is certain, the quantities published before tenders were invited made no claim to exactness. Their *prima facie* character establishes this fact beyond dispute. The amounts are almost invariably in round figures, such as 100,000 lineal feet or 1,000,000 cubic yards. At the same time, although estimated or rather assumed, specially to admit of a comparison of tenders by having the different prices applied to them, and the total amounts thus worked out, it was also supposed that if not approximately correct, they would at least not be greatly at variance with the actual results.

"It was, therefore, incomprehensible to the writer that the actual quantities should, in nearly every case, be so much greater than those originally assumed and printed. Making every allowance for imperfect data, misleading those who had made up the bills of quantities, for the frozen marshes having been considered to be solid ground and for other contingencies, in the writer's mind there was no satisfactory explanation for the extraordinary differences.

"When the discrepancy came under the writer's notice, he at once gave it his serious attention, and the difficulty, with all the circumstances connected with it was frequently and earnestly discussed with the Minister.

"It was not possible for the writer to accept the returns of the work executed and the certificates which had been issued. Accordingly he declined to grant any certificates whatever for what had been done during his absence, until the quantities were properly accounted for and irrefragably established as correct. He caused an inves-

Investigated but failed to obtain satisfactory explanation of excess.

**Large expenditure
Discrepancy in
quantities.**

tigation to be made into each case separately. He sent for those who had been engaged in the work to learn the course taken in carrying on operations, and the principle adopted in making measurements, and fully to satisfy himself as to the accuracy with which the quantities had been computed; but he failed to obtain any satisfactory information with regard to the excess of quantities.

"A re-measurement of the work on each section was, therefore, recommended by him—a course approved by the Minister.

"The value of the work certified as having been executed when the writer took the matter up, was as follows:—

On section 13, gross amount certified.....			\$ 331,978 00
" 14, " " 			583,742 00
" 15, " " 			1,151,975 57
" 25, " " 			1,180,800 00

"In the winter of 1876-77, during the writer's stay in Canada, he was called upon as senior officer, *pro forma*, to put his name to certificates which had been prepared and laid before him. Their accuracy was not investigated by him, as he had the fullest confidence in the returns submitted. These are the only certificates for which the writer is in any way responsible up to the time he resumed his duties. According to the certificates which he finds in the office, work to the value of \$2,539,181 has been executed in the interval, on the four sections in question.

"In the case of section 13, the writer was not called upon to take any action, as the work had been completed, the contract closed, and the money paid, before he returned to Canada.

Re-measurement of contract 14 and 25.

"A re-measurement of sections 14 and 25 has been made, but it does not verify and substantiate the previous returns. In consequence, the writer has been unable to confirm the certificates issued during his absence, for work reported as executed.

Contract No. 15.

"Section 15, and the circumstances connected with it, have formed the subject of a special report. The facts have been laid before the Minister. Errors in the system of measurement and classification of work have been rectified. Explicit rules have been laid down for future guidance. A verification survey to check measurements has been commenced. The whole contract has been placed on a new basis, under an Order-in-Council, dated 20th May, 1879, under which the work has since been carried on and payments made. No certificates have been issued by the writer since his return, except in accordance with its provisions.

When witness resumed the above mentioned four sections under construction; since, seven sections placed under construction; for the details of these last alone he thinks he can be held responsible.

"These four sections only had been under construction when the writer re-assumed his duties as Engineer-in-Chief; since then, seven additional sections, some of them very heavy, have been placed under contract. He has taken every means to prevent a repetition of similar difficulties. The precautions adopted may, in part, be understood by reference to the letters of instructions to the resident engineers, one of which is appended.* From October, 1878, the whole time of the writer, and his best efforts, have been given to the discharge of his duty. From that date every point of detail, more or less, has come under his personal cognizance, and for the results he holds himself answerable. This remark cannot, with justice, be applied to the period when he was on leave of absence, and he should not be identified with operations, over which he exercised no supervision, carried on during the time when, with the approval of the Government, he was absent from the Dominion.

* MEMORANDUM OF INSTRUCTIONS TO MR. W. T. JENNINGS, RESIDENT ENGINEER IN CHARGE OF SECTION 42, EXTENDING FROM EAGLE RIVER TO THE EASTERN END OF SECTION 15 NEAR RAT PORTAGE (KEEWATIN).

CANADIAN PACIFIC RAILWAY,
OFFICE OF THE ENGINEER-IN-CHIEF,
OTTAWA, 3rd June, 1879.

Memorandum.

The Hon. the Minister has appointed Mr. Jennings to the charge of contract No. 42, embracing all the works of construction required to complete the railway between Eagle River and the eastern end of section 15, near Rat Portage.

1. A copy of the contract entered into with Messrs. Fraser, Manning & Co., has been furnished Mr. Jennings. He has also been supplied with copies of the plans and profiles and all the documents relating to the work to be executed.

2. The undersigned has verbally communicated to Mr. Jennings his views with regard to the work and the manner it should be carried out. He has explained to Mr. Jennings the points where changes may be made, and has indicated on the profile some alterations that suggest themselves in the grade line. These changes are suggested with the view of reducing and expediting the work, the contractors being limited to time.

3. Mr. Jennings is desired at the earliest possible period to direct his attention to any possible change that may be made in the alignment, whereby the work will be decreased without increasing the curvature or gradients.

Railway Location.

"The question has been raised that the writer caused needless expenditure by an ill-judged location of the line on section 15, in the neighbourhood of Cross Lake.

"There are points between the terminus on Lake Superior and the prairie region which govern the whole location. The geographical position of the Lake of the Woods on the international boundary, defines Keewatin, at the outlet of the lake, to be one of these points. Selkirk, in the writer's view, is clearly another. The problem was to connect these points by the shortest, best and cheapest route. With the exception of a limited area of prairie or thinly wooded country near Selkirk, the whole distance is forest. A great extent of the surface is rocky, broken and rugged, with many long, narrow lakes, some of which it is impossible to avoid. Cross Lake, met some thirty-six miles west of Keewatin, is of this class.

Was location of contract 15 near Cross Lake a mistake.

The undersigned directs the attention of Mr. Jennings to the importance of, in no case exceeding the rates of gradients and curvatures, as follows:—

Ascending East.

On tangents and $1\frac{1}{2}^{\circ}$	curves, gradients not to exceed	.50	per 100.
" " 2°	" " " "	.45	" "
" " 3°	" " " "	.40	" "
" " 4°	" " " "	.35	" "

Ascending Westerly.

On tangents and $1\frac{1}{2}^{\circ}$	curves, gradients not to exceed	1.00	per 100.
" " 2°	" " " "	.90	" "
" " 3°	" " " "	.80	" "
" " 4°	" " " "	.70	" "

While insisting that in no case these gradients shall be exceeded, the Chief Engineer directs the earnest attention of Mr. Jennings to the very great importance of keeping down the cost of the work, and he trusts that wherever it be possible, without lowering the character of the engineering features of the line, Mr. Jennings will studiously avoid incurring any expenditure beyond that absolutely required.

4. The undersigned recognizes the peculiar difficulties which will be met by the contractors in this section; not the least serious being the inaccessibility of the country through which the line is to be constructed, and he foresees the great importance to them of having the rail track extended as far as possible easterly from Rat Portage, the moment the rails are laid throughout section 15. From two to five miles east of Rat Portage the profile shows some of the heaviest work on the whole section, after which for several miles the work is comparatively light.

Fortunately the difficult portion could easily be got over by adopting, temporarily, a steep grade, as indicated in the accompanying profile. Mr. Jennings is authorized to make this suggestion to the contractors, with the understanding that the undersigned will concur in its adoption, should the contractors desire it in their own interest. The line must, thereafter, be constructed with the permanent gradient before the completion of the contract, and the contractors will be paid for all now or hereafter executed, which forms any part of the permanent work. The cost of temporary track-laying, and the small amount of excavation of parts A, B, C, D, &c., or any work of a merely temporary character, not necessary in the permanent works, will have to be borne by themselves.

5. For the guidance of Mr. Jennings, it may be mentioned that on some of the sections which have been under construction the contractors have found it convenient, with the modern explosives, to blast out rock cuttings considerably beyond the slope lines, as defined on the specifications. The Engineer-in-Chief directs that only the excavation within the slope lines be returned as rock. The material beyond the slope lines, if placed in embankments, may be returned and paid for as earth; but if wasted it must not be returned as excavation under any class.

6. It may further be mentioned, for the information of Mr. Jennings, that on some sections under construction, when muskegs prevail and the embankments have been formed from side borrowing-pits and ditches, serious difficulties have arisen. The material so borrowed is reported to be, in many cases, vegetable matter of a spongy nature, holding much water, and when dry and compressed by a superincumbent weight, to have little solidity; it is consequently, unfit to be used in the formation of earth embankment. The undersigned accordingly disapproves of its use.

7. There is always more or less difficulty in forming embankments across muskegs or marshes. In some cases where a proper out-fall is available, so that ditches would have the effect of draining and consolidating the ground, it is advisable to form them parallel to the line of railway. But when the ditches, after being formed would simply remain full of stagnant water, their formation is of doubtful expediency, and under such circumstances, ditches are of little value. Indeed, in some special localities they may be a positive injury, and in all such cases it is advisable not to form them, but rather resort to a judicious use of the logging and brushing provided for under the contract.

This being done a thin covering of earth to form a foundation and bed for the ties may be added. Track may then be laid and thus allow material to be brought from any convenient distance by train. But if this expedient be resorted to, it will be necessary to bed the track sufficiently even and solid to prevent the rails from being bent or injured in any way.

Railway Location.

"The country here, and for a long distance, is exceedingly rough, and when the surveys commenced it was a wilderness well nigh impenetrable. It was necessary, however, to find a railway line through it, not simply a line over which trains could be taken, whatever the cost of working them, but a railway which could be operated cheaply and which would admit of the conveyance of farm produce to the eastern markets at the lowest rates, a result only to be attained by limiting the gradients.

Importance of easy grades running easterly.

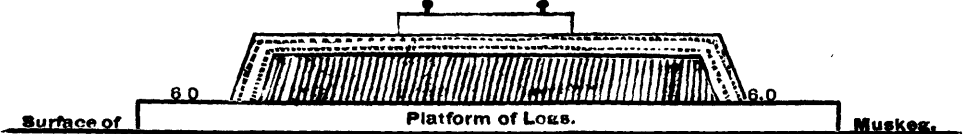
"This view has governed the writer from the earliest inception of the undertaking. In his published report of January, 1874, he set forth the paramount importance of finding a location with the easiest possible gradients running easterly. He directed attention to it again in his report of 1877, and again in 1879."

8. These several points are brought to the attention of Mr. Jennings, but he will himself determine the best course to be pursued when he has specially examined each locality, and become acquainted with the depth of the muskeg, and all the circumstances. In arriving at a decision, Mr. Jennings will take into consideration the question of haul, for which a price is provided, and he will see that in no case the price of earth and haul together (when material is brought by train) shall exceed the price of ballast, as in such cases ballast would probably be the best and cheapest material with which to form the embankment.

9. There may be some exceptional case where it may not be impossible for the contractors to procure suitable material for the road-bed and where it would be a very great advantage to them and expedite their operations, if they were permitted to use in part the spongy material found in muskegs. This shall only be allowed sparingly, and in all cases when used, the solid contents of the spongy matter only is to be paid for. A log platform (clause 12) must invariably be laid on the surface before any of the muskeg material is deposited, and arrangements must be made to measure the solid cubic contents in the embankment after the water has had time to drain out of it. On these conditions as to measurement and payment and on these only, will the undersigned approve of the use in any form, of this peculiar material.

Mr. Jennings will be good enough to inform the contractors accordingly, and obtain their written acceptance of these conditions, when the material is placed in embankments. Wherever it be deemed expedient to allow the use of muskeg material, the whole must be covered over with good earth; in no case should the coating of sand, clay or gravel be less than 12 inches under formation level.

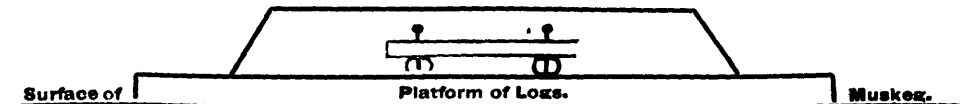
(Sketch A.)



As a rule the surface of the muskeg should not be broken by ditches or borrowing-pits within fifty feet of the centre line.

10. When it becomes expedient to form the embankments by train, good-sized poles, or small trees "spotted" on the side, to average say six inches thick, should invariably be laid longitudinally under the ties. These poles should break joint, and every means taken to render the track reasonably solid and secure to prevent injury to rails. See sketch B.

(Sketch B.)



10. The undersigned has given careful consideration to the question of rock borrowing, referred to in the specification, and he has arrived at the conclusion that it will not be expedient to resort to the process of excavating rock for forming any portions of embankments, except so far as the embankments may be formed by material from "rock line cuttings."

The contractors will, accordingly, be relieved of this expensive and troublesome class of work referred to in clause 98 of the specification.

11. Mr. Jennings is probably aware that on section 15, where the railway is carried across lakes and ponds, the material from rock line cuttings has been deposited in two parallel lines along the toe of the slopes. This was done subsequent to the date of the contract with a special purpose in view, but it involves a good deal of extra trouble and expense to the contractors, without corresponding advantages, and as the undersigned recognizes the peculiar difficulties these contractors have to overcome, and the importance in the public interest of assisting them in every legitimate way, and of avoiding unnecessary outlay, he does not insist upon the same plan of construction being followed on this contract.

The contractors may be allowed to finish the embankments in the usual way, allowing the material of whatever kind to find its proper natural slope, and in the case of the slopes being formed of soft

Railway Location.

"EXTRACTS from the reports of the Engineer-in-Chief in reference to the adoption of light gradients in connection with the question of cheap transportation from the prairie region to Lake Superior.

(From the Report of January, 1874.)

"One of the questions which will undoubtedly force itself on public attention when the prairie region begins to raise a surplus for exportation, will be the cheap transportation of products to the east. Looking to this view of the question, the importance of a location which will secure the slightest gradients in an easterly direction is manifest.

When prairie region raises surplus for exportation one of the questions will be cheap transportation to the east.

material, in ponds or lakes, they will be protected by rip-rap, a few feet above and below water level. The rip-rap must be provided after the embankment has to some extent consolidated.

12. Attention should at once be given to the volume of all streams crossed by the railway, the necessity for the structures proposed to be erected, and their sufficiency and character.

Mr. Jennings will report from time to time such improvements or suggestions in the mode of construction as may appear advisable.

13. The Engineer-in-Chief encloses printed general instructions 1 to 5 for the information of Mr. Jennings on the general guidance of the staff under him. These are in force as far as applicable. Special attention is directed to these general instructions.

The object in view is considered of great importance. Not the least important is to secure a complete historical record of the progress of the work under the contract, with details of every event noticed as it transpires. The purveyor branch, referred to in instructions No. 2, is, however, abolished, and Mr. Jennings will himself be held responsible for procuring supplies and the proper account of all expenditure. It is the intention of the undersigned to apply for the authority of the Minister to make a money allowance in lieu of rations to members of the staff. In the meantime it is expedient to carry on the old system. Mr. Jennings will, however, be good enough and report if it will be practicable to change the system, say on 1st September next.

14. While the Engineer-in-Chief refers Mr. Jennings to the rules established by the Department, with respect to the making of payments, the keeping of accounts and the character of the vouchers required by the audit, he directs his attention to the exercise of proper economy in all matters of expenditure. Any food supplies obtained must be good and sufficient, and procured at reasonable prices.

15. While exercising prudence and forethought as to the wants of the staff, and the supply of good and sufficient provisions, all extravagance and waste and all unnecessary expense must be avoided.

16. The following staff has been selected to assist Mr. Jennings in carrying out these instructions:—

17. The Engineer-in-Chief requests that Mr. Jennings will issue a circular letter to the division and assistant engineers, informing them that all orders or communications in writing made to the contractors, respecting the works, must pass through his hands and be signed by him alone, and Mr. Jennings will be good enough to report all orders so given and draw special attention to any matters of importance.

18. As far as can be foreseen, ample allowance has been made in the bill of works for every description of work required under the contract. Should it become expedient, as operations proceed, to execute any class of work for which no provision is made, Mr. Jennings' attention is directed to the 5th clause of the contract, which stipulates that no additional work shall be performed unless the price to be paid for the same shall have been previously fixed by the Minister in writing.

The necessity for any additional work must therefore be reported to the Engineer-in-Chief, and if approved, permission obtained as above for its performance.

19. Mr. Jennings will arrange that the monthly measurements shall be completed on or before the last day of each month, so that he may be able to make up and transmit the estimates to this office as early thereafter as practicable. All monthly estimates are to be signed by Mr. Jennings, and forwarded in triplicate.

20. In addition to the weekly progress reports a short report should accompany the monthly estimates, referring to any special features of the work done during the month, the progress being made, the length of grading done or track laid, &c.

21. The Engineer-in-Chief impresses upon Mr. Jennings the necessity of holding the division engineers, as well as their assistants, personally responsible for the accuracy of returns of work done. It will not always be practicable for the division engineers in person to examine the whole work every month, but they should personally go over a portion of their division each month, the sub-division engineers sending their figures to them by telegraph or otherwise. The succeeding month the division engineers will be able to measure the remaining portion, and by this means they will test the accuracy of the whole as the work goes on, and become familiar with all details, with respect to which they are responsible.

22. Mr. Jennings is furnished with a copy of the contract and every plan, profile and document relating to the works under his charge. The undersigned looks to Mr. Jennings with confidence, believing that he will spare no efforts to have these instructions, and the works to which they refer, satisfactorily carried out, and that he will earnestly endeavour to have everything done with strict regard to economy.

SANDFORD FLEMING,
Engineer-in-Chief.

Stallway Location.

"The gradients and allignments of a railway have much to do with its capacity for business, and the cost of working it. It is well known that by attention to these features in locating a line, it is quite possible, in some cases, to double the transporting capacity of a railway and very largely reduce the cost of conveying freight over it.

"That portion of the Canadian Pacific Railway between Red River and the navigable waters of Lake Superior, is precisely one of those cases where the utmost attention should be paid to its engineering features. The reduction of the cost of transportation on this section to the lowest figure is a question which affects the future of the country, as upon it to a large extent depends the settlement of the western prairies.

"The more this portion of the railway can be made to convey cheaply the products of the soil to the navigation of the St. Lawrence, the more will the field be extended within which farming operations can be carried on with profit on the fertile plains.

Between Manitoba and Lake Superior easterly, ascending gradients twenty-six feet to the mile to be had.

"The information obtained suggests that it will be possible to secure maximum easterly ascending gradients between Manitoba and Lake Superior, within the limit of twenty-six feet to the mile, a maximum not half so great as that which obtains on the majority of the railways on the continent.

Considers best at first to construct the cheapest possible line.

"I think the line should be located so as to have the best possible allignment, with no heavier gradients than the maximum referred to. But the importance of securing the benefits of an unbroken steam communication at the earliest moment are so great that I consider that it would be advisable, in the first instance, to construct the cheapest possible line. While adhering to the permanent location in the main, I would, with a view of accomplishing the desired object, recommend the construction of a cheap temporary line, avoiding for the present all costly permanent works that would retard its completion. In order to gain access to the country as speedily and cheaply as possible, it might, indeed, become necessary to overcome special difficulties by adopting temporarily, for short distances, deviations from the true location with heavy undulating gradients and sharp curvature. I have no reason, however, to think that this expedient would frequently be required. I am satisfied that for the greater part of the distance between Lake Superior and Manitoba the permanent location may be substantially adhered to." (Pages 32, 33.)

(From the Report of February, 1877.)

Rendering the eastern section of railway available for cheap transportation would facilitate the population of the prairie region.

"It has been held from the first that the successful occupation of the prairie region and the extent to which it may become thickly populated will, in a great measure, be governed by the capability of the line to Lake Superior to carry cheaply the products of the soil. The success of the railway itself must be determined by the number of inhabitants which can be established in the country, and the degree of prosperity of the population will be influenced in no narrow limit by the character of the outlet for the products of their industry. The more, therefore, that the eastern section of the railway can be rendered available for cheap transportation the more rapidly will the prairie region become populated, and the more speedily will the line become self-sustaining.

Maximum gradients between Red River and Lake Superior.

"I have felt it my duty to regard these views as of paramount importance in the location of the line between the prairie region and Lake Superior. Accordingly, every effort has been made to discover the shortest line with the lightest possible gradients and easiest curvature, especially in the direction which heavy traffic will take towards the Atlantic sea-board.

"On the sections placed under contract from Red River to Keewatin, 114 miles, and from English River to Fort William, 113 miles, the maximum gradients are as follows:—

<i>Ascending East.</i>		Per 100.	Per mile.
On tangents and 1½° curves, equal to 3,820 feet radius		0.50	26.40 feet.
" " 2° " " 2,865 "		0.45	23.78 "
" " 3° " " 1,910 "		0.40	21.12 "
" " 4° " " 1,433 "		0.35	18.48 "

<i>Ascending West.</i>		Per 100.	Per mile.
On tangents and 1½° curves, equal to 3,820 feet radius		1.00	52.80 feet.
" " 2° " " 2,865 "		0.90	47.52 "
" " 3° " " 1,910 "		0.80	42.24 "
" " 4° " " 1,433 "		0.70	36.96 "

"On the remaining distance to be placed under contract, between Keewatin and English River, 183 miles, equally easy gradients have not been as yet, at every point, secured. At the few exceptional points the location will, however, be revised, and I have confident expectations that all the gradients will be reduced to the same standard, without materially increasing the cost of the works

Railway Location.

"Thus, there will be no impediment to the Pacific Railway carrying products from the heart of the continent to Lake Superior at a lower rate per mile than those now obtaining on the leading railways already in operation (Pages 81, 82) . . ."

"I have described the efforts that have been made to obtain a line with the easiest possible gradients, from the prairie region to the navigable waters of the St. Lawrence, and the paramount importance of this feature. . . ."

"Cheapness of transportation is thus, to a certain extent, assured—an important element in facilitating the prosperous settlement of the fertile territory in the interior." (Pages 85, 86.)

(From the Report of April, 1879.)

"I have always attached great importance to the endeavour to secure the best location attainable for the railway. I have elsewhere described the efforts which have been made from the commencement of the survey to obtain a line favourable for cheap transportation."

"The whole of the railway between Fort William and Selkirk, in length 410 miles, is now under contract. It is with no little satisfaction that I am enabled to point to a table of the gradients which have been definitely established in this length. Under the contracts which have been entered into, these favourable gradients are to be carried into execution, without having recourse to the temporary expedients which I thought necessary to suggest five years ago:

SUMMARY OF GRADIENTS—FORT WILLIAM TO SELKIRK.

		<i>Ascending Easterly.</i>		
		Feet per Mile.	No. of Miles.	
Rise	10 to 20 percent	About 5 to 10	38 51	
"	20 " 30 "	" 10 " 16	17 11	
"	30 " 40 "	" 16 " 21	42 97	
"	40 " 50 "	" 21 " 26 4	80 11	178 71
Level			108 06	108 06

Summary of gradients.

		<i>Ascending Westerly.</i>		
		Feet per Mile.	No. of Miles.	
Rise	10 to 20 percent	About 5 to 10	28 51	
"	20 " 30 "	" 10 " 16	10 91	
"	30 " 40 "	" 16 " 21	9 74	
"	40 " 50 "	" 21 " 26	12 83	
"	50 " 60 "	" 26 " 32	6 82	
"	60 " 70 "	" 32 " 37	10 65	
"	70 " 80 "	" 37 " 42	12 76	
"	80 " 1 00 "	" 42 " 52 8	31 01	123 23
Total miles			410 00	410 00

"In determining the gradients the rule has been laid down to equate them with the curvature, so that when sharp curves were called for by the physical features of the country, the inclinations of the line would, in those cases, be proportionately reduced.

"The practical effect of a sharp curve on a maximum gradient is to make the gradient heavier by reducing the effective power of a locomotive making the ascent, thus preventing the passage of full-loaded trains over the line. The object has been, whatever the curvature, to secure a degree of inclination which in no case would exceed, on tangents, 26 4 feet per mile ascending easterly, or in the direction of heavy traffic. The contract profiles of the line over the 410 miles from Fort William to Selkirk, establishes that this object has been substantially secured. Only at one point (eighteen miles out of Fort William) has the locating engineer neglected to enforce this rule. I greatly regret that such is the case, as it will involve an expenditure to remedy the defect greater than would have been called for in the first place, when the cost would have been comparatively trifling.

Rule in determining gradients to equate them with the curvature.

Curves and grades.

"With the exception referred to corrected, the portion of the Pacific Railway between Lake Superior and Manitoba is thus finally established with extremely favourable engineering features, and it may be claimed that, when completed under existing contracts, it will be available for conveying the products of the soil from the prairie region to Lake Superior at the cheapest possible rates.

"As this portion of the Pacific Railway must, for a long time to come, form the great outlet of much of the prairie region, the favourable character for cheap transportation which has been secured for it cannot be over-rated; indeed, upon this important condition very largely depends the successful settlement of the vast fertile plains and the permanent advantage of the future settlers." (Pages 18-21.)

Railway Location.

"This principle has been constantly kept in prominence, and its importance has been generally admitted. It has been frequently brought forward during the last six years. The writer does not know any instance of a public man having protested against it, or of any newspaper having taken exception to it.

Cross Lake.

"Although a great extent of the country between Lake Superior and the Red River is very rugged, the general level over long distances is not diversified. There are no great elevations or depressions to control the location and enforce the introduction of heavy gradients. Cross Lake is probably the only place on the whole 410 miles where any saving worthy of consideration could have been effected by a departure from the principle of light gradients, which it was found possible to apply generally.

"In the neighbourhood of Cross Lake a number of lines were surveyed. Ultimately the choice was narrowed to two lines, connecting common points east and west of Cross Lake, about six miles apart. No. 1 crossed the lake at a high level and gave the desired easy gradients, none of which exceeded a rise of twenty-six feet per mile, and the longest being for about one mile. No. 2 crossed the lake at another place on a lower level, but it involved a continuous ascent of two miles and three-quarters on sharp curves with a rise of forty-four feet per mile. The lake at the crossing of No. 1 is 600 feet wide; at that of No. 2 fully 900 feet; for five miles east of the lake the work is heavier on No. 2 than on No. 1, while at the lake, and for one mile west of it, the work is considerably the heaviest on No. 1. Although No. 2 would, upon the whole, cost less in the first place, No. 1 would undoubtedly, in the end, prove by far the most economical. After full consideration, line No. 1 was selected, and it is on this line that construction is now being carried on.

"The writer respectfully submits that the line which conforms with the policy of successive Ministers, and with the prevailing faith of the public mind, that on the railway between Manitoba and Lake Superior all gradients ascending eastward should be kept within the established limit, was the only one for selection.

"It was according to this principle that the location was first made, and the writer respectfully submits that there is no act of his in connection with the Canadian Pacific Railway which should claim higher appreciation than his advocacy of the principle, and his constant efforts from first to last to secure to the country a line with the lightest possible gradients between Red River and Lake Superior.

Contract is signed six months after witness left for England.

"It was six months after he left for England that the contract for section 15 was signed. As a matter of course, before the heavy work at Cross Lake was commenced, nothing should have been left undone to reduce its magnitude by revising and perfecting the location, and by every possible means. When the writer resumed his duties the work was in progress, and it was too late to make any change at this point, even if a change at an earlier stage had been desirable or possible.

Submits six propositions.

"The writer believes that he has established that the censures which have been directed against him are not warranted by the facts, and he respectfully submits:

"1. That he has not unwisely advised the Government with respect to the bridging of Red River.

"2. That he has not absented himself from his duties without authority and without cause.

"3. That he has not neglected his responsibilities, or subjected to injury the interests entrusted to him.

"4. That he is in no way to blame for the original quantities being exceeded, and the cost of the work increased on the sections in question.

"5. That he has not caused needless expenditure at Cross Lake on an improper location.

"6. That he has not allowed public money to be carelessly wasted; but that by every means in his power, he has endeavoured to control the expenditure on the work, and that he has earnestly endeavoured in all respects faithfully to discharge the duties of his position.

"The writer trusts that the urgency of the circumstances which have called for this memorandum will be held by the Minister of Railways and Canals sufficient justification for submitting in this form the facts which it sets forth.

"SANDFORD FLEMING,
"Engineer-in-Chief."

Witness's interview with Minister relative to charges made against him.

When I handed this memorandum, vindicating my character, to the Minister, I had the strongest assurance from him that it was not necessary, as far as he and the Government as a body were concerned; that they had the highest opinion of me as a public officer, and never had more confidence in me than they then had. He did not conceal from me, however, that there was an outside clamour into which political feeling entered, which was embarrassing to the Government. I expressed to the Minister my great surprise and very great disappointment to discover that I was in any way obnoxious to a single public

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man who had any weight as a Government supporter, even to any of those who were disposed to look at every person and thing from their own stand-point. I expressed my great regret that the services I had so faithfully and zealously endeavoured to render should be so unappreciated by any representative of the people whom I served, and I told him that I would not allow myself to be the least cause of embarrassment; that I would place myself in his hands; my only wish being to serve the Government; and that if I could best serve the Government by ceasing to act as a public servant, in that event I would willingly give up my office and be relieved of my duties and responsibilities. Soon after this I learned that the Government, yielding to pressure, promised, at a caucus of supporters, to offer me the position of consulting engineer instead of Chief Engineer, and to appoint this Royal Commission to enquire into all matters connected with the Pacific Railway. Subsequently I received a letter dated 3rd of June from the Secretary of the Department of Railways and Canals, enclosing an Order-in-Council appointing me to the position combining the offices of Consulting Engineer for the Pacific Railway and Chief Engineer for the Intercolonial Railway, with a salary of \$6,000 per annum. I shall submit as evidence the following documents, which I now wish to read:—

Offered the
office of Consulting
Engineer for
the Canadian
Pacific Railway,
and that of Engi-
neer-in-Chief for
the Intercolonial.

22343. If you will please name them to the reporter we will insert them in full in the printed evidence: as we have already copies before us it will answer just as well to do it in this way as if you read them yourself?—First, a letter from the Secretary of the Department of Railways and Canals enclosing an Order-in-Council appointing Mr. Sandford Fleming to a position combining the offices of Consulting Engineer for the Pacific Railway and Chief Engineer for the Intercolonial Railway; second, copy of the report of the Committee of the Honourable the Privy Council, approved by His Excellency the Governor-General, of the 22nd of May, 1880; third, a letter to the Hon. Minister of Railways and Canals from Mr. Sandford Fleming, submitting his reasons for declining the new position assigned to him; fourth, a letter from the Hon. the Minister of Railways and Canals, acknowledging the receipt of letter from Mr. Sandford Fleming declining to accept the position of Consulting Engineer of the Pacific Railway and Chief Engineer of the Intercolonial Railway; fifth, Mr. Sandford Fleming's valedictory to the staff dated 1st July, 1880.

Correspondence
with reference to
witness's discon-
tinuance to be
Chief Engineer.

"LETTERS from the Secretary of the Department of Railways and Canals enclosing an Order-in-Council appointing Mr. Sandford Fleming to a position combining the offices of Consulting Engineer for the Canadian Pacific Railway and Chief Engineer of the Intercolonial Railway:

Braun to
Fleming.

" DEPARTMENT OF RAILWAYS AND CANALS, CANADA,
" OTTAWA, 3rd June, 1880.

"SIR,—I am directed to enclose for your information a copy of an Order-in-Council, dated the 22nd ultimo, appointing you Consulting Engineer for the Canadian Pacific Railway and Chief Engineer of the Intercolonial.

"I am, Sir,

"Your obedient servant,

" F. BRAUN,

"Secretary."

" SANDFORD FLEMING, Esq. :

"COPY of a Report of a Committee of the Honourable the Privy Council, approved by His Excellency the Governor-General in Council, on the 22nd of May, 1880:

"On a memorandum dated 11th May, 1880, from the Honourable the Minister of Railways and Canals, having reference to the Intercolonial Railway, stating that a considerable number of suits brought against the Government by the contractors have

Order-in-Council
appointing him
Consulting Engi-
neer on Canadian
Pacific Railway,
and Engineer-in-
Chief of the
Intercolonial.

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of witness's
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with Railway**

been left undecided, that it would be a very difficult matter for any one, except the engineer who was connected with the work from its inception, to satisfactorily perform the service of finally adjusting and settling such claims, and recommending that Mr. Sandford Fleming, formerly Chief Engineer on said railway, be relieved from the duties and responsibilities connected with the office of Engineer-in-Chief of the Pacific Railway, and be re-appointed Chief Engineer of the Intercolonial Railway, to investigate the unsettled claims which have arisen in connection with that undertaking upon which no judicial decision has been given, and no report on each case to the Department of Railways and Canals :

"The Minister considers it important that he should continue to have the benefit of Mr. Fleming's professional skill and judgment in important matters connected with the construction of the Pacific Railway; he, therefore, recommends that that gentleman be retained as Consulting Engineer for that work, for the purpose of affording advice and assistance in that capacity to the Minister and officers of the Department.

"The Minister further recommends that Mr. Fleming be paid a salary of \$6,000 per annum, while discharging the combined duties of Consulting Engineer of the Canadian Pacific Railway and Chief Engineer of the Intercolonial Railway.

"The Committee submit the above recommendations for Your Excellency's approval.

"Certified.

(Signed) "J. O. COTÉ,
"Clerk Privy Council."

"LETTER to the Honourable the Minister of Railways and Canals, from Mr. Sandford Fleming, submitting reasons for declining the new position assigned to him.

"OTTAWA, 7th June, 1880.

"The Hon. Sir CHARLES TUPPER, K. O. M. G.,
"Minister of Railways and Canals, Ottawa :

S. Fleming to Sir
Charles Tupper,
declining the
new position.

"SIR,—The Order-in-Council of the 2nd May has been communicated to me by the Secretary in a letter dated the 3rd inst.

"By it I am relieved of the active duties and responsibilities of Engineer-in-Chief of the Pacific Railway, and appointed Consulting Engineer. I am named Chief Engineer of the Intercolonial Railway to investigate the unsettled claims that have arisen during construction.

"In the nine years I have acted as Engineer-in-Chief of the Pacific Railway, I have given my best efforts to carry out the instructions and wishes of the Government; my labours have frequently been harassing, but I have exerted myself to the utmost of my power to advance the work, and I have done all I could to promote the general interests of the Dominion in connection therewith.

"At this stage in the progress of the undertaking, I may recount what has been accomplished. The question of practicability with the difficult problem of route has been successfully solved.

"The most exacting labour imposed upon the Chief Engineer has been performed. Generally speaking, the whole design of the railway and its multitudinous works have been considered; difficulties overcome; details arranged; plans prepared; specifications made; contracts formed; modes of procedure established; operations for carrying on the works systematized, and instructions to the various executive officers issued and put in force. So much having been designed and organized, the duty remaining consists chiefly in general supervision, and carrying out what has been arranged and determined. I can, therefore, relinquish the position I have so long held with a feeling of confidence for the future, and although difficulties which no foresight can guard against, may present themselves, I am justified in saying that every contingency that may be anticipated has been considered, and, as far as practicable, provided for.

"Having from its inception been so actively engaged in connection with the undertaking, and in forming and maturing the organization for carrying it to completion, I shall never cease to take a deep interest in the great work, and I will always be willing and ready to give my advice, and render all the service in my power towards the establishment of the railway system to the Pacific.

"But my nomination to investigate the unsettled claims which have arisen in the construction of the Intercolonial Railway, places me in a position as embarrassing as it is unwelcome. The service is not strictly of an engineering character, and it could scarcely be possible to select a duty more distasteful for me to perform, or one for which, with my antecedents in the matter of these claims, I appear less fitted to act.

"The difficulties now to be investigated and settled are due mainly to the adoption of a policy entirely at variance with the views I held, and the recommendations made by me when Chief Engineer of the Intercolonial Railway some years ago. They have arisen through the disregard of the earnest and repeated warnings which I gave in letters, official and unofficial, addressed to the head of the Government during the early stages of construction. I respectfully submit, therefore, that I am not the person to make the investigation. Whatever decision I might give, or whatever report I might

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of witness's
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make, the party to whom it would be adverse would be in the position to challenge it as the result of prejudice or feeling, and to insist that it was adopted to fit in with opinions previously expressed. The service proposed to be assigned is so full of complications that I can foresee it will be one utterly impossible for me to perform with any hope of giving satisfaction in any quarter; however just my decision, I will be exposed to the charge in Parliament, and in the press, that it has been my aim and object to sustain my previously expressed theories and opinions.

"The Government likewise cannot fail to recognize that in a matter of such importance, involving the settlement of claims amounting to several millions of dollars, all ground for hostile criticism should be avoided.

"My sense of duty has always led me to serve the Government as best I could in every position in which I have been placed. In this instance, I feel it a duty to point out that no good result can be attained from deputing me to attempt the settlement of the Intercolonial Railway claims, and that it does not appear to me expedient that I should enter upon the investigation.

"In declining this duty, I am aware that I will be terminating my connection with the great railway works of the Dominion, to which I have given the best seventeen years of my life in the responsible position of Chief Engineer.

"It will especially be painful for me to separate myself from the Pacific Railway in its present condition, but the terms of the Order-in-Council leave me no alternative.

"Accordingly, for the reasons set forth, I have respectfully to ask the Government to allow me to decline the new position assigned to me.

"I have the honour to be, Sir,

"Your obedient servant

(Signed)

"SANDFORD FLEMING."

"LETTER from the Hon. the Minister of Railways and Canals, acknowledging the receipt of letter from Mr. Sandford Fleming declining to accept the position of Consulting Engineer of the Canadian Pacific Railway and Chief Engineer of the Intercolonial Railway.

"OFFICE OF THE MINISTER OF RAILWAYS AND CANALS, CANADA,

"OTTAWA, 10th June, 1880.

"MY DEAR SIR,—I have to acknowledge the receipt of your letter of the 7th inst. declining for reasons therein stated to accept the office of Consulting Engineer of the Canadian Pacific Railway and Chief Engineer of the Intercolonial Railway, which will be duly communicated to my colleagues. Entertaining as I do the highest estimate of your ability and integrity, I cannot but express my great regret that you have not felt it consistent with your duty to accept the position to which you had been appointed.

Sir Charles
Tupper to S.
Fleming.

"Wishing you every success and happiness in the future,

"I remain, yours faithfully,

"CHARLES TUPPER.

"SANDFORD FLEMING, Esq., C.E., C.M.G."

"OTTAWA, 1st July, 1880.

"To the Members of the Engineering Staff and other Officers :

"You will learn from the documents appended, published by permission, that I am no longer in the Government service.

"For the past seventeen years I have served under successive Administrations as Engineer-in-Chief of important public works; first, the Intercolonial Railway, and, more recently, the Pacific Railway. I cannot cease to act, as I have hitherto done, without thinking of my past relationship with the many who have aided me, and I cannot retire from the position I have so long held without bidding farewell to those with whom I have been associated.

"In undertakings so gigantic—involving questions so complicated—it is not possible to avoid differences of opinion and such difficulties as are incident thereto. But these difficulties have been exceptionally few, and they have been far more than compensated by the exceedingly agreeable relations which have generally prevailed; by the genuine satisfaction which has arisen from the performance of duty, and by the engrossing character of the work itself.

"As the head of the engineering staff, to whom Government has looked for opinions and reports on all questions, as the officer held responsible for the direction of every operation and the organization of every detail from the first explorations to the present time, it is with peculiar regret that I break my connection with

Witness's fare-
well to his staff;

**Discontinuance
of witness's
connection
with Railway**

Witness's fare-
well to his staff.

the Pacific Railway at this particular stage. I cannot conceal from the members of the staff that I would have preferred to have remained with them to help forward the more complete fruition of our joint labours. But circumstances have exacted that it shall be otherwise, and the time has come when my professional connection with the great undertaking, into which I have thrown my best energies, must close.

"On the other hand, I conceive that I may, with legitimate satisfaction, look back on the progress which has been made. The vast territory in which our investigations have been made is no longer a *terra incognita*. Our labours have successfully pierced the formidable barriers imposed by nature, and every problem of practicability has been solved. Construction is being proceeded with at different points, within a range of nearly 2,000 miles, and in a little more than another year the completion of at least 600 miles of the railway is assured. In that short period a line of communication will be open within Canadian territory for the influx of settlers to our great fertile wilderness, destined to be the home of millions.

"In retiring from the office of Engineer-in-Chief of the Pacific Railway, I entertain the kindest feelings to each and to all. I shall always retain a warm recollection of friendships formed during my official career. I shall delight in hearing of the prosperity of my old associates, and I shall watch with deep, may I say patriotic interest, the development of a national work which it has been my high privilege to assist in bringing it to its present condition.

"Again, with cordial good feeling and best wishes to all—Farewell!

"SANDFORD FLEMING."

22344. Does anything further occur to you as proper to be given by way of evidence?—These documents which I have now submitted conclude my connection with the Pacific Railway.

22345. Then, I understand, there is nothing more which you wish now to offer by way of evidence?—There is nothing further.

OTTAWA, Tuesday, 7th June, 1881.

HORETZKY. CHARLES HORETZKY'S examination continued:

Surveys.

By the Chairman:—

22346. You will understand that as you have been already sworn before the Commission, you are still a witness under the former oath?—Yes.

22347. You have said that you desired to add something to your former evidence?—Yes; that is my intention.

22348. If you are ready you may now proceed?—In the *Toronto Globe* of the 16th May, 1881, appears the following testimony by Mr. Sandford Fleming:—

"By Judge Clarke—Did you send out Mr. Horetzky to make some explorations?
"Mr. Fleming—He went out as a photographer, I believe; but that opens up another question. It was sometimes necessary to employ persons to make explorations who were not adapted to the work, or qualified to be chief engineers, &c., &c."

Character in
which witness
was employed.

The answer given above is so deliberately false and contains such a vile insinuation against myself as a late employé of the Government, that I am compelled to ask this Commission to hear the following statement: I entered the service of the Government in 1871 as field assistant to Mr. Frank Moberly. In that year, after acting as assistant upon the first railway exploration between Winnipeg and Edmonton and the Howse Pass, I made, single-handed, at Mr. Moberly's desire, an exploration to Jasper House, returning to Ottawa in March, 1872. Mr. Fleming then asked me to conduct him over the line Mr. Moberly had

Surveys.

explored. I undertook this responsibility; but after leaving Winnipeg Mr. Fleming became so anxious, that the idea of following Mr. Moberly's route was given up—

The idea of following Moberly's route given up by Fleming.

22349. Anxious about what do you mean?—Anxious in many ways. He was afraid of Indians. He was afraid of being belated. The Rev. Mr. Grant, who accompanied us, was anxious to get back to his parishioners in Halifax. That is the meaning.

22350. You do not mean anxious about some portion of the work?—Not at all. Anxious as I said, being afraid of Indians, for of course to do that, follow Mr. Moberly's line, we should have been far away from the usual line of travel. Our line would, of course, have been through a country where there were no trails, and the Rev. George M. Grant, of Halifax, author of "Ocean to Ocean," Mr. Fleming's secretary upon that expedition, was very anxious. He stated, shortly before we reached Portage la Prairie, and shortly afterwards, that he had an appointment to see his parishioners in Halifax by the 15th of November following, and that if we went by the southern route and at as low rate of speed he should never be able to get back in time. That was one reason for Mr. Fleming's anxiety, and I was directed to follow the quickest and easiest way to Edmonton, by the usual cart trail and far from the line explored. Thus Mr. Fleming saw nothing of it, although he has stated in his last report that he passed over the line from Lake Superior to the Pacific. Subsequently, in all cases, I have been employed as an exploring engineer at the salary usually paid to Mr. Fleming's other engineers—that is to say, \$160 per month, which is the salary usually given to those engineers who were in charge of parties. I have always reported directly to the Chief Engineer, and my topographical plans and maps are now deposited in the Department. My duties as an exploring engineer were to describe the topographical features of the country under examination. My daily advance had to be recorded in a field-book in the form of a track survey; measurements were made by aid of the micrometer telescope, by dead reckoning, by the application of trigonometry, by astronomical observations with a sextant, and by whatever other methods were dictated by common sense. The hypsometrical observations were made by aid of mercurial cistern and syphon barometers simultaneously used by two observers at different stations, while intermediate elevations were ascertained by aneroid. In this manner I was enabled to take very accurate levels across vast extents of country at a trifling expense, and the extreme accuracy of the results obtained have, on several occasions, been most favourably commented upon by Mr. Fleming himself. I may add that my system of survey has withstood already, in several cases, the crucial test of subsequent instrumental surveys by a regularly constituted staff of surveyors, and the accuracy of my levels has been the subject of frequent comments. The Hon. Alexander Mackenzie, late Premier, has also spoken of the small cost of my work, and the Public Accounts are, I presume, available to corroborate this assertion. I have been employed upon special service. The most difficult and arduous examinations ever made upon the Pacific surveys were made by me. That I was so employed, and that Mr. Fleming must have placed implicit confidence in my ability and judgment, I shall now prove by his own handwriting. During Mr. Fleming's overland journey, during the summer of 1872,

Directed to follow the quickest and easiest way to Edmonton.

How measurements made.

Surveys.

he requested me to make the examination described in the following letter of instructions, marked No. 1:—

(Copy.)

"FORT EDMONTON, August 27th, 1872.

"CHARLES HORETZKY, Esq.:

Fleming to
Horetzky (from
report of 1874,
p. 35.)

"MY DEAR SIR,—It is important that as much information as possible be obtained respecting the country extending from the waters of the North Saskatchewan, northerly and westerly, by the valley of Peace River, to British Columbia, and thence to the coast line in the latitude indicated.

"Having every confidence in your energy and ability, I have to request that you will at once proceed to make an exploration through the country, and obtain, by personal observation and enquiry, as much information as it is possible to acquire within the present year.

"With the above objects in view, you will proceed by the speediest route to Dunvegan, and thence ascend by the valley of Peace River across the Rocky Mountain range to the Omineca district in British Columbia.

"You will report to me as full information as possible respecting the topographical features of the district you will traverse, having in view the opening up of the country by a trunk line or other lines of communication.

"Wishing every success to the expedition,

"Believe me,

(Signed)

"SANDFORD FLEMING."

Result of witness's exploration to show that the Peace River Pass was difficult of approach from the east, but that Pine River Pass was probably available.

I should respectfully ask this Commission if the person to whom the above letter was addressed was likely to be, in the estimation of Mr. Fleming, not adapted to the work or otherwise disqualified. The result of this expedition was, amongst other things, to acquaint Mr. Fleming with the fact that the Peace River Pass was difficult of approach from the east, but that there were strong probabilities of the existence of a better pass in about latitude $55\frac{1}{2}^{\circ}$ (the Pine River Pass)—Mr. Fleming, however, discouraged this view, telling me very sharply that the Pine River, as well as the Peace River, were too far north. The matter was then dropped apparently until 1877, when Mr. Marcus Smith sent Mr. Hunter to ascertain how far I was right in my surmise. He corroborated my statements, and, in 1879, Messrs. Cambie and MacLeod were obliged to more than verify the accuracy of my judgment. In 1874, I reported upon the various inlets upon the British Columbian coast from Douglas Channel southward, upon the valleys leading from them to the interior, and upon the coast generally. In 1875, Mr. Fleming sent me out to explore the country lying between the Cascades and François Lake, in British Columbia, but owing to my not having received full written instructions, some difficulty arose, the result being that I was prevented from carrying out the work originally assigned to me, and instead I was sent to photograph the salient features of the Bute Inlet route, views of which are deposited in the Parliamentary Library. In 1876 and 1877, I was sent upon special service to Lake Huron, as per accompanying letters of instruction:

Sent to photograph salient features of the Bute Inlet.

"CANADIAN PACIFIC RAILWAY SURVEY,

"OTTAWA, 18th May, 1876.

"CHARLES HORETZKY, Esq.:

Smith to
Horetzky.

"SIR,—The Minister of Public Works has determined to have a line of country examined as direct as practicable between the west end of Lake Nipissing and a point on the shore of Lake Superior, a little to the north of the mouth of the River Pic, as shown on the accompanying herewith.

"The immediate object of the exploration is to ascertain how far it may appear feasible to construct a line of railway between these two points, and to enable the Government to judge if it would justify the cost of an instrumental survey.

"The examination of the country in the vicinity of the French River and Lake Nipissing, as far to the north-west as White Fish River, or to the Vermillion River—as may be found expedient—will be under the direct supervision of Mr. M. Smith, the Deputy to the Engineer-in-Chief.

"Thence to Lake Superior, the line will be in two divisions—the south-easterly and the north-westerly. You are appointed to take charge of the exploration of the

Surveys.

Directed in 1876, to explore from Vermillion River to the south end of Lake Wenebegon.

former—commencing at the White Fish or Vermillion River and extending to the south end of Lake Wenebegon, about the latitude of 47° 30' north and longitude 83° 10' west, as shown on the tracing, and as much farther as may be necessary to meet the party exploring the other division from Lake Superior.

"Should you find that it would be futile to continue your examination in the direct course, on account of insuperable intervening obstacles, you will not abandon the exploration, but make every possible exertion to endeavour to find a more feasible route by deviating to the north or to the south; bearing in mind that the general direction should be tolerably uniform, avoiding zig-zags as far as practicable, so as not to lengthen the line where it can be avoided.

"You may possibly be led to the north or south of the point suggested on Lake Wenebegon, but that will be a convenient rendezvous for the two parties to meet and consult as to the joining of the surveys.

"You will make what is known as a track survey, taking the courses with a pocket compass and estimating the distances by the time occupied in travelling from station to station. The heights will be ascertained approximately by a pocket aneroid or other barometer, and they should be taken at short intervals, so that a profile of the country could be plotted from them.

"You will be allowed one assistant to accompany you who has a knowledge of surveying, and who will be able to render you every assistance. As the service is special, the Minister concurs in your nominating the assistant to accompany you subject to my approval. His salary will not exceed \$80 per month.

"The Department will furnish you with funds and the supplies you may require to carry out, in a satisfactory manner, during the present season, the important service placed in your hands.

"So soon as the service is complete, you will be good enough to report to me the results, and place in my hands all plans and other documents which you may have prepared.

"I am, Sir,
"Your obedient servant,
"MARCUS SMITH."

"CANADIAN PACIFIC RAILWAY,
"OFFICE OF THE ENGINEER-IN-CHIEF,
"OTTAWA, 22nd May, 1877.

"CHARLES HORETZKY, Esq., Ottawa:

"SIR,—It gives me pleasure to inform you that you have been appointed to continue the explorations on the north of Lake Huron, on which you were engaged last season, south-easterly as near as practicable on the direct line, from a point near the mouth of the River Pic, Lake Superior, to a point on French River, as drawn on the general map, till you reach the Vermillion River, where you will connect with Mr. T. Ridout's survey (and you should take a tracing of that portion of his plan). It is possible that you may not succeed in getting a practicable line from Lac au Sables to the point on Vermillion River, where Mr. Ridout's line intersects it. It will be your duty to explore a considerable breadth of country to the north of your line, more especially the eastern portion of it; and you may probably find it necessary to deviate from the line you followed last season, at a point some distance back, so as to get a good line to connect with Mr. Ridout, or you may possibly find the west line will reach Vermillion River, at some distance below the point where Mr. Ridout's line intersects it, in which case you will have to continue your line eastward till you can make the junction in an easy flowing line. I need not enter into any details respecting supplies and mode of getting these transported on to the work, as you have had experience to guide you in these matters. I only enjoin that the strictest economy consistent with efficiency shall be observed. Your party will consist of:

Directed to explore from River Pic to a point on French River.

C. Horetzky in charge, salary	\$160 per month.
A. J. McNeil.....	35 " "
— Inglis	30 " "

"Wishing you success on your explorations,

"I am, yours truly,
"MARCUS SMITH."

Full reports upon all the above explorations are to be found in the general reports of 1877 and 1878. In February, 1879, Dr. Tupper informed me at his office that it was the intention of the Government to have a thorough final examination made of the country lying between the Skeena and the Peace River, and that my services would be required for that purpose. I told him that I wished no longer to undertake such arduous labour, but he

Surveys, B.C.

Directed to
explore between
Skeena and Peace
River.

pressed the matter upon me and said: "Do this, and when you return all the years you have been employed upon the Pacific Railway will be counted in your favour." I thereupon assented, and, pending my departure for British Columbia, was occupied in the work of collating all available information upon the North-West Territories, at the request of Dr. Tupper. In April, Mr. Fleming discussed the subject of my approaching expedition to northern British Columbia, giving me to understand, as I had understood from Dr. Tupper, that I should have full charge of the expedition. In consonance with this understanding, Mr. Secretary Braun, of the Public Works, addressed to me the following letter of instructions:—

(Copy—No. 11,458.)

"DEPARTMENT OF PUBLIC WORKS,
OTTAWA, 30th April, 1879.

"Sir,—Referring to your appointment to take charge of the surveying expedition at the source of the Peace River in British Columbia, I am directed to inform you that instead of procuring transportation, subsistence, &c., for yourself and staff through Government purveyors as heretofore, you shall have to assume the responsibility of those duties yourself. The necessary funds will be furnished you by amounts being placed to your credit in a bank in British Columbia, the expenditure of which you shall account to this office in the usual way by transmitting proper accounts, accompanied with necessary vouchers in duplicate.

"In order to enable you to discharge those duties satisfactorily, the Chief Engineer will assign an additional person to your staff who shall be subject to your orders, and act in the capacity of accountant to your party. You shall see that he keeps a proper set of accounts, but all the cheques issued by him must be approved and countersigned by yourself.

"I have the honour to be, Sir,
"Your obedient servant,
(Signed)

"F. BRAUN,
"Secretary.

"C. HORETZKY, Esq., C.E., Ottawa."

Informed that
Cambie was to
control his
movements.

But on the eve of my departure for Victoria, Mr. Fleming called me into his room to inform me of a change in the arrangements, by which Mr. H. J. Cambie was to have charge of all the surveys and the direction of my movements. I appealed to Mr. Fleming against the unfairness of putting me under the orders of a person who had not my experience in the work of exploration, pointing out that I knew much of the region to be examined, while Mr. Cambie did not, and finally Mr. Fleming said: "No one will interfere with you in the mode of your operations. Go out, and remember that the Government looks to you in this matter for reliable information." I left Ottawa that evening, and a few days after was followed by Messrs Cambie, MacLeod, Keefer and the Rev. D. M. Gordon. Mr. Cambie's instructions contained the following memoranda for my guidance, see page 31, report of 1880:—

Instructions to
Cambie for
guidance of
witness.

"5 Mr. Horetzky has been instructed to explore the country between Fort Connelly and Fort MacLeod, and to ascertain if a passage for a railway line of a satisfactory character can be found between one side of the country and the other, either by the branch of the Skeena, or by other branches leading to the Omineca district.

"6 Mr. Horetzky will extend his examination over the whole country between the Skeena and Peace Rivers in this district as far south as the Nation. He will make such measurements as may be necessary to determine what routes suitable for a railway are available.

"7 I have given Mr. Horetzky verbal instructions to make full and exhaustive examinations of this district.

"8 Although Mr. Horetzky has been specially detailed for the service referred to, he will, in any question of doubt, refer to you [meaning Mr. Cambie]. He has been informed that he must look to you as the senior officer in charge of all the surveys, and be governed by your views and directions both with regard to the explorations, the matter of supplies, and the means of transport."

Rather significant putting me in mind of this—very significant :

“ 9. It is the desire of the Government that the country should, with as little delay as possible, be thoroughly explored, so that the shortest eligible route between the River Skeena and the Peace River, or Pine River, be fully determined.”

Now, I would respectfully call the attention of this Commission to the very extensive character of the work laid out for me to do, to the fact that the region designated was unknown to any but a few passing miners, and that, being an entirely mountainous district of dense virgin forest, its examination was peculiarly difficult. To carry out all these instructions was quite beyond the power of one man; nevertheless, I succeeded in carrying a chain of very accurate levels across no less than three distinct ranges of high mountains, and in mapping out a great extent of country, from the Forks of Skeena to the lower waters of the Peace River, in the short period of three months. My first journey of mere reconnaissance occupied three weeks of nearly continuous travel on foot. I ascended thirty-five miles of the Skeena River never before navigated by the local Indians, even the lives of my men and my own were risked on more than one occasion, the severest toil and hardship were endured by all my party excepting the two observers detailed for the hypsometrical observations, who were, of course, confined to their fixed stations, and yet Mr. Fleming has been so magnanimous as to tell this Commission that he believed I went out as a photographer, and to insinuate that I was one of those not qualified to perform such work. My report at page 75 of the general report for 1880, and the plan deposited with the Department, will bear me out in this statement. I shall not refer at any length to the vacillating action of the Chief Engineer who, in changing my instructions in so far as the charge of the survey was concerned, appears to have desired to cause trouble between Mr. Cambie and myself. That gentleman and I did not quarrel, however, doubtless much to Mr. Fleming's disgust. In face of the above incontestable documentary proof, how could Mr. Fleming so far forget himself as to bear false witness against me in the manner he has done? From 1872 up to 1879 he has had ample opportunity to gauge the value of my services, and if during all those years he has considered me as an incapable, his course in sending me out under such special instructions, as he has himself written, is beyond the comprehension of ordinary minds. Regarding the statement that I went out as a photographer, I can only say that it is utterly untrue, and so absurd as to scarcely require a denial. It is perfectly true that I took many photographic views during my numerous journeys, but I did so at first merely to please Mr. Fleming's taste for fine scenery and to help embellish his book "Ocean to Ocean." When United States officers of the army engineer corps surveyed the route for the Union Pacific Railroad, some of them sketched the interesting scenery, but did not thereby lose their professional reputation as surveyors or engineers—in like manner did I photograph when the opportunity presented itself; but I did so merely to add to the general store of knowledge, and may here say that I never received one cent for my trouble. Upon one occasion, however, in 1875, owing to some official misunderstanding, and some conflict of opinion between Messrs. Smith and Fleming, and particularly to a piece of bungling entirely beyond my control, I was sent to photograph the salient features of the Bute Inlet route, but that journey only occupied six weeks. This puerile misstatement may be therefore dismissed as unworthy of argument. Finally, as a further proof of the estimation in which Mr. Fleming held my work,

The statement that witness went out as a photographer not correct.

Surveys, B.C.

Letters regarding witness's unpaid claim.

I shall now produce two letters regarding my still unpaid claim for extra compensation on account of the season of 1879 :

(Copy.)

"OTTAWA, May 4th, 1880.

"SANDFORD FLEMING, Esq.,
"Engineer-in-Chief:

"SIR,—I enclosed to your address this morning, an account for arrears of salary. I know not whether you will deign to consider the ground I take for making this demand, as given in my letter to you of 21st March, of sufficient weight. You will, perhaps, think that as I have now signified to the Minister my intention to take up the history of the Pacific Railway survey exhaustively, it would be impolitic on your part to admit (which its payment would imply) the validity of my claim. I shall, notwithstanding, take the liberty of reminding you that the work of the Peace River party (Messrs. Cambie and MacLeod) and mine were similar in character, the greater difficulties being my perquisite, and, as Messrs. Cambie and MacLeod have never been allowed to remain idle, the former having been kept on continuously during the winter and spring of 1879, although upon the sick list, and last winter in British Columbia, in idleness, I think that, waving the last mentioned consideration entirely, and merely judging our respective labours by their intrinsic merits, I have excellent ground for preferring a claim for salary while in the field, at least equal to that paid to Mr. MacLeod. I mention Mr. MacLeod merely in contradistinction to Mr. Cambie, who was nominally in charge.

"I have the honour to be, Sir,

"Yours obediently,
(Signed) "C. HORETZKY."

After the lapse of four weeks, during which time Mr. Fleming doubtless studied the matter from various aspects, he honoured me with the following reply:—

"OFFICE OF CHIEF ENGINEER,

"June 1st, 1880.

"C. HORETZKY, Esq.,

"DEAR SIR,—In closing up my correspondence, I find a letter from you of the 4th of May, respecting your salary. As I never had power to fix salaries, my only course is to refer your letter to the Minister for his favourable consideration.

"Yours truly,

(Signed) "SANDFORD FLEMING."

Regarding this reply as an honest expression of Mr. Fleming's real feelings as to the reasonableness of my claim, it can only be read as full acknowledgment that he considered my work at least as valuable as that of Mr. Henry MacLeod, which it undoubtedly was, seeing that the Peace River party travelled, for the most part, over old and well known ground of the easiest character, and upon a magnificent placid river such as the Peace. Their journey was a mere pleasure jaunt, they were fitted out in almost regal style, with ninety-five animals and a retinue of some twenty-seven servants, besides having, in addition, the luxury of a secretary and the advantage of a clergyman. Besides, to preclude the possibility of any mishap to this expedition, another expedition under a Mr. Latouche Tupper was sent from Winnipeg at a cost of many thousands of dollars to meet the travellers as they emerged from the Rocky Mountains. What was the cost of this ridiculous excursion? The Hon. Mr. Anglin asked that question in Parliament last Session, but he never, I believe, received an answer. What was the cost of my examination? I have all the items, and am not ashamed to give them. The sum total of the expenditure properly chargeable to me was \$4,717.94, or, to allow for some small items of which I could not get the exact amount, say \$5,000—this does not include my salary and expenses from Ottawa to Victoria and return (\$480). That means the expenses, not the salary. And what was the result gained to the country by the enormous expenditure and cost of this grand expedition? Only to corroborate what I had already told Mr. Fleming officially, and in other ways

Cost of witness's examination of Peace River district.

Surveys, B.C.

regarding the superiority of the Pine River route over that of the Peace River, in engineering and other features, years before; information obtained at a cost to the country, little in excess of \$1,000. It is, however, proper to say that the expenses of Mr. Dawson's trip were included in Mr. Cambie's, and that the former brought back very valuable information corroborative of my former statements regarding the Peace River region. Mr. MacLeod also brought back more minute information concerning that portion of the Peace River line laid down by me in a map given to Dr. Tupper in April, 1873, and afterwards reproduced in "Canada on the Pacific," (a book I published) comprised between meridians 118° and 122° (or the meridians of Smoky River and Hudson's Hope). My survey of 1879, contemporaneous with that just alluded to, was made at a cost of \$5,000, as I have already shown, but, although similar in character as a work of exploration, was infinitely more difficult to carry into effect, as already pointed out. My party consisted of five Indians, two white men, and a youth of no experience whatever in work of the kind. I spent several days in teaching this young man and one of the other white men the use of the cistern barometer and of other meteorological instruments. Those two were then detailed during the whole season for the sole work of simultaneous hourly observations at different stations indicated by myself across the line of country under examination, and the result of their monotonous but highly useful and important duties (which they fulfilled to admiration) was to enable me to furnish a profile of the country 180 miles in length, extending from the Forks of Skeena to Germanson Creek, on the Omineca River, which I only hope may some day be submitted to the crucial test of the spirit level. While this simple but effective method of levelling was going on, a method employed by United States engineers in Nevada when exploring for the Central Pacific (see Professional Papers of the Corps of Engineers, U.S. Army, 1867, by Major R.S. Williamson, Engineer Corps), the rest of the party and myself, occasionally aided by stray Indians, were constantly in movement, scouring the country on foot, and sometimes in canoes, upon dangerous mountain streams in some instances never before navigated by even the local Indians, engaged in carrying out the instructions and in making the measurements detailed in Mr. Fleming's report. On several occasions we had to contend with treacherous and superstitious Indians, amongst whom, at the period of our presence several cases of cold-blooded murder occurred. An Indian was shot within a quarter of a mile of us and his body was burned that night. My Fraser River Indians felt themselves to be in an enemy's country and were consequently at times difficult to manage, but despite those drawbacks, the work was done, the country thoroughly examined and mapped, and yet Mr. Fleming believes that I went out as a photographer, and insinuates that I was one of those incapables necessity occasionally compelled him to employ—and refuses to sanction the payment of my fair and reasonable claim for compensation equal to that allowed to a member of the contemporary Peace River expedition. Since the publication of my letter in the *Globe*, with reference to Mr. Fleming's evidence as reported in that newspaper, I have been told that the official report records Mr. Fleming's answer as follows:—

"He went out, I believe, as a photographer in the first instance."

The assertion is none the less untrue and damaging to my reputation. In the first instance, that is to say in 1871, the first year of the surveys,

Witness's manner of carrying out his exploration.

Surveys, B.C.

I was engaged as one of Mr. Frank Moberly's field assistants in the preliminary exploration across the plains between Winnipeg and the Rocky Mountains, and, after the disbandment of the major portion of his party at Edmonton in October of the year mentioned, accompanied him to the Howse Pass, and afterwards performed, single-handed, the exploration from Edmonton to Jasper House on snow-shoes, returning to Ottawa in March, 1872. (For proof, see Blue Book, general railway report of 1872, appendix 5, pages 53 to 57.) It is true that I had a photographic camera with me, and that I took some (one dozen or so) views during the season, but this was entirely voluntary on my part, and was done solely to please Mr. Fleming's taste for fine scenery, and to add to the general stock of knowledge. Previous to the setting out of the expedition, I told Mr. Fleming that I had already done something in that way as an amateur, and he said: "by all means procure a small camera and photograph whenever you can." But to state that I went out as a photographer is, to say the least, a pure sophistication. I also have been told "you are described in the Rev. Geo. Grant's book, 'Ocean to Ocean' as 'photographer' &c."—that, again, is a mistake. I plead guilty to the " &c.," but disclaim the "photographer" *in toto*; and, in point of fact, I may here state that a camera was not amongst our paraphernalia of travel between Winnipeg and Edmonton when I diverged from the Chief Engineer's party. It is true that, upon our arrival at Edmonton, where I had left a camera on my former journey I did, at the request of Mr. Fleming and his secretary and medical attendant, photograph the party in picture-que pose for the delectation, I presume, of home admirers; but, as I was the conductor of the whole expedition from Winnipeg across the plains, I think it will be admitted that the author of "Ocean to Ocean" has erred, to say the least, in designating me otherwise. It is also true that in my branch expedition to Peace River and to the Pacific coast, and upon all subsequent voyages, I carried with me a small camera and a few dry plates, but, as already stated, this was done (as has been done by the Geological Survey following my example) in order to supplement our general information, and in my own case as a valuable adjunct to the process of laying down the topography of the country. Since the matter of efficiency has come up, I may add the opinion, that had my system of exploration in difficult regions been more universally adopted from the beginning, untold thousands of dollars would have been saved to the country. I speak with confidence and not without excellent proof. Innumerable lines have been run in British Columbia, and in other parts of the Dominion (at enormous expense with transit and spirit level), which have since been discarded for obvious reasons. In the majority of cases, the principal features of those lines, *i.e.*, the horizontal and vertical elements, could have been very well determined by a simple reconnaissance with micrometer, compass and barometer, by a competent engineer and one assistant, with half a dozen men. This could have been done at one tenth of the cost of a regular instrumental survey. I can quote two cases in point. By reference to pages 137, *et seq.*, and pages 174, *et seq.*, of the general railway report of 1877, it will be seen that two reconnaissances by myself in 1874, one up the Kimano Valley, in Gardner Canal, the other up the River Kemsquit, an affluent of the Dean Canal, were subsequently verified in the closest manner possible by the instrumental survey of Mr. Trutch. Both the vertical and horizontal elements in each case were so closely verified as to cause surprise. In the first instance, the Kimano, I made the reconnaissance in seven

Witness dis-claims the photo-grapher, but pleads guilty to the &c.

An exploratory survey would have been better in cases where instrumental was used.

Surveys, B.C.

days with six men, at an expense of less than \$100 (my own salary not included). The following season Mr. Trutch went over the same ground with the spirit level and a large party. I believe he was about one month in obtaining the same results. In the other instance, the Kemsquit, about ten days sufficed for myself and half a dozen men to obtain, by reconnaissance, very accurate information regarding the principal elements on the Kemsquit route for a distance of thirty-five miles, between tide water and the Salmon House. Precisely similar results were afterwards obtained by transit and spirit level, worked by a large party at great expense. Now, the results obtained from these two cases of simple reconnaissance were the least trustworthy of the whole season, inasmuch as the journeys indicated were the first and last I made in that year, both being hurried, and less care than might have been used, taken with the horizontal element or distance. In the case of the Kimano, the route was seen from the very first to be so obviously impracticable that my sole care was directed to the vertical element or height of the water-shed. Mr. Marcus Smith, on seeing my profile of that journey, and on hearing my report upon the nature of the valley which was also faithfully delineated by photography, at once decided that it would be folly to waste money upon further examination; but Mr. Fleming thought otherwise, hence Mr. Trutch's instrumental survey, and the verification of my work to within a dozen feet. In the case of the Kemsquit River, although my distances were derived from mere dead reckoning, the ultimate results of the reconnaissance, and of the instrumental survey were so close as to excite Mr. Fleming's astonishment, and I now give these, omitting intermediate levels:

KEMSQUIT ROUTE (DEAN CANAL).

Kemsquit River.

	Miles.		Feet.	
	Trutch.	Horetzky.	Trutch.	Horetzky.
Head of navigation.....	18	17	599	621
Yeltesse or Salmon House.....	34	37	1441	1440

Trutch's distances were chained and his heights taken by spirit level. My distances were estimated, and my elevations obtained by a scientific application of the barometer to hypometry, never made use of upon the Pacific surveys by any one but myself. The method I used was that described by Major Williamson of the U.S. Corps of Engineers, in his valuable and rare work upon the barometer. He had charge of one of the parties organized by the United States Government to make such explorations and surveys as were necessary to ascertain the most practicable and economical route from the Mississippi to the Pacific Ocean. He was not a railroad engineer, but an engineer in the strictest sense, being gifted, in addition to his high scientific attainments, with strong common sense. On or about the 27th February, 1874, I submitted to Mr. Fleming a scheme of barometric survey, detailing briefly how such a survey should be conducted, and recommended a cheap and simple method of exploring the country from MacLeod Lake, in British Columbia,

In 1874 suggested to Fleming a scheme of barometric survey from MacLeod

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Lake to Lake la Biche, but no notice was taken of suggestion.

to Lake la Biche in latitude 55° , longitude 112° W., *via* the Pine River Pass. Mr. Fleming never condescended to notice my suggestion, which, had it then been carried out, would have saved a mint of money to the country, as the cheapest and most obviously easy route to Bute Inlet would have been found. In the case of the Pine River Pass and route (with Bute Inlet as an objective point), which I laid down on a map given to Dr. Tupper, in April, 1873, instead of to Mr. Fleming, because the latter had told me, on my return from British Columbia a month or so before, that a very brief report upon my journey would be sufficient and that no map was necessary; it is now conceded by the best authorities, that the line then proposed and exhibited upon that map (copy of which will be found in my book "Canada on the Pacific") is the best route by which Bute Inlet could have been reached (or any part north of it) from the fertile portions of the North-West Territories east of the Rocky Mountains. Bute Inlet was then, and up to a much later period, one of the chief objective points sought on the Pacific coast. Burrard Inlet has now been adopted, and I mention the Pine River route merely as an argument that I was right and that Mr. Fleming was wrong. He has, however, recently made a partial, but open confession of error. (See his letter of September, 1879.) Mr. Fleming has stated (*Globe* report) that he was never trammelled by any Government in the selection of routes, and that he always aimed at the best and cheapest route in the public interest. If so, why, when he sought to reach Bute Inlet, did he never attempt to reach it by any other than the Yellow Head route? He has made that statement from untenable ground. I can believe, and do believe, that the Governments he served, trusted him implicitly, and accepted his views as Chief Engineer; but I can prove, and shall prove on the spot, that he did not look for the best and cheapest route in the public interest. Mr. Marcus Smith, who has examined much of the country

Pine River route.

under discussion, gives the opinion that the Pine River route to Bute Inlet would not probably entail more than half the expenditure, mile for mile, necessary on the Yellow Head line (report of 1878, page 48). Messrs. Cambie and McLeod have been obliged to admit the extraordinary facilities for railway construction of the country between Stewart River and Lesser Slave Lake, *via* the Pine River Pass, which Mr. Cambie admits to require lighter works than the Peace River Pass which latter he asserts to be wonderfully favourable. (See report 1880, page 55, *et seq.*) The testimony of those three gentlemen is conclusive in establishing the superiority of the Pine River route, when compared with that of the Yellow Head, as the means of reaching Bute Inlet, and it shows that Mr. Fleming did not look, in that instance, for the best and cheapest route in the public interest. In 1873, I suggested that very route to Mr. Fleming after carrying out his instructions of the 27th August 1872; but, in the strangest and most inconsistent manner it is possible to imagine, he refused to accept my information, and dismissed me from the service without any valid reason whatsoever. I take no credit to myself for the discovery of the Pine River route. I had previously seen the southern line, from Winnipeg to Jasper House, and should have been deserving of censure had I done otherwise than report favourably regarding the Pine Pass line. A blind man would have been sensible of the wide difference in the physical features of the country on each route, and the merest tyro would have seen the advantages of the line laid down on my map, which, avoiding the insuperable difficulties of the Peace River

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Valley, takes the remarkably easy route to the Pine River Pass. In the last railway report issued (1880) Messrs. Cambie and MacLeod have exactly copied the line shown in my book "Canada on the Pacific," published seven years ago. My argument is finished. I have given indisputable proofs that I did not go out as a photographer; that I have been employed upon special service; that such service has been performed in an able manner, and that had my cheap and simple method of attaining information been used this Dominion would be richer by a very large sum of money. Mr. Fleming's letters and memoranda of instructions to me, extending over the long period from 1872 up to 1880, are not reconcilable with his recent testimony. Could he have addressed such instructions to a person whose ability and integrity he doubted? And could he, having addressed me such instructions, have lost his memory to such an extent as to scarcely remember whether I had been a mere photographer, or one of those incapables he seems to have delighted in? Mr. Fleming stands convicted of deliberate and malicious falsehood. His malevolence has been directed against me ever since I brought the Pine Pass under his notice. In doing so I unconsciously wounded his vanity, which could not brook the idea of any one but himself proposing a route. His conduct in my case has been most inconsistent. After sending me in 1872 upon a special mission to procure all possible information he refused to accept that information, refused my report, refused my map, accepting instead the views of the botanist who accompanied my expedition, and those of a lawyer who had compiled some information about the country from old Hudson Bay journals. Both proved themselves to have been most laughably in error. Since then, Mr. Fleming has systematically gone to work to depreciate my services, and has sought, in his last general report, to credit Mr. Cambie with all the information about the Peace River, and to cover up his own tracks, his unpardonable mistakes, by inditing his celebrated letter of the 30th September, 1879, to Sir Charles Tupper. I have been the victim of his malevolence since 1873, when he dismissed me without rhyme or reason; in 1874, when he attempted to keep me off the work; in 1880, when he poisoned the mind of Sir Charles Tupper against me, and now, when, despite his own letter, promising to recommend my claim for extra compensation on account of the work of 1879 in British Columbia, to the favourable consideration of the Minister, he refuses to sanction its payment. That claim has not been paid. Last September I called upon Mr. C. Schreiber, who told me that the Minister was ready and willing to pay the claim the moment Mr. Fleming gave his assent. Mr. Schreiber even went so far as to send Mr. Smellie to Mr. Fleming's residence: "to get the matter put in shape." A day or so after, Mr. Smellie reported to Mr. Schreiber, in my presence, that Mr. Fleming refused to act. After dancing attendance for several days, I finally gave up all hopes of seeing my just and reasonable claim settled, and it never will be so long as Mr. Fleming pulls the wires behind the scenes. I have nothing more to say of relevance to this issue, I have, I think, made out my case, but I would respectfully say to this Commission that there is much yet to learn with respect to the frightful extravagance and incompetence which have reigned. Another matter of importance I shall also allude to privately.

Thinks he excited unfriendly feelings by advocating Pine River Pass.

22351. In this statement which you have just read you allude to **Extravagance.** frightful extravagance and incapacity reigning, I presume you mean in the management of the Pacific Railway?—Yes.

**Surveys, B. C.—
Extravagance.**

22352. Would you please give us some intimation as to the method we ought to adopt in order to get the particulars of that extravagance and incapacity?—Well, I can give you some hints.

22353. Please state them by way of evidence?—I should prefer a little time to do that. I should like to go home and take a few notes, but that is irrelevant to this.

22354. You mean it is irrelevant to the issue between you and Mr. Fleming, as reported in the *Globe* newspaper?—That is all.

22355. But besides that we have another matter to consider—the general subject of the Pacific Railway—and we wish to get from you all the information we can on that subject?—If you ask me questions I will be glad to answer, but as you cannot ask the questions until I show you how, I wish for time.

Mules bought for
\$5, and resold to
Government at
\$200.

22356. It is with a view to getting information as to this incapacity and extravagance that we wish to have evidence?—I can tell you at the moment of some extraordinary things. It may surprise you to learn that it was customary on the Pacific coast, at one time, to buy mules from the survey at \$4 or \$5 a piece, and resell them to the Government at \$200 a piece. That was a business there.

22357. Do you say that people made it a business?—Yes; the Americans did. It is well known over there.

22358. Do you mean persons connected with the Pacific Railway?—No; persons outside.

22359. American dealers?—Yes; they used to go and buy up horses and mules for \$4 or \$5 a piece, fatten them up, and sell them back at from \$150 to \$200 a piece. You might, perhaps, be surprised, too, to hear that I saw survey camps in which Indians were fed on canned turkeys, canned fruits and puddings, and in which the engineer was drunk every night he went to bed. These things have happened. Perhaps you would be surprised to learn that an engineer sent at great expense by steamer up the coast to perform a piece of work, never performed the work, but remained on board the steamer and sent his men to do it.

22360. Do you know this of your own knowledge?—This point I have not seen with my own eyes, but it was public talk—the subject of public conversation.

22361. Are there any of these surprising facts to which you allude which you know of your own knowledge, and which you can state by way of evidence?—Well, I do not want to mention names, but I can give a fact that I saw myself; I should not like to mention the person's name.

Saw some engi-
neer drunk.

22362. I do not know whether you will be absolved from that, but, in the meantime, if you will mention the fact it may not become necessary to mention names?—I do not wish to mention names. At one camp I saw a case of Hennessy's brandy, and saw the ground laid out with pudding, and ham, and bacon, and sugar and supplies, in the most extravagant manner possible, for Indians and men—canned fruits and canned turkeys in the camp—and I have seen the engineer drunk. I saw him drunk that night, and I was told by his men he went to bed drunk regularly—I was told it by his transit men and levellers.

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22363. Did you see this upon more than one day?—I arrived there on Sunday and left Monday.

22364. This was upon a Sunday?—This was upon a Sunday; yès. In 1879, when I was performing the last exploration in British Columbia, between the Forks of the Skeena and the Peace River, some Indians told me of bags of bacon that were lying in the woods and in their care, that had been left by Mr. Cambie two years before that—Waste of stores. left to rot.

22365. Do you mean left in what they call a cache?—Left in the charge of the Indians. He had brought about half a ton too much in, and there the Indians were eating it and wasting it.

22366. You saw them yourself wasting it, or is it altogether what the Indians told you?—No; the Indians came to me and asked me if they could make use of it. There were several bags left, and they wanted permission to use it, and I told them I could not give them permission.

22367. Were they making use of it without permission?—Some of them were, but not these particular Indians.

22368. Where was this stored?—This was on the Awkilget or Wastonquah. The pork had been left with the Awkilget Indians, and some other Indians of another ranche asked me if they could not join in, too, and have some of it. The bacon was worth 40 cts. or 50 cts. a lb. there.

22369. Upon what exploration had that been used?—Mr. Cambie's exploration of 1877, I think—1877, when he went up the Skeena. He went up to the Skeena. He went up the coast to Port Essington, and then ascended the Skeena, and, in the meantime, had sent the pack train with provisions to meet him with abundance of provisions. The consequence was he had too much, and it was left among the Indians.

22370. In what year was it you saw this Sunday feast that you describe?—The year 1875.

22371. Where?—I do not want to mention names, because I have given you the year, and if I told you where you would get at the man himself.

22372. Do you think it is desirable that we should know all about it?—Well, I do not want to inform upon persons—upon particular individuals.

22373. I thought you were going to tell us all you knew about this matter, that was the nature of the oath you took?—I decline to give names.

22374. Do you decline to mention the locality in which you saw it?—I suppose I may as well—Bute Inlet.

22375. Can you not define it more particularly than that: do you mean at the head of Bute Inlet, or what part?—It was in a camp of a surveying party that was running a line at Bute Inlet in 1875.

22376. Could you mention the report that would tell us who it was, if you do not wish to mention his name? I think upon reflection, Mr. Horetzky, it would be better to name the person; I think it would be fairer to him, because it will give him an opportunity to explain or answer the statement; he may have some explanation that does not

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occur to you?—I think you can understand, Mr. Clark, I am willing to give you all the information I can. I point out the place and the party—I cannot tell the letter of the division, but it was the line running nearest the sea in 1875.

22377. You think by that we can discover it?—Yes.

22378. If you have given us the means of discovering it, why not mention it directly?—Because I do not wish to mention names. I am merely giving you this, as it were, as a piece of gratuitous information. In fact, perhaps, I should not have spoken until I went home and prepared my information for you.

22379. I think I ought to say to you that we do not know any difference between gratuitous and other information given by a witness: we wish to know all the facts that are material to this subject in the public interest; of course it may not be necessary that we should enquire into personal disputes?—I may say the individual had never any dispute with me.

22380. I am not making any reference to your individual disputes, but I am distinguishing between personal matters and matters affecting the public interest. Whoever this gentleman is, we think it is right that his name should be given, so that he can be put on his defence if it is considered important. This may have been only a single day's extravagance, or it may have been part of a year's extravagance; this Sunday may have been a sample of the whole season. Of course, you understand when you are called as a witness it is not for the purpose of serving any particular object which does not affect the public interest?—My sole object is to bring the truth out. I have been actuated, first, by a desire to do justice to myself. I have met with no generosity from any man connected with the surveys. I owe them nothing, none of them, and there is no reason why I should hide their faults. I should rather not mention names, but I tell you frankly and on oath that I arrived at this camp in September, 1875, and that the man in charge was drunk, and that his transit men and levellers told me he was drunk every night—that was his chronic state.

22381. Was he the engineer in charge of the party?—Yes, they told me that; but I think you will acknowledge that it is pressing me too hard to ask me to mention the name. I have given the locality and you can ascertain the rest.

22382. I understand you to say that you saw this man intoxicated, yourself?—Yes; with my own eyes. He stumbled over me. I had a nip of brandy from his flask in the tent. I think no engineer has a right to have brandy in his tent on a survey of that kind, and I think that canned meats, plum pudding and sugar *ad libitum*, and bacon thrown promiscuously among a crowd of Indians, who were getting \$1.50 a day, was extravagance, and those men were not working half the time. The store-keeper in charge asked: "Why not follow Mr. Horetzky's plan? He ladles out the flour to his men and gives them their rations." The chief of the party said: "It is too late; we cannot do that." It was too late; they would have massacred him.

22383. You heard the store-keeper say that?—Yes; I heard it distinctly. I had come down from the interior of the country with five Indians, on foot. My surveys have been noted for their economy throughout. I challenge investigation, and I challenge an inspection of

First object of witness tendering evidence to do justice to himself.

Witness had a nip of brandy from the flask of the man and in his tent in regard to whose state he deposes.

Surveys, E.C.

the Public Accounts. If we want a case of extravagance, we want to go no further than Mr. Cambie's expedition of last year, 1879. Fancy a party going in with ninety-five animals and twenty-seven servants, and a secretary and a clergyman. It was a mere pic-nic. Mr. Cambie was paid \$240 a month; Mr. MacLeod \$200 a month, and I who did the real work on the other side of the mountains, got \$160. There has been extravagance, and there has been incapacity, and there has been injustice. To meet that party Mr. Latouche Tupper started from Winnipeg the same year to meet them.

22384. To meet the Cambie party coming east?—Yes; and Mr. Cambie told me, in his own words: "Tupper's party cost \$5,000, and he never brought us a mouthful." There was no use of him at all; he never met them.

22385. A mouthful of what?—Of food. His object was to go west and meet Messrs. Gordon and Cambie and MacLeod, and leave provisions for them and help them out. That was the object of his expedition. He never met them at all, and I believe he ran short of provisions himself. If I am not mistaken, I believe he got provisions from some people up there.

22386. The relieving party had to be relieved?—I believe so; and yet those people are employed and patted on the back, and get good pay, and the man who does his work and serves his country is kicked out. That is a specimen of the Chief Engineer's justice.

22387. As to the general question of the feasibility of getting the requisite information about that new country (British Columbia) by simple explorations instead of by instrumental surveys, would you please say whether you think it would have been possible at the beginning of the work to obtain men who could take charge of explorations?—As I did?

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22388. As you did?—Well, why not? I was only a tyro, and I had never been out on an exploration myself before.

22389. Do you think that any person who could take charge of an instrumental survey would have been competent to take charge of an exploring party?—He should have been. Every man who was capable of taking charge of an instrumental survey should have been capable of taking charge of an exploring party. He is no engineer if he is not capable.

Men fit for exploration could have been had.

22390. Then I understand you to say that persons who could take charge of exploring parties are, at all events, quite as plentiful as persons who could take charge of engineering and surveying parties?—I should think so.

22391. Would they not be more plentiful: besides those who could take charge of surveying and instrumental examinations are there not those who would be competent to explore?—You mean, of course, that people who are competent to take charge of an instrumental survey are scientific men, and not so plentiful as others.

22392. I want to get your opinion whether, in fact, there would not be more persons in the country who could do the work of bare explorations than could take charge of instrumental surveys?—I do not think so. I think there would be more persons found capable of taking charge of instrumental surveys than explorations, because exploration is a faculty, and a man, to be an explorer, should have the bump of

The faculty of which makes a good explorer a gift.

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Character of
Survey.**

locality well developed. In fact, as Senator Macpherson has told me, it is a gift.

22393. Then, every person who could take charge of an instrumental survey could not take charge of an exploring party?—They have proved themselves not to be able for it, because they made lamentable blunders.

22394. Mr. Fleming has suggested that it was more difficult to find good explorers than good instrumental engineers?—That may be. I can believe him if he said that. Of course I do not know what he said. I merely refer to what he said regarding me. He said sometimes they secured the services of lumbermen to make explorations. For instance, he would ask a lumberman: "Is such a river navigable? Does it pass through a good country?" His evidence, that I gathered from the *Globe*, was very depreciatory of myself.

Witness took his levels by Major Williamson's system.

22395. I do not think his evidence as reported by the official reporters will be found so?—Now, for instance, the system of levels that I adopted—the way in which I took my levels—hypso-metrical results were taken by Major Williamson's system. It is a unique and very rare work. There is no other work published on the subject. It is devoted entirely to taking levels by barometer. He had experience of it, because he was at the head of a party sent out by the United States Government to explore the Missouri from the Mississippi to the Pacific Ocean. He ran spirit levels and barometric levels in conjunction simultaneously through two passes of the Sierra Nevadas, and throughout different parts of Nevada he established meteorological stations from which levels were reduced afterwards, and he proved conclusively that levels can be obtained, to all intents and purposes, just as well for the purpose of a railway, by the barometer as by levelling. You know the expense of running a spirit level. It entails cutting a line through the country—going through all obstacles—and the employment of a number of men and rod men. You know what that expense is. What did I do in my case when I was at the Forks of the Skeena? I took the map and saw what I had to explore from the Forks of the Skeena to the Omineca and Peace River. I knew nothing of these levels. I picked out five, six or seven datum points for my two hypsometrical observers. After drilling them into the proper method of using the barometer, which I can assure you is by no means easy—you require to drill a man for some time to use it—I left one man at the Fork of the Skeena with instructions to take observations hourly from six o'clock until nine. The other man had the same instructions, and he was posted perhaps thirty miles away. Those men remained taking those observations through five, six or ten days, sometimes three weeks, according to circumstances, when I reached them and gave orders to move on. At that rate I maintain that ten days observations on the part of those two men, not being more than fifty miles apart, were quite sufficient to give the different levels, which could be tested and proved by the spirit level afterwards, within two or three feet. I mean to say there would not be two or three feet difference, if the difference of level was tested afterwards by spirit level. Now that is a very inexpensive way. Those men were getting \$45 a month each, they lived in cotton tents, and there was very little expense. There was their wages and their provisions, perhaps \$60 a month, or \$120 a month for the two, or \$360 for three months. For \$360 I got my levels taken. Now that was a very cheap way of doing it.

Fixed on some "seven datum points" for his two observers, and left one at the Fork of the Skeena and posted the other about thirty miles distant.

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Character of
Survey.**

Carried an aneroid, a syphon barometer, and a mercurial barometer, a pocket sextant and a micrometer telescope.

I always carried an aneroid in my pocket and a syphon barometer slung over my back. The aneroid you can place no reliance on whatever. In the survey for the Union Pacific Railway they never relied on the aneroids to ascertain levels. You do not know what your aneroid is doing. It is all guess work. It may play any quantity of tricks. An aneroid is very good so long as it is brought every now and then in contact with a mercurial cistern barometer, so that they can be tried and compared. I carried a mercurial barometer with me all the time in addition. I carried a pocket sextant and micrometer telescope where we could take distances with the micrometer.

22396. Did you, yourself, teach those two persons who were at the stationary posts?—I taught them myself. Yes; I spent a week teaching them.

22397. Were they efficient?—Quite efficient. I did not leave them until I had tested them two or three days.

22398. In making those explorations as you made them, would the most difficult work be at the intermediate points?—The other work was easy, it was sitting down, so long as they took the hourly observations correctly. I had the difficult work to do, because I was always on the move looking after routes and passes through the country. I always connected those points where the men were, with my other journeys. Then, remember, at the same time, I had a portable barometer on my back, and whenever I stopped anywhere I hung up my barometer, if it were only for two or three hours. Wherever I stopped after dinner, I took an observation—before dinner and afterwards—and I knew at the same moment my assistants were taking a note also. It can be done beautifully when properly worked.

**Simple way by
which facts of
exploration can
be gained**

22399. Is it difficult to find persons who can attend to this simple matter?—I do not think so. I do not pretend to be anything extraordinary myself, and I found it easy to do, and I taught myself.

**Not difficult to
get persons to
attend to the
steps in bare
exploration.**

22400. Can this sort of work be done by persons who can easily be found?—Yes; with perfect ease. I would undertake to teach any man here to do it in a week.

22401. Do you think the scarcity of competent men to do that work would be the cause of not adopting that system?—Any man could take the observations.

22402. But the intermediate work?—That is a different matter.

22403. I understood you to say it was not difficult?—It was simple to me; but really and truly I think they are more difficult to find simply because they have never done it, and it may be they never tried to do it.

22404. Would it be difficult to train or get men competent to explore by bare exploration rather than by instrumental survey?—Not at all; it would not be difficult. Any man who is not lazy, and could be depended upon to use his legs and brains, could do it, but he would do it far better if he were a surveyor or engineer.

**Any man who
could use his legs
and brains could
do it.**

22405. Do you think any person who was trained professionally as a surveyor or engineer ought to be able to do this intermediate work with a little teaching?—Yes; decidedly.

22406. Do you think persons could be found in the country without difficulty?—I think they could.

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Character of
Survey.**

The surveys in British Columbia could and should have been performed by simple exploration as described above.

22407. Plenty of them?—I think every surveyor could do it. Mr. Marcus Smith understands it. He understands the subject. He knows the way in which I used to take those levels.

22408. Well, it appears that you did what work you were called upon to do very carefully and very skilfully, but perhaps they could not find a great many who could do it quite so well, and the question arises whether the examination in British Columbia might not have been undertaken, in the first place, only by explorations, rather than by instrumental surveys,?—Well, I presume that Mr. Fleming had never anything of that kind under his experience before. I do not suppose that he ever conducted surveys in that way before, and, in fact, I doubt if he ever heard of that kind of thing unless from books—unless from the Pacific Railway surveys—and I certainly think those surveys in British Columbia could and should have been performed in that way.

22409. Did you give consideration to the subject of obtaining competent men?—I should be sorry to think no competent men could be found to do it. As I said before, every engineer could be competent to do it.

First connection with British Columbia section in 1872; in 1871 explored with Moberly between Winnipeg and the Rocky Mountains.

22410. When did you first become acquainted with the British Columbia section?—In 1872.

22411. Before that had you been employed in similar work?—Only with Mr. Moberly in 1871. That was the first exploration I made.

22412. Where was that?—Between Winnipeg and the Rocky Mountains.

22413. Had you any particular preparation which fitted you for this work?—Never. I doubt if I had ever seen an aneroid before that.

22414. What had been your occupation before that?—I had been Chief Accountant in the Southern Department of the Hudson Bay Co. I had been in different occupations before that; I had been a gold digger.

Witness had no scientific training before working with Moberly.

22415. That sometimes gives one a knowledge of levels as well as of drifts?—I can conscientiously say I had no scientific training before that. Of course I had been fond of that kind of thing and read it up, but I never had a chance to put it in practice, and on Mr. Moberly's exploration in 1871 we were very poorly fitted out for taking levels. Fortunately, the country Mr. Moberly had for his examination, between Winnipeg and Edmonton, was prairie country—an undulating country where the system I speak of would not have been very well adapted; but I saw at once in the mountain country how the barometer would do, and I, by mere accident, saw Major Williamson's work on the barometer and got it and studied it up at once, and recommended it instantly to Mr. Fleming, but he took no notice of my recommendation.

22416. I understand you to say that, from your experience, you have concluded that a profile of country may be laid down with tolerable accuracy by simple explorations?—Yes.

A profile of the country can be made by simple exploration, the barometer being used for the vertical and the micrometer for the horizontal element.

22417. For instance, you may use the barometer, either aneroid or mercurial, for perpendicular measurements?—Yes, for the vertical element.

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Character of
Survey.

22418. And the horizontal element may be ascertained by the micrometer?—Yes; by triangulation, by difference of latitude, and in many ways.

22419. But it gives one sufficient information to make a tolerably correct profile?—Certainly.

22420. Not so accurate as would be secured by an instrumental survey?—Very nearly. A micrometer will give it just as accurately, because I contend, if a man takes the measurements accurately with a good instrument he will take more accurate distances than by chaining. You know errors are very apt to creep in in chaining over rough ground, whereas by the micrometer the actual distance is measured.

Thinks measurements may be made nearly as accurately by a micrometer as by chaining.

22421. You measure through the air instead of upon the surface?—Certainly, if a man has a proper instrument and knows how to use it. Chaining correctly is a very difficult matter over rough ground.

22422. Can sufficient information be obtained by exploration so as to give the Chief Engineer information as to the feasibility of particular routes, although not so accurate as to give actual quantities?—I think that information such as I got was quite enough for any engineer to decide. He might have said here are four or five routes that have been explored by barometer or micrometer, or usual explorations. He could see before him as plainly as possible which was the best route, and send an instrumental party upon it at once. Here is the Cascade range, and here are four or five inlets into the Cascade range. Here are the profiles. As Mr. Marcus Smith said: "I would be far from questioning the accuracy of your levels, because I doubt very much the accuracy of our own levels." For instance: he said, "there was one set of levels run in from tide water and another from the interior, and they differed by eighty feet." Why, to-day, there is a difference of thirty feet at the Yellow Head on the system of surveys going from Red River west, and another coming east from the coast. I think it is mentioned in the reports. I always, in my levelling with the barometer, took care to have one or two simultaneous observers somewhere else, and I never lost an opportunity of taking an observation. I had the barometer on my back, and if we stopped to sit down, perhaps even to have a smoke, I would set up the barometer, take it out of its case in a jiffy, and take an observation, and at particular points I knew I had to refer to afterwards I always stayed two or three hours—perhaps a day. There is no question whatever, had the system which I used been employed hundreds of thousands of dollars would have been saved to the country; but what was done in the first instance? The very first line run in British Columbia was an instrumental line.

Necessity of testing observations made with the barometer.

22423. I understand the principal object gained by this exploration of yours in the neighbourhood of the Pine and Peace Rivers, was to settle the feasibility of the Pine River Pass rather than the Peace River, or, more correctly speaking, not the feasibility but the advantages which one possessed over the other?—In the last year, of course, I had nothing to do with them. My work was west of that. Mr. Fleming sent out Mr. Cambie and Mr. MacLeod to determine that—to find out all about Peace River and the Pine River. He was working, evidently, on the supposition that my previous work was worth nothing. He laid that by as if it did

Peace and Pine
River Passes.

**Surveys, E.C.—
Peace and Pine
River Passes.**

Fleming sent
witness in 1872 to
see if the Peace
River was
feasible.

Saw that Peace
River was im-
practicable.

Pine River Pass
the better one.

not exist. He sent me, in 1872, to see if the Peace River was feasible; to get all the information I could upon that. He had apparently set his mind upon the Peace River; but when I saw the country I saw that the Peace River was impracticable; I said it was impracticable, and I say it to this day, because any line approaching the Peace River from the east has to encounter those prodigious valleys of the White Fish River, the Pine River, and all those other rivers—enormous rivers with enormous valleys, 600, 700 or 800 feet deep, and perhaps a mile wide, to cross.

22424. If either of those passes had eventually to be adopted, your opinion is that Pine River was the better one?—Decidedly, and Mr. Gordon says so to. He says distinctly in his book that the Pine River Pass is the best pass.

22425. The Rev. Mr. Gordon?—Yes.

22426. Is he a good authority?—I think so.

22427. Why?—He was sent out by Mr. Fleming to make a report upon the feasibility of the pass. He is described as the assistant of Mr. Cambie.

22428. For the present you think he is a good authority?—Yes; I think so—that is to say, he is a good authority, inasmuch as he has culled his information from good authorities.

22429. How are you aware of the sources of his information?—His telegraphic report.

22430. But the source of his information?—Messrs. Cambie and MacLeod are the sources of his information.

22431. Then it is because Mr. Cambie and Mr. MacLeod say it is the best?—Yes; Mr. Cambie says distinctly that the Pine Pass is the best. He says here (quoting from a Departmental report):

“The Peace River, which is the lowest known pass through the Rocky Mountains, offers a wonderfully favourable line for a railway through that range, and for sixty miles east of its main summit.—”

But further on he says:

“The Pine River Pass is also a remarkable one, and though the elevation is much greater than by the Peace River, the work in passing through the mountain range would be lighter.”

You see that is conclusive evidence.

22432. I think for the present we will not take up further time with the comparative merits of those two passes: I understand that you have some information which you wish to give privately, with the view of eliciting further evidence in the public interest as to matters connected with the Pacific Railway?—Yes; it will be private information.

OTTAWA, Tuesday, 28th June, 1881.

CHARLES HORETZKY's examination continued:

By the Chairman:—

22433. We received notice from you that you wished to add something to your evidence?—I purpose giving some details respecting the survey by Mr. C. H. Gamsby, in the winter of

Cambie favours
the Pine River
Pass.

Surveys, B.C.—
Kitlope Valley.
Gamsby's Expedition.

1875-76, of the River Kitlope, the principal affluent of the Gardner Canal, north-west coast of British Columbia. In the evidence given last November, I made a passing allusion to that survey, and as Mr. Gamsby's report upon it (see appendix I, page 177, of the general railway report of 1877) contains a wilful misrepresentation, which reflects very seriously upon the truth and accuracy of my previous report of 1874, it becomes my duty to bring the matter before the Commission. In summarizing the results of my examination of the various inlets and their approaches from the interior of British Columbia, in 1874, I wrote as follows (Extract from my report of 1874, page 29 original MS. suppressed and mutilated, as I have already sworn):

"Gardner Canal being the next in order, it will be well to offer a few brief remarks thereon. An inspection of the map of British Columbia will show its general size, length, and approaches. It will suffice now to remark that, in general, this inlet possesses the same drawbacks as the Dean Canal, being characterized by great depth of water and an absence of good anchorage. Its appearance, however, is more forbidding; high bald mountains of frightful aspect close it in on every hand, imparting to the beholder a depressing sense of desolation and gloom. Suppressed passage from witness's report of 1874.

"The Kimano, one of the two large rivers flowing into it, has been already described. The Kitlope, the larger, now remains to be briefly alluded to. No actual exhaustive exploration of this stream was made, for the reason that it was purposed to examine it from the source downwards, and that, towards the end of the season, the knowledge of the country acquired by a visit to the region where two of its three origins lie, made a journey down that stream a matter of supererogation. At its mouth the Kitlope enters the sea through a flat and swampy bottom, encompassed by huge glacier-capped mountains. A few miles higher up, report [Indian] says that the valley improves, and that the mountains recede, and are less abrupt. I can readily believe this, and know that, at a distance of six or seven miles from the actual water-shed of the Cascade range, the north-west branch of the Kitlope River does really flow through a valley of moderate extent, but, unfortunately, at an elevation above sea of less than 1,100 feet; and, moreover, that, in the direction of its source, *i. e.*, to the north-west, there is nothing visible but a perfect sea of glacier-capped mountains. It is possible, but very far from probable, that the branch in question *may* lead to a pass. Such a pass, if there be one, cannot be much less than 3,000 feet above the sea, and, considering the close proximity of the water-shed, or summit, to the low valley which I saw, I think the inference may be safely drawn that in this quarter no practicable route is to be looked for.

"The third and principal branch of the Kitlope has its origin [Indian report] in a glacier-fed lake situated west of the Tsatsquot Valley, and in the *very core* of the Cascade Mountains.—"

Note the italics—this last being the branch followed by Mr. Gamsby in February, 1876—

"* * * The result of the season's work has been to find that, with the single exception of the Kemsquit River, all the streams flowing into the inlets examined, derive their waters from glacier sources invariably situated west of the water-shed"

An inspection of the map of Tsatsquot Valley, which also shows a portion of the upper valley of the Kitlope River, will render the foregoing extract perfectly intelligible.

2443. Please look at this map (Exhibit No. 318) and say if it is the one to which you allude?—That is the one. I produce this map. Mr. Marcus Smith read the report referred to, examined the map, and came to the conclusion that further examination of the Kitlope Valley would be a waste of money. It was evident to any person, even not possessed of engineering knowledge, that to rise from an elevation of less than 1,100 feet above sea to an elevation of 3,100 feet above the same datum, in a distance of six English miles, through a rugged canyon, such as that of the north-east Fork of the Kitlope, was out of the question for a railway, gradients of 340 feet per mile being quite incompatible with the successful working of either eastern or western transcontinental freight. The former elevation (1,100 feet) Marcus Smith on reading the report and examining the map came to the conclusion that further examination of the Kitlope Valley would be waste of money.

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being the extreme altitude of the lower Kitlope Valley, the latter (3,100 feet) being the altitude of the Tochquonyala summit, (both shown in this map), and the north-east Fork of the Kitlope being the only means of communication between the two. Mr. M. Smith saw all this at a glance, as indeed any engineer would have seen, my report and map not only demonstrating the facts very clearly, I think, but also showing by a red line that the only possible way to reach the watershed of the range from the sea, in this quarter, was from the head of Dean Canal, and by skirting the eastern slopes of the Tsatsquot valley to the heights above Beaver Lake, and thence along the eastern heights of the ravine of the north-east Fork of the Kitlope. Mr. Smith had even little faith in the feasibility of the route shown by the red line. The only one he judged worthy of instrumental survey was that of the Kemsquit or Salmon River, only partially explored by me late in the season of 1874, for a distance of thirty-five miles from sea. This river did, however, appear to him, from the fact of its origin upon the interior plateau, likely to offer favourable gradients, and hence its subsequent survey which was not very satisfactory.

The Kemsquit route the only one Marcus Smith considered worthy of an instrumental survey.

22435. Do you mean satisfactory in its results, or in the manner in which it was done?—In its results as to grades and work.

22436. It showed nothing encouraging?—Upon the whole it did not. In the report of 1877 there will be found a table of the gradients in the Kemsquit.

Notwithstanding the objections to the Kitlope, Fleming had an instrumental survey made in 1876, by a party in charge of C. H. Gamsby.

22437. That is what you mean when you say the survey was not satisfactory?—Yes; it was not a good line in reality. Notwithstanding the very apparent objections to the Kitlope or Gardner Canal route, Mr. Fleming decided upon making an instrumental survey of the Kitlope from Gardner Canal to Lake Tochquonyala summit; and in February, 1876, the steamer *Sir James Douglas* sailed for the head of that inlet with a fully equipped instrumental party of engineers, attended, I believe, by the usual commissariat, and the whole in charge of Mr. C. H. Gamsby. Turning now to Mr. Gamsby's report of that survey (see page 177 of the C.P.R. report of 1877), we find that, instead of following up the Kitlope to the Tochquonyala Lake and Pass, indicated by me in 1874, he took the branch of that river coming from the north-east, which trends afterwards to south and seaward (the third and principal branch referred to in my suppressed report). And, at the thirty-sixth mile from his initial point, he reached a summit 1,150 feet above sea. He then writes with perfect gravity:

Gamsby missed the country explored by witness.

"One mile due north from the summit we struck Tochquonyala Lake, its elevation is 1,000 feet; it lies due north for two miles then north-east for one and a-half miles, and is about thirty chains in width. A fair sized stream flows from the north-east end of the lake; its course is north 20° east for six miles, when it falls into a much larger stream coming from the north-west, and flowing south-east and south. The elevation at the junction of these streams is about 700 feet, and the whole distance from our initial point at the head of Gardner's Inlet forty-six miles. The Kitlope Indians call this large stream Chedsquit—"

The Tsatsquot of my report—

"and affirm that it flows into the head of Dean's Inlet."

Mr. Gamsby had actually been travelling towards the sea coast, instead of to the summit of the Cascade range, and had been following one of two low depressions extending between the Gardner and Dean Inlets, neither of which exceeds in elevation, 1,200 feet above sea level. The point reached by Mr. Gamsby, also the most northerly of the two depressions alluded to, are both plainly laid down on the map

now submitted, which was deposited in the Department in March, 1875, by me. But to crown Mr. Gamsby's most extraordinary assumption, he went on to say :

"Having ascertained that Lake Tochquonyala was not the summit, nor near the summit of the Cascade range, and that there was no possibility of reaching that summit by this route, I decided to return. * * * We broke up camp on Tuesday, March 28th, and reached the coast on April 3rd."

This was tantamount to saying that the two paragraphs at top of page 142, of Mr. Fleming's general railway report for 1877, written by me, contained a pure and simple fiction. Now I distinctly stated in the paragraphs referred to, that

"A mile or so east of this glacier source [of the north-east Fork of the Kitlope] I discovered a pass through the comparatively low mountains forming the rearmost longitudinal mass of the Cascade range. This pass presents direct communication between the upper part of the ravine of the north-east Fork of the Kitlope and a beautiful sheet of water situated on the eastern plateau, amidst the outlying spurs of the mountains, and to which I have given the name Lake Tochquonyala. This lake is situated at an elevation of 2,920 feet above sea level, its upper end is in latitude 53° 20' 13" nearly, and it discharges into Lake Nateltichen, to which I have already referred, and of which the elevation very probably approximates to that of Lake Tachelkin, 2,802 feet."

Fortunately, in proof of the above quotation, I can produce my observation book which contains the details of two excellent meridian sights, and the resulting calculations for latitude on each side of the Tochquonyala summit; also the hypsometrical observations by a proved mercurial barometer during three days, and the corresponding simultaneous readings at sea level, for the level altitude of the pass and lake, and a photographic bird's eye view of the lake itself. With this incontestable proof, I now challenge Mr. Gamsby's fictitious report, the insertion of which in an important Blue Book is an insult to the public, a degradation to the engineering profession, and calculated to injure my reputation if allowed to pass unchallenged. Far be it from me to cast aspersions upon the three engineers who assisted Mr. Gamsby; they, I presume, only obeyed orders, and must have suffered much hardship when engaged on their wild goose chase, in search of a railway route from Gardner Canal to Tochquonyala Pass. But there is no excuse whatever for the insertion of a deliberate and most incorrect statement in the public report, a statement which, one year previous to its authorized publication, was known to Mr. Fleming and to the whole British Columbia staff of engineers to be false. Divesting the whole circumstance of this survey of the great expenditure attending it, which of course, the public and not Mr. Fleming had to bear, the matter assumes a most farcical aspect. Here was the spectacle of a renowned Engineer-in-Chief sitting in his office in Ottawa, and directing the topographical examination of a most difficult and intricate coast range, in utter disregard of the advice of not only his trusted explorer but of his deputy, Mr. Marcus Smith. In direct opposition to the very clearest explanations from myself and from Mr. Smith, he orders the instrumental survey of a route such as I have described that of the north-east Fork of the Kitlope to be, sends out a steamer with no fewer than four engineers and a large staff of men, who lose the way, waste time and the public money in making forty-six miles of an utterly useless survey, and, to crown the huge blunder, return with the report that I had misled them by my report of 1874. In June 1876, a few months after the performance of this feat, Mr. Fleming questioned me upon the subject by aid of a map, and said: "Is it evident that Mr. Gamsby missed his object. Where do you think he got to?" And I explained that he had followed that branch of the Kitlope which has its source west of the Tsasquot Valley,

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Challenges
Gamsby's report.

Farcical character of the situation from an engineering point of view.

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Gamsby's Expedition.

and in the very core of the Cascade range, as stated by me at pages 30 and 31. of my suppressed report, and that the end of his survey was at my canoe encampment of the 23rd, 24th and 25th September, 1874.

22438. When you make use of the expression core of the Cascade range, do you mean that that is about the highest portion of the Cascade range in that neighbourhood?—The very highest and the most impracticable, and the furthest away from the goal we were in search of—from the summit.

22439. But the core?—That means the very centre of the range, and I think the position of Mr. Gamsby's lake, geographically speaking, is in the core of it—the very central part.

Width of Cascade range in this part about sixty miles.

22440. What is the width of the Cascade range, in round numbers, at that part of the sea coast?—I should say about sixty English miles; I think that is about the average width. Of course, the mountains dipping into the sea coast are the Cascades. They extend back for sixty miles, generally speaking—very many miles, at least, in jumbled masses without any valleys whatever.

22441. I understand that there is a depression, a sort of valley, between the head of Gardner Inlet and the head of Dean Inlet which cuts off a large portion of the Cascade range between that and the sea coast?—Yes; there are two depressions between the Gardner and the Dean.

22442. I thought there was one main one occupied partly by the Kitlope and partly by the Tsatsquot?—Yes, that is probably the main one.

Between the main depression and the coast lies the core of the Cascade range.

22443. Then, as I understand you, between this main depression and the sea coast is situated what you call the core of the Cascade range?—Yes; although at that very core there happens also to be a depression between the Gardner and the Dean Canal.

22444. And it is at that depression to which you now allude, that you think Mr. Gamsby's exploration found the lake which he called Tochuonyala?—That is the depression leading directly from the head of Dean Canal to Gardner Canal and that depression is, by Mr. Gamsby's own tale, 1,200 feet above the sea.

22445. But in order to reach that lake which he calls Tochuonyala, he had really to adopt a course leading away from this main depression connecting Gardner Inlet and Dean Inlet, and approach nearer to the coast?—No; he followed the depression.

22446. He did not follow this main depression?—He followed one of those two depressions which, I say, exist between Dean and Gardner. He followed the most southern depression, but those depressions led nowhere, as far as his proper search was concerned.

Gamsby took a direction towards the coast at an angle of 90° from his proper course.

22447. But the direction he took was towards the coast?—Towards the coast—towards the head of Dean Canal, and consequently towards the coast.

22448. It was not towards the central plateau which was the main object of your exploration?—No; it was the diametrically opposite direction; or, at all events, he was travelling at an angle of 90° from his proper course.

22449. Please proceed?—Notwithstanding this knowledge, Mr. Fleming allowed Mr. Gamsby's erroneous report to be published one year

after, and suppressed more than twelve foolscap pages of mine containing valuable and authentic information. One of Mr. Gamsby's engineer's has told me that the Indians told them that the lake situated at an elevation of 1,100 feet above sea, and which Mr. Gamsby mistook for the true Tochquonyala Lake, was the lake he was in search of. In answer to this, I would say that they should not have been dependent upon Indians to direct them; and that the designation Tochquonyala was only known to myself (the name having only been used in my note-book and subsequently in my map), and that had they enquired for Lake Ontario or the Zuyder Zee, they would, in all likelihood have obtained a similarly affirmative answer.

22450. I understand you to mean by that, that in that portion of the world there was no lake generally known by the name Tochquonyala?—None.

22451. So that there could be no knowledge among the Indians which would assist them?—None whatever.

22452. And that you had, in your previous report said this name was one given by you to the lake which you found?—Yes.

22453 I understand you to suggest that it was unreasonable to expect that Indians could tell them where that particular lake was?—Perfectly unreasonable. I did not proclaim the name of the lake to the Indians. I did not proclaim to them that I had named the lake.

22454. This name, then, was to be found in your previous report and in your map which accompanied it and in the instructions given to Mr. Gamsby?—That was all. In the second place, engineers should have been able to tell the hypsometrical difference between the true and false Tochquonyala Lake, the quantity 2,900 not being easily taken for 1,100, and they should, moreover, have determined by observation their actual position, and, besides, they must have been sensible of the fact that they were altogether out of their reckoning.

Engineers should have been able to tell the difference between the true and the false Tochquonyala, there being 1,800 feet difference between their altitudes.

22455. Do you find in Mr. Gamsby's report any evidence that he ascertained their locality by latitude or in any other way?—In only one place has he mentioned having taken the latitude, that is at their initial point.

22456. So that as far as his report shows, he did not use such means to ascertain whether he was near the point which you reported to be the locality of this lake?—I cannot find that he has. He may have, but I cannot find it in his report, and if he did take those means, then he must have made a most woeful blunder, because the probability is the true difference in latitude between my Tochquonyala Lake and the one which he took for Tochquonyala Lake is at least sixteen English miles.

22457. Please proceed?—Under such circumstances I claim that it was unpardonable to frame a report calculated to leave the impression that I had either wilfully or in ignorance misled the Chief Engineer in my report of 1874. I now produce the entire original MS. of my suppressed report of November, 1874. (Exhibit No. 319.) It will be observed that entire pages, besides important passages, have been cut out. Those portions I have marked in pencil. I would call particular attention to pages 20, 21, 22 and A, detailing the engineering features of the Tsatsquot and Tochquonyala route from Dean Canal, indicated

Tsatsquot and Tochquonyala route from Dean Canal as feasible, if the Kitimat route be excepted, as any north from Burrard Inlet.

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Designation of
Tochquonyala
Lake originated
with witness;
therefore it was
absurd to ask an
Indian whether a
certain lake was
Tochquonyala
and take his
affirmative
answer as con-
clusive.

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on the map by a red line. I now beg to say that making due allowance for a possible over-estimate in the distance between the middle Fork of the Tsatsquot and the Tochquonyala summit, a distance which, owing to the peculiar difficulties of the ground, I was unable to measure, but which was checked to some extent by difference of latitude and rough triangulation, when the favourable character of the country upon the interior plateau, east of Lake Tochquonyala, is taken into account, and weighed against the estimated three miles of tunnelling, the eleven miles of heavy rock work, and the steep grades, unavoidable upon the Pacific side of the water-shed, in my opinion, that route would have been found no more costly than that of the Kemsquit River, and, with the exception of the Kitimat route, probably as feasible as any other north from Burrard Inlet. The work performed by me in 1874 comprised a reconnaissance of the Kimano, afterwards verified instrumentally by Mr. Trutch; reconnaissances of the Lachaques and Kitimat Rivers; of the main, north and north-west branches of the River Tsatsquot; of the north-east Fork of the Kitlope, and of thirty-five miles of the Kemsquit or Salmon River, afterwards verified instrumentally. In addition, a general examination of the coast and inlets from Douglas Channel to Bella Bella was made. In order to save expense, the sloop *Triumph* (of about twelve tons register) was sent back to Victoria from the head of Dean Canal, leaving me with two white men and the sloop's dingy to finish the season's work and find our way back as best we could. On the 8th or 10th of November, we reached Bella Bella after working our way from the head of Dean Canal at great risk, and on the 27th of December we set sail for Comox, on Vancouver Island, in an open canoe, terminating the voyage upon the 8th January, 1875. The total cost of the expedition was, with the exception of the sloop's charter, one-third of which should have been defrayed by the Geological Survey, \$2,112.13, as per following statement; these facts are suggestive of what might have been done by the system of reconnaissance in the beginning :

Work performed by witness in 1874; a reconnaissance of the Kimano, the Lachaques, and the Kitimat; the Tsatsquot, the Kitlope and the Kemsquit; a general examination of the coast.

Total cost of Horetzky's expedition.

DETAILED account of expenses of C. Horetzky's coast and Cascade range exploration of 1874 :

1874 May,	Hudson Bay Co. supplies	\$387 03
" " "	" " " Steamer Otter	13 00
" " "	" " " Cash, M. Smith's cheque No. 366.	500 00
" " "	" " " July, " remittance to Bellabella	500 00
1875. Jan.,	" paid balance of wages, two men, eight months and one-third at \$45.....	\$750 00
" " "	" " " Less advances.....	37 90
		<u>\$2,112 13</u>

Additional :—Proportion of charter sloop *Triumph* and wages of two seamen, five months, June to end of October, 1874, probably worth \$150 per month, or say \$800, of which two-thirds in any case should have been defrayed by Pacific Survey, the remaining one-third by the Geological Survey, \$533.

With reference to my last examination I produce all my accounts connected with the exploration of 1879. (Exhibit No. 320.)

Showed in 1874 that there was no feasible route through Kitlope Valley.

22458. Do I understand your evidence to-day to suggest, that your exploration of 1874 showed that there was no feasible route through the Kitlope Valley on account of a sudden rise between Beaver Lake and Tochquonyala Lake—that is, a rise from 1,100 feet above the sea to 2,900 feet above the sea through a pass of 3,100 feet above the sea, and all in a distance of six miles?—Yes; that is my meaning.

22459. And that, therefore, it ought to have been known before it was made, that the instrumental examination of the Kitlope Valley in 1876 would be useless?—Yes; perfectly. That is my meaning.

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Therefore examination in 1876 useless.

22460. I understand you to suggest, also, that after this instrumental examination was undertaken by Mr. Gamsby, he went out of his course in such a way as to make his examination abortive, and that that was known to Mr. Fleming before he published his report of 1877?—Yes; it was known to Mr. Fleming.

Known that Gamsby reported about the wrong lake, yet Fleming allowed his report to appear in the report of 1877.

22461. And it was known that Mr. Gamsby had made a mistake, and was making reports upon a lake which was really not Lake Tochuonyala at all?—Yes.

22462. And that, notwithstanding that knowledge, Mr. Fleming permitted Mr. Gamsby's report to appear in the general report of the Engineer-in-Chief, while portions of your previous report, which by comparison would show the uselessness of this last survey, were suppressed?—Precisely; that is my meaning.

22463. Do you know whether those portions of your first report which were suppressed would point out, in the way that you describe, any matters connected with that route, so that their suppression renders Mr. Gamsby's services apparently more useful while the publication of your full report would have shown them to be useless?—Yes; I think that by putting my report and his report in juxtaposition, any one reading both reports would consider I had made a mistake. That would be the natural inference; that I had misled. That is the way I look at it.

The parts of witness's report suppressed of a character the suppression of which made Gamsby's report appear more useful.

22464. Would you look at your original report and name the pages on which any portion appears which would have that effect if it had been published instead of suppressed?—The suppressed portion is on pages 29, 30 and 31. I think the matter contained there will show that it was perfectly useless to survey the Kitlope Valley. That was my intention, and I point out again why. It must have been my object to show this, because you see I have underlined certain words. I say here in one part: "It is possible, but very far from probable, that the branch in question may lead to the pass."

22465. What branch?—That is the north-west branch.

22466. Is that the branch which he followed?—No; that is not the one he followed.

22467. Which one did he follow?—He followed the most southerly branch of all.

22468. When you say southerly branch, you mean, I suppose, the branch coming to the main river from the south?—From the south.

22469. Flowing in a northerly direction?—From the south and west.

22470. Flowing then in a north or north-easterly direction?—His course from the mouth of Gardner Inlet was east and north, but instead of that he went south and east. He has been steering south and east.

Gamsby's proper course from the Gardner Inlet east and north, but instead of that went south and east.

By Mr. Keefer :—

22471. He has not laid down the latitude and longitude on this map?—No; he has laid down the latitude at the initial point 53° 12' 20"; but so far as I can gather from an examination of his report he

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took no other observation. It is distinctly understood that he travelled to the east and south.

By the Chairman:—

Describes Gamsby's course in 1876.

22472. Please look at the map which has come from the Department and purports to be the topography of that survey by Mr. Gamsby in 1876 (Exhibit No. 321) of the line and exploration from the head of Gardner Inlet up Kitlope Valley *vid* the outlet of Tochquonyala Lake: does this map show the course that he took for the examination?—Yes.

22473. Describe it so that the notes of the evidence will give it?—His first course from the head of Gardner Canal was about south-east.

22474. That was following the main river?—That was following the main Kitlope.

22475. Did you at any time go over any portion of the Kitlope nearer the sea than Beaver Lake, for instance?—No, never.

Portion traversed by Gamsby unknown to witness.

22476. Then this portion which was traversed by Mr. Gamsby was unknown to you?—Altogether unknown to me except the mouth. I had been at the mouth.

22477. Had you seen at any time any topographical sketch covering this portion of the country until now?—Never before.

22478. Then I suppose you are not able to say at what point of his survey he first went wrong, and instead of following the main river took only a branch of it?—I cannot say where he went wrong.

22479. It appears he followed at first the main river?—It is difficult to tell. Possibly this branch he followed may have been as large as the branch leading to the north-eastern fork.

22480. Have you any belief that he followed the main channel?—It is perfectly plain that he did not follow the channel leading to the north-east fork designated by me in my report.

The lake which Gamsby calls the Tochquonyala empties into the Tsatsquot.

22481. It appears from this plan that the lake which he calls Tochquonyala Lake really empties into the 'Tsatsquot River?—Yes.

22482. Does it not appear by this map that before coming to Lake Tochquonyala, according to his description of it, that he left altogether the waters of the Kitlope?—Yes; he left the waters of the Kitlope the moment he crossed the water-shed.

22483. There is a water-shed between his Lake Tochquonyala and the Kitlope River?—According to his report there is.

22484. And according to this map before us (Exhibit No. 321)?—Yes.

22485. Did your previous report and map show that the Tochquonyala Lake could be reached by leaving the waters connected with the Kitlope River?—There is a summit between them of 3,180 feet between the north-east Fork of the Kitlope and my lake.

22486. What was the height above the sea of the waters of the Kitlope where you left it to go through that pass of yours?—2,900 feet, the height of the waters of the Kitlope where I left it.

22487. And the height of the pass itself was?—3,180 feet.

**Surveys, B. C.—
Kitlope Valley.
Gamsby's Expedition.**

22488. Then you descended again to Tochquonyala Lake and down to what height above the level of the sea?—Down to 2,920.

22489. Had you marked on your plan and report the latitude in which those points would be found?—Yes; I took two very careful and good meridian latitudes on each side of the Tochquonyala summit, that is to say, north and south of it.

22490. And about what latitude was this summit?—The summit was very nearly in latitude $53^{\circ} 20'$ and the two other latitudes I took were respectively $53^{\circ} 19' 32''$ and $53^{\circ} 20' 13''$.

22491. You said before that you saw in his report—that is Mr. Gamsby's report—no evidence that he had ascertained the latitude of his lake Tochquonyala?—Yes.

22492. Could you state now about what latitude that appears to be in looking at his map and at yours together?—It appears to be in latitude $53^{\circ} 6' 20''$, that is to say, the most northern portion of the lake.

22493. And what would be the most northern portion of your lake on your map?—About $53^{\circ} 22'$.

22494. How much further south was his lake than the one you had described?—About $16''$ of latitude further south.

Gamsby's lake about $16''$ farther south than that described by witness, or about eighteen English miles.

22495. How many miles?—About equal to eighteen English miles.

22496. Then, is there any doubt that ascertaining the latitude of his lake would have shown that it was not the lake to which you alluded?—Oh, no doubt of it. A good sight at the lake which he reached would have proved to him at once that he was astray.

22497. Have you ever spoken to Mr. Gamsby on this subject?—Never.

22498. Or any one on his staff?—I think I have spoken to Mr McNicol.

22499. I mean on his staff during that particular survey?—During that survey, yes.

22500. What account did he give you of the transaction: was it understood to be a mistake or was it believed until now to be correct?—It is three years ago since we had a conversation on the subject in the street, and I think that he made a quasi-admission that they knew themselves to be astray—that they knew that lake was not the lake they were in search of. I gathered from Mr. McNicol that the feeling among his brother engineers was that they certainly were not at Lake Tochquonyala.

McNicol, one of Gamsby's party gave witness the impression that they knew they were not at the right Tochquonyala.

22501. Reaching the lake which you had described in your previous report was the main object of this exploration?—Yes; so it appears from Mr. Gamsby's own report. He says so. He says distinctly that it was to reach Tochquonyala Lake *via* the Kitlope Valley.

22502. I understand that although you, in your exploration, had ascertained that there was an insurmountable obstacle between the pass near Tochquonyala Lake and the Beaver Lake, on account of the sudden rise, that there was no obstacle which could not be overcome by going along the Tsatsquot Valley from the same pass, keeping up on the sides of the hills so as to travel a greater length of country, and, therefore a more gradual descent, ending at Dean Inlet?—Yes, that was my idea.

**Surveys, B.C.—
Kitlope Valley.
Gamsby's Expe-
dition.**

Witness reported
that route along
the Tsatsquot
would justify an
instrumental
survey.

**Between the
Cascades and
Francois Lake.**

Marcus Smith
sent witness to
photograph the
Homathco.

So much time
was lost the in-
tended explora-
tion never took
place.

For 1875, all the
work witness did
was photograph-
ing the Hom-
athco Valley ;
the year was lost.

22503. You recommended or thought that this Tsatsquot route might justify an instrumental survey?—Of that route along the Tsatsquot Valley.

22504. But that was not the Kitlope Valley proper?—Oh, no.

22505. So that this survey by Mr. Gamsby was not following out any suggestion of yours?—Oh none whatever; the contrary.

22506. Were you in British Columbia in 1875?—I was.

22507. Did you remain there during the winter of 1874-75?—I left British Columbia some time about the end of January, 1875. Then I went back in May, 1875.

22508. What was the object of your return?—To explore the country lying between the Cascades and François Lake.

22509. Is that somewhere about the region of the Kitlope?—Yes; the interior of the country connecting with this Tochquonyala Pass was the country I was sent out to explore in 1875—all that plateau—but I never went there.

22510. Why not?—Mr. Smith would not allow me to go until late in the season. He sent me up the Homathco to photograph the Homathco before going there, and while at the Homathco the best part of the summer was lost.

22511. Do you mean lost so far as your operations were concerned?—Lost, so far as the northern operations were concerned; I was delayed on the Homathco.

22512. How?—I was in company with Mr. Tideman. I was sent with Mr. Tideman, whose duty it was to make roads in the Homathco Valley, and Mr. Tideman made very slow progress.

22513. For what were you sent with him?—To photograph and to meet Mr. Smith. Mr. Smith was coming down from the interior, Soda Creek. The programme was, I was to go up the Homathco until I met Mr. Smith, and return with him to the sea.

22514. And then proceed northward?—Yes, to François Lake; but so much time was lost that the idea was given up.

22515. About what time did you meet Mr. Smith?—To the best of my recollection some time in July.

22516. Would that have been too late to explore northward?—It would. Not much would have been done there; two of the best months would have been gone.

22517. What did you do after July?—After July I went back to Victoria.

22518. With Mr. Smith?—No; not with Mr. Smith. He arrived in Victoria a few days after I did, and then, after a few days, Mr. Smith sent me up to Soda Creek with instructions to go down the Homathco Valley, and photograph the whole of it. His reason was, he said: "You will be too late to explore further north, and the best thing you can do is to go up there now and make a photograph of the whole of that valley systematically." And I did.

22519. Then, for that year, that is 1875, all the work you did really in connection with the Pacific Railway was photographing?—That is all. The year was lost—entirely lost.

Surveys, B.C.—

22520. Do you not sometimes make explorations after July?—Oh, yes; you can make explorations at any time. **Photographing the Homathco.**

22521. Why was it that on this occasion it was thought July was too late to commence examination?—I do not know; that was Mr. Smith's idea. Mr. Smith said: "As it is too late now to go north, the best thing you can do is to photograph the Homathco."

22522. How long would it have taken to reach the field of operations?—By taking the Fraser River route it might have taken me three weeks to get to Lake François. **Could have got to Lake François in three weeks.**

22523. Was that the shortest time which would be required?—I do not think I could have got there much sooner. I could not have depended on getting there short of that.

22524. That would have made it near August?—Nearly August; still a good deal might have been done then.

22525. What time after the beginning of August would you have for exploring in that country?—I would have had August, September and October. I would have had three months. **Would, had he been allowed to go, have had three months for exploring.**

22526. Instead of doing that work during those three months, I understand you to say Mr. Smith elected to send you to the Homathco Valley?—Yes. In the spring of that year before leaving Ottawa, Mr. Fleming said to me here in the Buildings, putting his finger on the map on that François country—he said: "We want you to go on to explore the whole of that country in connection with the surveys you made before." The instructions I got were to find out all about that country, and I went out to British Columbia on that understanding.

22527. When did you return that year of 1875?—I returned in November. **Returned to Ottawa, November, 1875.**

22528. To Ottawa?—To Ottawa; after returning to Victoria in the first instance, after leaving Tideman, a week or ten days were wasted in Victoria. Then I went up to Soda Creek to take those photographs of the Homathco and pulled my way back myself in a canoe from Bute Inlet to Comox, and got down to Victoria and awaited instructions. Mr. Smith was away at the time. I waited a week or two—I do not remember the exact time. When he came back his decision was, it was too late to do anything and I had better go home.

22529. When did you reach Victoria on the second occasion?—About the beginning of October, I think.

22530. So that between the beginning of July and the beginning of October you were up the Homathco photographing?—Yes; I was about six weeks or two months up there. **From one and a-half to two months up the Homathco photographing.**

22531. Did it happen in any other year that you were not able to do any exploring, road making, or other work?—No.

22532. During each of the other seasons then you were exploring for the benefit of the railway, while you were in the service of the Government?—Yes. The fact is that the whole of the photographing expedition down the Homathco, just occupied about six weeks when I went up on the second occasion.

22533. And upon the first occasion?—On the first occasion we frittered away the whole summer doing nothing at all. Tideman had a poor lot of men with him, the men could not carry. He fell out with

Surveys, B.C.—**Photographing the Homathco.**

the Indians on the way. He made no progress and I had to stick with him, I was helpless.

The photographing no part of the instructions by Mr. Fleming.

22534. But I understand you were detailed for this Homathco photographing by Mr. Smith, and it was no part of the original understanding with Mr. Fleming when you left here?—No; it was in direct contradiction to Mr. Fleming's instructions to me. What happened here I have told you; Mr. Fleming pointed to the map and said, "We want to find out all about this François Lake country." The next day, I think it was, I met Mr. Smith and he said: "You are going out to the François Lake country, but I would like you to take some photographs on the Homathco before you go." He told me that before I left here, but the second time after I returned to Victoria, Mr. Smith decided it was too late to do anything more that season.

The photographs taken by witness are in the Parliamentary Library.

22535. What was done with the photographs which you took that season?—They are in the Parliamentary Library.

22536. Are they on a large scale?—They are six by eight. They are full plates what are called full plate photographs.

22537. About how many views were taken altogether?—Somewhere about fifty. There were a great many more taken, but some of them were broken in transit.

22538. You had no party with you, of course, on this occasion, photographing?—Oh, no. I hired four or five Indians to carry provisions down the Homathco for four or five days. That is all the party I had.

Gamsby's Expedition.

Estimates Gamsby's expedition must have cost \$6,000.

22539. Could you give anything like an estimate of the expenses of such a party as Mr. Gamsby's was, between February and April, 1876, on this Tochuquonyala expedition?—I think I could reach an estimate—a rough estimate—with a little calculation. I should think, without counting the cost of the steamer at all, that the salaries and the provisions for three months (the men were undoubtedly paid three months, including the time they lost going and coming back) that it must have amounted to \$6,000, that is not including the steamer.

22540. Did this steamer belong to our Government, or was it chartered?—To the Government. It was the *Sir James Douglas*. I think she belonged to the Government then.

McNICOL.

EDMUND McNICOL, sworn and examined:

By the Chairman:—

On Bute Inlet survey under Cambie.

22541. Have you been employed on any of the works connected with the Canadian Pacific Railway?—Yes; since 1875, until the end of last year. I was on the Bute Inlet survey first.

22542. Under whom?—Mr. Cambie.

22543. What year was that?—In 1875.

22544. What was the work for that year?—The location of the line from Chilanco River to the junction with Mr. Gamsby. He worked from Bute Inlet up to about five miles above the Forks of the east and west branches of the Homathco.

Surveys, B.C.

22545. What sized party had you?—Twenty-seven men, I think, all told. We had a mule train, but I could not tell you the number of horses exactly, and mules.

22546. You commenced apparently at the north end of this route?—Yes.

22547. Was that easier of access than the south end?—Yes. The other party went in by steamer from Victoria.

22548. They started from tide water?—Yes. We went up the stage road to a place called Soda Creek, and we started from Soda Creek overland to the crossing of the Chilanco. Mr. Jennings's party and Mr. Cambie's party went up together.

22549. And you worked southerly then?—We worked southerly to within about five miles of the two branches or Forks of the Homathco.

22550. During what period were you occupied on that expedition?—We commenced work early in June—about the 6th or 7th of June, I think, and we finished about the end of October.

22551. Was that too late to do any more work?—We got through. We located some sixty-three miles, I think, and continued the trial line some eighteen miles further, but had not time to finish the location that season. Located about sixty-three miles

22552. The weather prevented you from doing all the work you intended?—Finishing the location, yes.

22553. Where did you go in October?—We went down to Victoria, and got up our plans and profiles.

22554. Did you spend the winter there?—I remained until the 2nd of February, and then I started to Gardner Inlet up north.

22555. What year?—That was in February, 1876. We worked in the office in Victoria from October—we got down the 3rd or 4th of November, and the 2nd of February we went up to Gardner Inlet. Kittlope Valley. Gamsby's Expedition.

22556. Who was your chief on that occasion?—Mr. Gamsby.

22557. Then you were not under the same engineer?—No.

22558. What sized party had you?—We had twelve white men and twelve Indians.

22559. What were the Indians for?—For rowing and packing. It was a winter survey, and we had to draw all our supplies up on hand sleighs.

22560. What steamer?—The *Sir James Douglas*.

22561. Of the white men of the party, how many were professional men?—Mr. Gamsby the chief, and three on the staff.

22562. That would be four; what would the other eight of the party be for?—Axe men, chain man, and one man a disc man, for micro-meter purposes.

22563. What was the object of that expedition?—To try and find a pass through the Cascade range. Object of expedition to find a pass through the Cascade range.

22564. What was the principal or objective point?—We went by a map we were given. We were guided by that solely.

22565. What was the understood objective point?—We did not get through the Cascade range at all.

**Surveys, B.C.—
Gamsby's Expedi-
tion.**

22566. I do not think I have asked my question properly: I want to find out what was the object for which you started the expedition?—We wished to get through the Cascade range on to the plateau between that and the Rocky Mountain range.

22567. There is a plateau east of the Cascade range, between that and the Rocky Mountain range, which you wished to reach?—Yes.

22568. Did you understand there was some point on that plateau which you were to reach?—We were to try to get through to François Lake, I think.

**Tochquonyala
Lake the sum-
mit the expedi-
tion was to reach.**

22569. You think that François Lake was named as the place which you desired to reach?—I could not say. Of course I never saw Mr. Gamsby's instructions. Tochquonyala Lake was supposed to be the summit we were to reach.

22570. Apart from any written instructions, was that understood among the members of your party to be the objective point?—Yes; Tochquonyala Lake, it was understood.

22571. Then it was not François Lake?—No; I believe though that that was to be a continuation of that line.

22572. At some future time François Lake was to be reached?—Yes.

22573. But that particular expedition on which you were then engaged was for the purpose of reaching Tochquonyala Lake?—Yes.

**They had a trac-
ing showing the
position of the
Tochquonyala
Lake, and that
was to be the end
of the survey.**

22574. You say that was generally understood among the members of your party?—Yes; we had a tracing on the map showing the position of the lake, and that was to be the end of our survey, I believe.

22575. Did you all leave the steamer, or did any of your party remain on the steamer?—No; we all left.

22576. Did the steamer return?—No; the steamer anchored there during the time we were up on the survey.

22577. Remained within reach? No; of course the Inlet was frozen for twenty-four miles. We landed on the ice, and our provisions and everything we had to haul them on sleds up to the head of the Inlet, and the water was open there for about three miles. We had to take canoes up with us.

22578. What was the first work you did after reaching the land?—We took observations for latitude that afternoon, and ran about two miles of line—instrumental survey it was.

22579. Did you follow the channel of the Kitlope?—Yes, we followed up to the mouth of the Kitlope.

22580. I mean at that time?—Yes.

22581. It was understood that you were to follow the Kitlope Valley?—Yes.

22582. Have you ever seen any tracing or topography of that survey?—I made it myself.

Recognizes map.

22583. Look at the map produced as Exhibit No. 321: is that what you made?—Yes.

**58° 12' 20" the
latitude of start-
ing point.**

22584. What do you find the latitude of the starting point?—It is marked here 53° 12' 20".

Surveys, B. C.—
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22585. Did you take any part in ascertaining that?—I assisted.

22586. This map also shows the ice line?—Yes.

22587. Had you studied the nature of the difficulties to be found in the Cascade range before you were on this expedition at all?—On the Bute Inlet survey; yes.

22588. What general course did you take after you started to explore through the Kitlope Valley?—Simply followed the main valley up.

22589. What course would you call that now?—It is south-east a little—that is, as far as the micrometer survey went—and from that point we started north, a little east of north.

22590. How far do you say the micrometer method was adopted?—About three miles of instrumental survey and the balance was micrometer survey—about twenty-six miles.

About three miles of instrumental, and twenty-six miles micrometer.

22591. When you say twenty-six miles, is that from the starting point?—It is from the starting point to the end of the micrometer survey.

22592. Is that where it joined the Tsatsquot River?—No; that is where it joins the south-west branch.

22593. Then did you change your direction at the end of the twenty-six miles?—Yes.

22594. And what direction did you then take?—Northerly and a little east.

22595. How far did you go that way?—That was track survey, and we estimated the distance from that point to the lake that we were led to suppose to be Tochquonyala Lake; we estimated the distance about eighteen miles.

22596. And did you then reach the lake which you thought was Tochquonyala Lake?—We were told by the Indians it was Tochquonyala Lake. We had an Indian guide with us, and he guided us to this lake and told us it was Tochquonyala Lake.

An Indian guide told them a certain lake was Tochquonyala.

22597. Did you have any conversation with him yourself about this fact—whether it was Tochquonyala Lake?—Yes.

22598. Was it with you that he had the conversation that led to this being called Tochquonyala Lake?—With myself and Mr. Secretan. We were both together.

22599. Was anybody else by?—Not at that time.

22600. Then you heard all the Indian said which led to that conclusion?—Yes.

22601. Did he tell you there was such a lake as Tochquonyala Lake, or did you first talk of it to him?—We were talking of the Tochquonyala Lake, and asked him whether he could take us to it, and he said he could.

They were talking of Tochquonyala Lake, and asked the Indian whether he could guide them to it, and he said he could.

22602. How long was this after you got to the main land?—We were detained on the steamer some eighteen or nineteen days, that we could not land.

22603. Why?—The ice was all honey-combed, and the rocks around the coast of the inlet were so steep that we could not pack up them, and we had no way of getting up to the Inlet until the frost set in.

**Surveys, B.C.—
Gamsby's Expedition.**

At Kimano they held this conversation with the Indian.

Nobody knew the lake, one Indian gave the information.

Employed the Indian because he knew where the lake was.

The Indian employed early in the exploration, and was asked about Tochquonyala Lake.

Gamsby said the Indian could point out the lake to them "when they got there."

22604. At last you got there?—Yes.
22605. And it was after you got there, as I understand, that this Indian had this conversation with you?—That was at Kimano—that is the Indian village.
22606. Was this one of the Indians who came on the vessel with you?—No; he was a native. He was one of the Kimano Indians.
22607. Were you instructed to go to this place and ascertain if any Indian could take you to Tochquonyala Lake, or was this a matter for your own discretion?—We had a map, but Mr. Gamsby thought it advisable to send an Indian with us to the lake. The Indian was also engaged as a canoe man and packer.
22608. Was he the only Indian of the party who knew about this lake as you understood?—He was a native we employed for that purpose.
22609. Was it necessary to employ him because nobody else of the party knew of the lake?—Nobody else of the party knew.
22610. And it was this one Indian that gave you the information?—Yes.
22611. And you got it by going to him and asking him if he could point out to you Tochquonyala Lake?—Yes; he told us when we got to the lake that it was Tochquonyala Lake.
22612. That is not what I am asking you; I am not asking you what he said when you got to the lake, I am asking you how you came to employ him for the purpose of pointing out the lake?—Because he knew where it was.
22613. Am I right in saying you went to this village, Kimano, and asked for some Indians who could tell you where Tochquonyala Lake was?—No.
22614. Then how did you come to employ him?—Because we had his canoe and him.
22615. For what purpose?—To get across the open water at the inlet.
22616. How far had you gone on your expedition when you first arranged with him that he should point out the locality of Tochquonyala Lake?—We had travelled up the Inlet some twelve or fifteen miles, and we found then that at the head of the Inlet the water was open, and we had to send back for a canoe, and this man brought his canoe along. The river was open as far up as tide water, some five or six miles, and it was during the time he was with us then that we asked him about Tochquonyala Lake.
22617. Could you say what you did ask him, or what your question was to him?—I could not exactly, because Mr. Gamsby was the man that questioned him first of all.
22618. Mr. Gamsby was present at first?—I do not know. I was not present when Mr. Gamsby first spoke to him. We were at work.
22619. Do you say that Mr. Gamsby had a talk with him about this Tochquonyala Lake before you had?—Yes; I do not know whether he had talked about Tochquonyala Lake, but I judged by what Mr. Gamsby told us when we started that we had better take this Indian with us, because he could point out the lake to us when we got there.

Surveys, B. C.—
Gamsby's Expedition.

22620. As far as you know, he was the first man on the expedition who discovered that this Indian could point out Tochquonyala Lake?—I suppose all the Indians knew it.

22621. I am not asking about how many Indians knew it, I am asking who was the first man of your party?—I could not tell.

22622. Who was the first person who told you, or led you to understand that this Indian could point out Tochquonyala Lake?—Mr. Gamsby.

Gamsby the first person who led witness to believe the Indian could point out the Tochquonyala Lake.

22623. Did he tell you that?—Yes.

22624. Then it was not from the Indian you first learned that?—No.

22625. You say now that Mr. Gamsby first told you that this man could point out this particular lake?—Yes.

22626. Then there was no occasion for you to ask the Indian whether he could do it or not?—No.

22627. Did you ever ask him?—No; except when we were making our track survey, we asked for information on the route where different rivers came from, and when we came to the first small lake, he told us that was the head water of the Kitlope. Of course we found that out ourselves by taking barometrical heights. We came then to this larger lake, and that is what he told us was Tochquonyala Lake.

22628. Between this first lake which you spoke of and Tochquonyala there was a height of land?—Yes.

22629. A water-shed?—Yes.

22630. So that this lake which you supposed to be Tochquonyala Lake emptied into a different body of water from the Kitlope River?—Yes. The lake that we were told was Tochquonyala Lake emptied into the Tsatsquot River.

The lake the Indian told them was the Tochquonyala emptied into the Tsatsquot.

22631. What position did you occupy on that staff?—I was topographer on that survey.

22632. Do you mean merely a draftsman, or did you use the instruments of the survey?—I was taking the topography in the field.

22633. What were the duties of the topographer?—Showing the mountain peaks and rivers.

22634. Did you use any instruments in the field?—Yes; a prismatic compass and sketch case and scale.

22635. Did Mr. Gamsby accompany you on this expedition all the way?—No.

Gamsby accompanied the party only to where the micrometer survey terminated, or about eighteen miles before the lake was reached.

22636. How far did he accompany you?—As far as to where the micrometer survey terminated.

22637. That was about eighteen miles before you reached this lake?—Yes.

22638. Where did he go then, do you know?—He remained in camp here packing supplies—to take down some of the supplies.

22639. To take them down where?—To take them down to the end of the Inlet.

22640. He was preparing for moving back again?—Yes.

**Surveys, B. C.—
Gamsby's Expedition.**

Secretan and witness made track survey, and Gamsby sent a half-breed to follow them.

Does not know why White the engineer did not go with them.

A bare exploration.

Thinks it was necessary to have a large party.

22641. That was before the work was over?—We were two days gone up to this lake.

22642. Did he detach more than one party for the purpose of finding Tochuonyala Lake?—Mr. Secretan and I went first and made this track survey, and afterwards he sent a half-breed to follow our footsteps.

22643. A half-breed?—A half-breed.

22644. That would not be an engineer—he had nothing to do with the staff?—No; he was a workman.

22645. Did he detail any of the engineering party to do the work besides your party?—Only us two for the trip. We made a survey of it, and he sent this half-breed up for some purpose, I do not understand it.

22646. Was there any other engineer in the party a professional man?—Yes; Mr. White.

22647. What was his duty?—He was leveller.

22648. Why did he not go with you: was he wanted to pack up to go back to the Inlet?—I do not know why he did not go.

22649. Was there no work for a leveller on that work you were at?—No; they could not continue the line any further than that canyon in winter time.

22650. Your party then was a bare exploration party?—Yes.

22651. Not an instrumental survey?—No; not from there for the micrometer survey. There was no necessity for sending a large party on an expedition of that kind.

22652. Where was the necessity for taking a large party on an expedition of this kind?—For the purpose of packing supplies. They made two trips, sometimes three trips a day.

22653. Upon what portion of this survey was there a large party required, a party such as you took?—From where we landed from the steamer on the ice on the canyon.

22654. How far was that?—The ice was frozen for twenty-four miles, and there was twenty-six miles of survey made after that.

22655. Now for what distance over this expedition would a party be required of the size which you took?—Over the whole of that distance.

22656. What distance?—From the edge of the ice to the head of the instrumental survey.

22657. You think it was necessary to have a large party through the ice?—Yes; we had not any too large a party. The survey was delayed on account of not being able to bring up the supplies quick enough. We kept men at work, and detailed the balance—Indians chiefly—for bringing up the supplies. Sometimes they made three trips a day.

22658. What was Mr. Secretan's duty?—He was transit man.

22659. Did you ever take any observation to ascertain the latitude of the locality yourself?—Yes.

22660. You can do that?—Yes.

22661. Could you and Mr. Secretan do it between you?—Yes.

22662. And I suppose you did it when you got to Tochquonyala Lake?—We did not do it at Tochquonyala Lake.

22663. Where did you do it?—At the Inlet, and the end of the instrumental line.

22664. That is at the end of the twenty-six miles?—Yes.

22665. Did you mark that latitude?—I think it is marked on the map.

22666. Upon looking at the map do you find it is marked?—No.

22667. Why not?—I had nothing to do with the taking of this observation.

22668. Who took that?—Mr Gamsby, I think.

22669. Do you know that he took it?—I was away at the time I think, but I heard him say that he took one.

22670. You do not know that there was one taken?—I am not sure.

22671. Then you and Mr. Secretan did not take one?—Not at the end of the twenty-six miles.

22672. Where did you take one?—At the initial point of the work. My work was chiefly taking this topography.

22673. I am trying to ascertain from you what was done by the rest of the staff as well as by yourself; what direction do you say, looking at your map, that the lake you called Tochquonyala is from your initial point?—It is nearly west in a straight line.

The Tochquonyala Lake of witness's examination nearly east from the initial point of starting.

22674. You mean nearly east?—Yes; nearly east I mean.

22675. After you and Secretan left Mr. Gamsby at the end of the twenty-six miles, did you cross any stream which might have been the main river, do you think—the Kitlope?—We crossed one or two small creeks and two larger branches, but I do not think they were as large as the main river.

22676. Did you cross, before you came to the end of the twenty-sixth mile, any stream which might really have been the principal stream?—We crossed several large streams.

22677. There is one marked on your map called the Tenaicoh or north-west branch?—Yes, Sir.

22678. Do you know anything about that more than is laid down on your map?—No; I traversed that up as far as the first canyon, about three miles I should think, and returned to the camp.

22679. Was it still a large stream where you left it?—It was falling very rapidly there. It was a stream about sixty or seventy feet wide, I should think there, but the main river there is 200 feet or more wide.

22680. When you say that this lake is nearly east of your starting point at which you took the latitude, it is if anything a little south of east, is it not?—Very little—seven or eight miles I should think.

22681. Had you with you upon this expedition any sketch or plan made by any person who had previously explored the locality?—We had a tracing made by Mr. Horetzky.

Had with them a tracing made by Horetzky but did not take it with them from camp.

22682. Was that with you?—Yes

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22683. Did you and Secretan take that with you?—No; not from camp.

22684. Though you and Secretan were going to find this particular lake described by Mr. Horetzky, you did not take the sketch?—I am not sure. Secretan may have had it.

22685. It was not wanted by the people who were going back again by the steamer?—We were instructed to follow up the valley of the river that had already been surveyed to its source, and we followed up that branch of it to the head waters and returned to camp, and the following day we made a survey of the south branch, some seven or eight miles, and came back to camp.

Thinks that he and Secretan had obtained the object of the expedition so far as getting through the Cascades, but adds that they did not get through the Cascades.

22686. Before you returned from this lake which you called Tochquonyala, to make the survey of the south branch, you had come to the conclusion, I suppose, that the object of the expedition was attained, had you?—As far as getting through the Cascades there; yes,

22687. Did you think that you had got through the Cascades there—that you had got into the interior plateau?—No.

22688. Did you expect by coming back and going down this south branch to ascertain whether you could get through the Cascades?—No; it was very little use.

22689. What was the object of this survey down the south branch?—The turn of the valley led us to believe that it went out in an easterly direction, and we made that exploration to find out where the head waters of that stream were.

22690. Did you think that you had attained a sufficient altitude when you got to this lake to make you believe that you were near the height of land?—No.

Does not know whether they got the right lake, only goes by survey and what the Indian said.

22691. I suppose you think now that was not the lake that you intended to reach?—I do not know, Sir; I only go by our survey and the information the Indian gave us.

22692. What reason have you for thinking that was the lake you were expected to find out?—From comparison with the sketch we had.

22693. Anything else?—And the Indian's information.

22694. That is, this one man's information?—Yes.

22695. Did you ever hear that man say he knew anything about the lake?—The Indian?

22696. Yes?—Not until he pointed it out to us.

Previous to starting the Indian made a sketch of the lake on the snow.

22697. Did he see the sketch that you had with you?—No; but previous to starting he made a sketch on the snow, showing the direction of this and where the lake was, and the following morning we made the track survey, and when we reached the summit and found we were falling again, we got to this lake, and he told us that was Tochquonyala Lake.

22698. And did you find that like the sketch he made on the snow?—Yes.

22699. Then the course and the shape of the lake were both as he intended to show by his sketch?—Very nearly.

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22700. Were you present when he first said the name of the lake was Tochquonyala?—I was present when he pointed it out.

22701. On the ground?—Yes.

22702. You speak of the sketch on the snow, were you there when it was made?—Yes.

22703. Did he say then the name of the lake he sketched on the snow was Tochquonyala Lake?—Yes, Sir.

22704. Was Mr. Gamsby there?—I believe so.

22705. The object of this expedition was to get to Tochquonyala Lake, and it surely occupied your mind seriously; it was not a matter of indifference as to where Tochquonyala Lake was; don't you remember how you came to the conclusion that this man could lead you to it?—Nothing any further than Mr. Gamsby telling us that he could guide us to the lake and we were to make a track survey as we went along.

Gamsby told them the Indian could guide them to Tochquonyala Lake, and they were to make a track survey.

22706. Before you left the end of the twenty-six miles and went on with Secretan alone to make the track survey, as you call it, and which I understand to be a bare exploration, did you understand that Mr. Horetzky or any one else had stated to Mr. Fleming that there was a great difficulty in the neighbourhood of Tochquonyala Lake, that for five or six miles in the neighbourhood of that lake it was almost impossible to locate a railway, and that the object of your investigation was to test the correctness of that view: were you led to understand all that or part of it?—Yes; Sir.

Knew that the object of the investigation was to test Horetzky's report.

22707. That was the principal object of your expedition?—Yes, Sir.

22708. And was it understood that you and Secretan would go alone and do that?—It was the intention of the party to go up provided we got further than the canyon. We could not snow shoe up there and draw hand sleds. The canyon is some three miles long and it is impracticable to get provisions further up than that at that season of the year.

22709. I understand you to say that you never took any altitude so as to ascertain the latitude before starting—that if anything was done it was done in your absence?—I believe Mr. Gamsby took an observation for latitude at the end of the micrometer survey.

22710. You believe so?—Yes, Sir.

22711. Why do you believe so?—I have heard him speak of it.

22712. How did you ascertain your heights? You have given heights to these lakes beyond this point when on the survey made by you and Secretan; how did you come to a conclusion about those heights?—Barometrical heights.

22713. Starting with what you considered to be the height ascertained at the end of the twenty-six miles?—That was ascertained by level from tide water.

22714. Did you ever look yourself at this sketch which you had with you?—I have seen it.

22715. Did you look at it frequently and carefully?—Yes, Sir; and compared it afterwards with that.

22716. And what did you find?—There was a great difference in the altitudes, but not very much difference in the topography.

A great difference in altitudes but not much in topography between the Tochquonyala of Horetzky and witness's Indian.

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22717. Was there not considerable difference in the direction in which these lakes were found—I mean the course of the compass?—Not a very great difference—I don't think.

22718. Do you say that you compared or looked at this map carefully, and studied it before you went off with Secretan on that expedition?—I have looked at it on two or three occasions.

22719. When you started off with Secretan did you not know it was really to ascertain whether it was correctly laid down on the sketch: was not that the main object of your expedition?—It was the main object of the whole expedition.

22720. The matter depending on you and Secretan, I ask whether you examined carefully what was shown by that sketch before you started?—I do not know about carefully, but I examined it two or three times.

Sketch of Horetzky may have been with Secretan but does not know.

22721. Why did you not take it with you if it was of any interest?—It may have been with Secretan, but I do not recollect whether he had it or not.

22722. Have you any tracing of it now—anything that you could submit to us that would show the same as that sketch showed?—I have not it with me.

22723. Is it near here that you know of?—I think I have the original.

22724. Where is that?—I do not know how it came into my possession, but some time, I suppose, it had been given to me, and I had forgotten about returning it.

22725. And where do you think it is now?—It is in the Dominion Lands Office.

22726. Could you get it this afternoon?—Yes.

22727. What size is it: is it the scale of Exhibit No. 318 filed this morning?—No; it is a much smaller scale.

22728. Look at that carefully, and say if you think it is the same as Exhibit No. 318?—I think it is, but on a smaller scale.

22729. Were you under the control of Secretan on that occasion?—Yes.

22730. He was the principal one of your party?—Yes; next to Mr. Gamsby.

22731. Is that anything like the shape of the lake laid down on your little sketch as Lake Tochquonyala?—No.

22732. Your sketch is different?—Yes. [Witness goes for the sketch and returns.]

Produces a copy of Horetzky's sketch.

22733. Can you now produce the sketch which you speak of?—That is it. (Exhibit No. 322.)

22734. Did I understand you to say that when you and Mr. Secretan advanced beyond the end of the twenty-sixth mile upon that survey, and started what you called a track survey, Mr. Gamsby remained behind because he had intended to return to the Inlet?—He intended to return after we came back from the track survey to Tochquonyala Lake.

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22735. The result of your exploration then, had nothing to do with his decision on the subject?—It had all to do with it.

22736. How was that: had he decided not to return until you returned?—He decided not to return until we came back.

Cannot explain why Gamsby did not go on the exploration to Tochquonyala.

22737. Then why didn't he go with you?—I cannot explain.

22738. I thought you said that he did not go with you because he had to get ready to make the return?—I suppose that was his object in remaining behind.

22739. But that is inconsistent with the idea that he had not decided to return?—He had not decided to return until we came back.

22740. Had he made any decision at the time you left?—Not that I am aware of.

22741. Then he did not remain behind because he had made any decision about returning?—Unless it was preparing to return to the steamer.

22742. At all events he was not with you at the time this critical part of the expedition was to be performed?—No, Sir; he did not go up on the track surveys.

22743. I think you said that the shape of Lake Tochquonyala on this sketch, and on the larger map which I showed you, were not similar: will you look at them?—My sketch and these do not agree at all.

22744. Will you look at the shape of the lakes on Exhibits Nos. 318 and 322 and say whether the shape is the same?—The shape is very different between my sketch and that. These two sketches are similar. I thought you referred to my topographical sketch.

The shape of the Tochquonyala of Horetzky and that of witness's discovery very different.

22745. I am asking whether the sketch which you had on your expedition showed the shape of the lake the same as this large map of Mr. Horetzky's (Exhibit No. 318)?—The sketch which we had was a tracing from Mr. Horetzky's plan, and I suppose would agree with this.

22746. Is not this one which you produce the one which you had with you?—No.

22747. Is it like the one that you had with you?—I think the one we had with us is on a larger scale than that. In fact, I think it was a tracing from this large one of Mr. Horetzky's. (Exhibit No. 318.)

22748. Upon this sketch which you produce, and upon the one which you had before you in British Columbia, and upon this large one now present of Mr. Horetzky's, Lake Tochquonyala is all described as of a similar shape, is it not so?—I suppose so; yes.

22749. Is it anything like the lake which you found there, and which you thought to be Lake Tochquonyala, in shape?—We simply made a track survey round the centre of the lake, some two miles I suppose, and took the bearings towards the outlet with the compass and returned.

22750. How long is that lake which you found?—Three miles, as I estimated it.

The lake found by witness three miles in length, and quite different in shape from that in Horetzky's sketch.

22751. Do you say, as a matter of evidence, that the shape of it is anything like the shape of the one shown in all those sketches made by Mr. Horetzky, or copied from his?—No.

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22752. Then you must have assumed that Mr. Horetzky's sketches were wrong as to the shape, otherwise you could not have concluded yours was the right lake?—The shape of the lake that we went to was not the shape of any of these lakes shown on his sketches.

While on the spot recognized that Horetzky's lake was not the shape of the lake before them.

22753. Then, did you think while you were on that spot that the shape shown by Mr. Horetzky's sketches was not the correct shape, or did it enter into your head at all to discuss the shape?—Yes.

22754. Tell me what your conclusion was?—I thought it was not sketched the same as the lake that we saw.

22755. You noticed the difference in fact?—Yes.

22756. Were there any other matters upon which you noticed a difference between what was shown by Mr. Horetzky's sketch and what you found on the ground: was there not another lake?—The only difference was the elevations of the lakes.

22757. Think again. Was there not another lake—a lake which you thought might agree with his Beaver Lake?—We thought the first lake we came to on the survey was his Beaver Lake.

22758. You found a great difference in the length of that and what you saw?—No.

22759. Did you not find a great difference in the length?—I estimated the length of the lake. I did not go the whole length.

Also thought that the lake he took for Beaver Lake was different from Horetzky's Beaver Lake.

22760. Did it not strike you that the lake which you took as his Beaver Lake was really very different from the sketch of his Beaver Lake?—Yes.

22761. Then there was another thing which struck you as being very different?—Yes.

Took no notice of the latitude of Tochquonyala Lake.

22762. Was there anything about the locality that struck you as being different: did you not find the latitude, as laid down on his map, of Tochquonyala Lake?—I took no notice of it.

22763. You took no notice of the latitude?—No.

22764. Did you see that his sketch showed it?—Yes.

22765. Both the sketch which you produce and the other one?—Yes.

22766. The lake which you called Tochquonyala and the one which he called Tochquonyala are not in the same latitude?—We took no observation; we had no instruments.

22767. But could you not tell from the last one which had been taken at the end of the twenty-six miles, that it was impossible for you to be in the same latitude as was shown by his sketches for Lake Tochquonyala?—I did not know what the latitude was there. Mr. Gamsby took some observations there and that is the only thing I know about the latitude.

The latitude at end of track survey not recorded by witness.

22768. Could you not say what the latitude was at the end of the track survey?—I could not from memory.

22769. You do not find it recorded in your topographical sketch?—No.

22770. It has been shown that the lake which you found was some eighteen English miles south of the true Tochquonyala Lake, and I

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thought that perhaps you could have discovered that without having a very exact measurement, or observation, that if you looked at his sketch, and had seen the locality of his lake, you would know that you were not in the same locality: you say that did not occupy your mind?—Yes; it did while we were out there.

22771. Then it did, occupy your mind?—Yes.

22772. Then you must have found the latitude of his lake, or you could not have compared it?—I know the two surveys did not agree at all. Our survey of that lake and his did not agree in any way.

22773. Did you know while you were there on the spot that you were not in the same locality that his sketch showed Lake Tochquonyala to be in?—Yes, we knew we were in a different locality; but we imagined we were right.

Know that they were in a different locality from Horetzky's lake, but imagined they were right.

22774. Since that expedition was the matter discussed among the staff?—Yes.

22775. What was the general opinion as to the matter?—The general opinion has been that this Tochquonyala Lake of Mr. Horetzky's was not in the right place.

22776. Where ought it to have been according to their opinion?—Where we showed it. I do not pretend to be a judge of the matter, because I was not responsible altogether for that.

22777. Do you mean that you have come to the conclusion now that this lake shown by Mr. Horetzky in latitude $53^{\circ} 22'$ is not the real Tochquonyala?—I do not care about expressing any opinion on that point.

22778. You see it is necessary for us, if there is any mistake, that we should ascertain where it is, and that it should fall upon the right shoulders, and you, having been upon the survey, should give your opinion?—As far as Mr. Horetzky's map guided us we came to the conclusion that it was not in the right position—that is Lake Tochquonyala. That is a sketch showing the road, and we followed that up to the best of our ability to find out what was Tochquonyala Lake.

22779. I suppose you do not mean to say that there is not a lake there where Mr. Horetzky shows Tochquonyala Lake to be?—I do not suppose it is in that position.

22780. But you think there is a lake up in that locality?—Yes.

22781. In latitude $53^{\circ} 22'$?—I do not know about the latitude.

22782. I mean about the latitude $53^{\circ} 22'$: do you say you think there is not a lake there; have you any means of knowing whether there is a lake there or not?—I have not.

Has no means of knowing whether there is a lake where Horetzky states the real Tochquonyala to be or not.

22783. I suppose you have no opinion on that subject then?—No; not about the latitude.

22784. Have you any opinion as to whether there is a lake about latitude $53^{\circ} 22'$?—If I saw my own sketch I might be able to tell.

22785. Here is your own sketch (handing a map to witness)?—No; I have no means of knowing whether there is a lake in $53^{\circ} 22'$.

22786. You have no opinion on that subject?—No.

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22787. Then if there is a lake there you think it is not the Lake Tochquonyala, but it has some other name, or has no name—is that what you mean?—Yes; that it must be some other lake.

! 22788. Mr. Horetzky in his report, before you went on the expedition, said he found a lake without any name, but he gave it the name of 'Tochquonyala himself: do you know anything about that?—That lake is called after an Indian chief. The Tochquonyala Lake that I show on my sketch is called after an Indian chief of that name.

22789. Who told you that?—The Indians.

22790. More than one?—Well, I suppose.

Heard it "given out" that the lake up to which they surveyed was called after an Indian chief, Tochquonyala.

22791. Why do you say you suppose; don't you know?—In talking with the Indians we often got into conversations that I do not quite recollect; but I have heard it given out that that lake we surveyed up to was called after an Indian chief, Tochquonyala.

22792. That was after you discovered it you heard that?—No.

22793. Before you went up?—Before we went up.

22794. Was it from this same man who guided you there?—He was one; and other Indians I have heard mention the same.

22795. Before you went to discover this lake which you say you discovered, did you ever hear from any Indian source, except this one man who went with you, that that was Lake Tochquonyala?—No other Indian went up with us but this one.

22796. That is not my question: you might have spoken to many Indians before you started?—I had heard it described the way the Indians mentioned—that a trail led up to it.

22797. That was before you started?—Yes.

22798. Where was that?—Either at Kimano or at the head of the Inlet.

22799. Then you must have spoken about it to several persons before you went up?—Probably.

22800. I understood you to say that as to the locality you only had knowledge of it from one person: I asked you several questions on that subject, and I understood you to say that it all came from one man who went with you, and who could point it out to you; that Mr. Gamsby had spoken to him about it before, and said that he was the man who knew where the lake was?—He was one of the Indians who knew where the lake was.

22801. Did you know that Mr. Horetzky had been near that locality a year and a half or two years before?—I knew from his having made the sketch.

22802. Do you know that he had taken an Indian with him by the name of Tochquonyala, and had called the lake after him?—I do not know anything about that, but I heard that the lake was called after an Indian chief of that name.

22803. If it be true that Mr. Horetzky found a lake where one is shown on his sketch, at latitude $53^{\circ} 22'$, and that he named it Lake Tochquonyala, I suppose it is clear that that is not the lake which you found?—We followed Mr. Horetzky's sketch, showing where the best line of road was to be found, and when we arrived at this lake it was

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called Tochquonyala, we came to the conclusion that it was not in a correct position.

22804. Now, looking at his sketch there—the large one, or the smaller one you had with you—do you say that you were ever in the locality where he shows that lake to be, or within sixteen miles of it?—All I have to say is, we followed the Kitlope Valley up to its source, and found that lake as sketched, but not in the same position nor the same shape.

22805. But did you follow any stream in the same direction as the stream shown on his map?—Yes.

22806. Do you think your track survey was along a stream running in that direction?—The stream, as shown on Mr. Horetzky's map, is incorrect—this stream, the Kitlope.

22807. Why do you say that?—Because we made a micrometer survey of it.

22808. But you were never in that locality—not within many miles of it?—The Kitlope River?

22809. Yes, the Kitlope River?—We followed the Kitlope River up to its source.

22810. Who saw its source?—I did.

22811. Where was that?—A small lake shown on my sketch.

22812. You remember that you passed some large bodies of water, did you not?—Yes, and explored them—further up.

22813. I suppose some of them went further up than you explored: might not that be one of the branches shown on this map of Mr. Horetzky's?—It might have been, but not the main river.

22814. But you did not follow them up far enough to compare them and say which was the main river?—I did as well as I was able to for the time allowed me.

22815. How long were you away after you left the head of the party, Mr. Gamsby, before you returned?—Two days.

Secretan and witness two days away from Gamsby's party.

22816. I suppose, before you started on that expedition, you or Mr. Secretan must have come to the opinion that Mr. Horetzky's sketches were wrong because the altitude also was wrong?—Yes.

Before they started had come to the conclusion that Horetzky was wrong.

22817. How far had you gone before you discovered it?—About five or six miles up.

22818. What was that mistake?—The elevation of the first lake.

22819. What was the mistake about that?—Comparing the elevation that we found with Mr. Horetzky's elevation, we found a great difference.

The elevation of the first lake gave them this impression.

22820. His sketch showed about 1,100 feet, did it not?—Yes.

22821. And what did your lake show?—It is on the map there. I think it is some fifteen feet about. Just a little above the head of tide water.

22822. How far from tide-water?—About a mile or a mile and a-half.

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Thought that the lake he found at an elevation of fifteen feet was the same as Horetzky discovered at an elevation of 1,100 feet.

Did not reason over discrepancies; instructions to follow the Kitlope Valley.

A complete antagonism between the two sketches.

22823. And you thought it possible that that lake which you found a mile or a mile and a half above tide water, at an elevation of fifteen feet, might have been the lake which he discovered inland at a height of 1,100 feet?—We all supposed it.

22824. That was after the start, a mile or a mile and a-half?—No; the tide water follows the river up there some four or five miles.

22825. It was a comparatively short distance?—Yes.

22826. Near the Beaver Lake, in Mr. Horetzky's sketch, which you had with you, at the south end, a spur of mountain is shown, and the dotted line shows a projected line for the railway?—Yes.

22827. Did you find such a spur as that near this lake which you found to be fifteen feet higher than tide water, and near the south end?—I was not at the south end of the lake.

22828. Then how could you suppose, where he shows as plainly as his sketch shows, such a spur at the south end of the lake, that you had got to that lake, though there was no such spur; did you reason over those matters at all?—No; our instructions were to follow the Kitlope Valley.

22829. Were you guided to any extent by the sketch which had been furnished from Mr. Horetzky's drawings?—Not in any other way than by the name of that river which we, of course, presumed to run into the head of Gardner Inlet, and we started our survey from the head of Gardner Inlet and followed the main valley up.

22830. In order to believe your survey, or your discovery, to be correct, it must have been necessary to believe all the data which he had given to be incorrect; the altitude, the shapes of the lakes, the distances between them, the shape of the mountains and the latitude; all those things must have been wrong in order to make yourselves right, was it not so?—As far as the latitude is concerned, careful latitudes were taken at the head of the Inlet.

22831. But was that consistent with his latitude at Tochquonyala Lake?—No.

22832. Then does it not follow, that in order to make yourselves right every material datum connected with his discovery must be shown to have been wrong?—As far as the Kitlope is concerned I think it must have been wrong.

22833. Was there any one of the material data of his map consistent with yours being right?—No; there is a difference between them.

22834. Is there any one of them: is there any in the altitudes?—Yes.

22835. Is there any in the latitudes?—There is a difference between the two sketches altogether.

22836. Is it not necessary that all the material data which his sketch shows must have been wrong in order to make yours right?—I do not say that it is all wrong.

22837. Perhaps you will not say that yours is right: I am enquiring whether any one of his material data is consistent with the data in your proposition, or are they entirely in conflict?—They are entirely in conflict.

Surveys, B.C.—
Gamsby's Expedition.

Ended expedition
in April.

22835. What time of the year did you end that expedition?—In the early part of April.

22839. Did you return then to Victoria?—Yes.

22840. Were you employed afterwards on the Pacific Railway survey?—Yes; I was up on the location of the North Fraser River to Tête Jaune Cache that summer.

22841. As far as you saw upon this particular expedition was Mr. Gamsby attending to his work always or did he neglect it?—I do not think he neglected it.

22842. Is there any other matter connected with either this particular survey or any other surveys that you think you ought to give evidence upon?—No; I have no evidence that would be of any interest.

22843. Do you remember having any conversation with Mr. Horetzky after this survey was over, here in Ottawa, in which you led him to understand, or wished him to understand, that you thought you were all wrong in your conclusions upon that survey; that you had made a mistake, and had gone to the wrong place?—I had some conversation, and always thought there was a great difference between his survey and ours, and in reducing this afterwards to fit it on the map in British Columbia that I was making, I could not get either his or mine to agree.

Found in making
a map that he
could not get his
survey and
Horetzky's to
agree.

22844. You could not get one or other of them to agree—you mean to agree with the general map or to agree with each other?—With the general map. The latitude taken at the head of Gardner Inlet by Mr. Secretan also differed from the chart latitude. Of course the chart containing the map of Gardner Inlet was a coast survey.

22845. That was principally for the purposes of navigation?—Yes; it was similar to a track survey on land.

OTTAWA, Tuesday 5th July, 1881.

CHARLES HORETZKY'S examination continued:

HORETZKY:

Kitlope Valley.

By the Chairman:—

22846. I understand that you desire to add something to your former evidence?—I hand in reduced copy of the two plans, the one by myself in 1874, the other by Mr. Gamsby in 1876.

22847. When you say by Mr. Gamsby do you mean the tracing by Mr. McNicol which was produced by him the other day in your presence?—Yes; that is the one I mean. (Exhibit No 323.) With regard to the survey depicted in that map, performed by myself in 1874, I should like to make the following statement: the expedition of 1874 left Victoria on the 19th of May, and returned to Victoria by the 24th of January, 1875, being absent eight and one-third months.—

22848. You mean the expedition under your charge?—Under myself. The total cost for supplies, wages and cash was \$2,112.13. The proportion chargeable to the survey for the sloop's charter was in all probability (I am not able to get at the exact items) two-thirds of the whole or \$533.—

Cost of witness's
expedition.

**Narveys, B.C.—
Kitlope Valley.**

Cost of witness's
expedition: total,
\$2,645.13.

22849. You arrive at that I suppose by a per diem rate?—By a per diem rate and by the usual rate of wages on that coast at that time. For instance the sloop was manned by two men, each man would probably get \$50 per month, and I presume that the sloop's charter was worth about \$50 per month too. That would be \$150 per month. I think that is a pretty fair estimate. The total cost then of this expedition, taking those figures, would be \$2,645.13. The localities surveyed, irrespective of the coasting voyages, were: the Kimano River, seven days time occupied; the Kitimat River, fourteen days; the Lachques River, ten days; the north Fork of River Tsatsquot, twelve days; the middle Fork of the Tsatsquot River, twenty days;—those two last apply to the survey shown upon the map that I now hand in—the Kemsquit River, ten days; total number of days actually employed in land survey, seventy-three days. The survey of the whole of the Tsatsquot Valley depicted in the reduced map now submitted was made in thirty-two days or 438 of the whole time (seventy-three days), the proportionate cost of which is \$1,158.51, according to the above figures, or at the rate of \$39.32 per day. The above estimate does not include my salary or travelling expenses from Ottawa to Victoria and back.

Gamsby's Expedition.

22850. I understand that this plan which you now submit shows two distinct fields of operations, one under your charge and the other under Mr. Gamsby's charge?—Yes.

22851. That one which was under Mr. Gamsby's charge, as I understand you, is shown upon this map at the same locality—that is the same latitude—as mentioned on the sketch by Mr. McNicol, one of his party?—Yes; it is a true copy of the sketch to which Mr. McNicol referred in his evidence.

22852. And the field of operations under you is shown upon this present sketch in the same latitude as that shown upon your larger sketch now in the Department of Railways?—Yes; it is also a true copy of the plan referred to in the last evidence.

Plan submitted
makes it clear
that the country
examined by
Gamsby was not
that examined by
witness.

22853. Then this plan makes it apparent that the examination by Mr. Gamsby over the country laid down upon his sketch may be just as he showed it, and that that fact is not inconsistent with the correctness of your former operations as described in your report and sketch?—Oh, certainly not inconsistent. I believe that Mr. Gamsby's survey so far as it went was accurate. I have not the slightest doubt of it so far as the actual survey was concerned, and you will observe also that the terminal point of Mr. Gamsby's survey coincides with the known and well marked point in my survey—coincides within twenty-five seconds of latitude or 2,500 feet, a very, very close approximation, even by instrumental surveys.

22854. Is that the junction of the Tsatsquot?—Yes; my canoe camp.

22855. Is there anything further that you wish to state by way of evidence?—No, Sir, I do not think it. I did not come prepared with any further explanations regarding that map and the cost of that survey.

22856. This last sketch by you shows that there was a break in the examination of a portion of the Kitlope River, that is to say on the stream which is laid down on Mr. McNicol's map as a branch, and which you lay down as the main body of the river?—I think it is the

main body of the river, owing to the distance which the source is away from the point of confluence.

Survey, B.C. -
Gamsby's Expedi-
tion.

22857. How did you come to the conclusion that the portion of the river near your Tochquonyala Lake was really a portion of Kitlope River?—Because it could not be a branch of the Tsatsquot River, and the Indians I had with me were Indians who had passed all their lives in that locality, and after repeated cross-questioning I could come to no other conclusion but it was the main Kitlope.

22858. Were there any persons living in the locality, or was it entirely uninhabited?—Oh, quite uninhabited. I may also add another reason which established the correctness of the view that that was the Kitlope. The Indian, Tochquonyala, who accompanied me, and who had lived during all his life between the Gardner Inlet and Dean Canal, told me that years before the usual route, from the Kitlope Village at the head of Gardner Canal to the interior plateau, was by following the branch indicated by me in my plan as the Kitlope.

Region of Toch-
quonyala quite
uninhabited.

22859. Where did you start from to reach that Kitlope River that you surveyed: what part of the sea coast?—I started from Dean Canal.

22860. Where is the Kitlope Village?—The Kitlope Village is at the head of Gardner Canal.

22861. How did you come to know that the Indian, Tochquonyala, who left the Dean Canal with you was an inhabitant of the village on the Gardner Canal?—He had passed his life between the two villages, so I understand. He had lived some years, so he told me, at the Gardner Inlet.

22862. Where did you pick him up?—I picked him up at the head of Dean Canal. He was a man who had accompanied me in the two expeditions I made to Talcheikin Lake and the Tochquonyala Lake.

22863. During the same season?—During the same season.

22864. After going north-easterly up to Tsatsquot Valley you came to the height of land between the Tsatsquot River and the waters beyond?—Yes; I came to the watershed between the waters flowing into the Gardner Canal and the Dean Canal, and the moment we arrived there Tochquonyala and the Indians who were with me said: "This lake (Beaver Lake) flows into the Kitlope." That was before I had got to the lower end of it to see for myself. I saw afterwards that they were right.

22865. Well, if by any chance this river which is near your Beaver Lake should not be a portion of the Kitlope River, then that would account for the mistake of the Gamsby party, would it not?—Oh yes, it would, but what other river could it be? It is clearly not a portion of the Dean Canal, the Tsatsquot River and it flows south-westerly towards the sea.

22866. Do you understand that Mr. Gamsby was directed to survey up the Kitlope River for a particular lake?—Yes; for Tochquonyala Lake.

Gamsby directed
to survey up the
Kitlope River for
Tochquonyala
Lake.

22867. If it should turn out that the water which you call the Kitlope River was not the Kitlope River, then he would be following correctly his instructions by going up the river he did, and not up the river which you named?—Yes; I have no doubt. He was instructed

**Surveys, B.C.—
Gamsby's Expedition.**

**Reasons why
witness thinks he
examined the
true Kitlope.**

to go to Tochquonyala Lake by the Kitlope, and I was told, upon the best living authority there, and everything in the topography of the country depicted on the map now goes to show there could be no mistake about it. In any case, had Mr. Gamsby followed the dotted line there, followed the Kitlope River, the branch in which there is a break in the examination of the country—had he followed that line his expedition would still have been abortive, because he could not have got up from the level of Beaver Lake to Lake Tochquonyala. It would have been utterly impossible; the distance was too short, six miles, to a raise of 2,000 feet.

22868. You mean the railway could not have got up?—The railway could not have got up. That is the reason why, when I summarized my report, why I dismissed the subject at once by the paragraph which I read to you in my last evidence. I told Mr. Fleming the difference in altitude was so great in a short distance it could not be the Kitlope, and I told him and explained to him distinctly that the other branch of the Kitlope arose away to the west of the Tsatsquot River, so it could not be of any service.

22869. There is no other river of that description that flows into the Gardner but the Kitlope?—Not that I am aware of. There may be other rivers westward flowing into the Gardner Canal, but they would be necessarily very small rivers, because there are but two large rivers, the Kitlope and the Kimano. In fact, I believe that there are no other rivers. Any other streams that flow into the Gardner Canal are mere glacial turns.

22870. And tributaries of one of these main rivers?—No, independent streams.

22871. Reaching the ocean without joining the Kitlope or the Kemano?—From the locality, although I did not descend to the portion depicted on the map, I am morally convinced, and I have the Indian testimony—they had no object in telling me a lie about it—I am morally convinced it was the Kitlope. Another reason why I inferred that that branch of the Kitlope shown on my map as coming from Beaver Lake, was the Kitlope proper, was from the fact that the water-shed of the Cascade range approaches, I should say, anyhow, within twenty miles of the Gardner Canal to the westward. Consequently, that stream could not fall into the Gardner Canal at any other point but at the Kitlope. It could not fall into the Gardner Canal at the north or westward.

22872. The shape of the country between the water-shed and the known portion of the Kitlope River made it necessary that this stream which you call the Kitlope should find its way down to the known body of the Kitlope before it reached Gardner Canal?—Yes, certainly; everything pointed to that conclusion. Of course never having seen it, never having travelled down it, I cannot say more.

22873. The figures which you have given relate to the expense of your expedition over the portion of country shown by this map?—Certainly, to my own only.

Practice of
Department.

FREDERICK BRAUN, sworn and examined :

By the Chairman :—

22874. What is your office in the Department of Railways and Canals?—Secretary. Secretary
Department of
Railways and
Canals.

22875. Chief Secretary?—Secretary, Sir, to the Department of Railways and Canals.

22876. Have you occupied that office since the establishment of this Department?—I was Secretary to the Department of Public Works before the division took place.

22877. The same office?—The same office.

22878. Then you have been Secretary, from the time of the beginning of the Pacific Railway, in the Department which managed the matters of that railway?—Yes ; I have been Secretary since 1864.

22879. Would you describe, generally, what part you have taken in the matters connected with the Canadian Pacific Railway?—I could not.

22880. Have you corresponded about the contracts, for instance?—No ; except by instructions of the Minister. I carried out the instructions received, and received communications from parties addressed to the Department.

22881. Has it been your duty to do anything in your own discretion or always under orders?—No, except routine matters, which I would do myself ; but where any instructions were necessary, I always acted under instructions. Always acted on
instructions.

22882. As to routine matters, could you mention the principal ones which you have attended to connected with this Pacific Railway?—Received communications addressed to me as Secretary ; acknowledged the receipt of same ; furnished blanks to whatever parties required them, that were under my charge—anything connected with usual office work. I do not think there was anything else.

22883. As to communications addressed to you upon business connected with the Pacific Railway, what was your general course concerning such communications?—After receiving them I had them entered by a clerk—proper entries made in a book—and then laid them before the Deputy.

22884. Do you mean Deputy Secretary or Deputy of the Minister?—The Deputy of the Minister, who in turn brought them before the Minister, and I suppose they discussed the subjects contained in those communications, and entered their instructions on the face of the paper when it came back to me to carry out those instructions. Minister and
Deputy having
discussed a sub-
ject endorsed
their instructions
on the face of the
document relat-
ing to it and sent
it back to witness
to have the
instructions
carried out.

22885. When you say on the face of the paper, do you not mean endorsed?—Yes ; endorsed as in the paper now exhibited (producing an official document).

22886. Is it your practice to note, in writing, the time of the receipt of each communication?—Not in writing, Sir, but I have a stamp which I alter every day as to date, and when a paper is received I stamp the date of the receipt. There are some papers addressed, for instance, to the Deputy. He has no stamp, and if it does not come to me of course it will not bear the stamp. When it does come to me it is stamped.

**Practice of
Department.
Communications
taken to Deputy.**

22887. Do I understand that the communications concerning the business of the railway would be taken by you to the Deputy Minister?—To the Deputy, Sir.

22888. Then you do not communicate directly with the Minister himself, as a rule?—No; except in the absence of the Deputy.

22889. I suppose the practice is that you answer those communications as Secretary, and from some instructions which you get either from the Deputy Minister or the Minister himself?—Yes.

22890. How are those instructions communicated to you?—Generally they are on the face of the paper or on slips of paper brought in by a messenger, or verbal.

**How letters are
answered.**

22891. Then there is no fixed rule that they should be in writing—I mean the instructions to you?—No.

22892. When the instructions are verbal, do you yourself make any writing concerning the substance of them?—If there is a paper I do.

22893. I am asking now as to the occasions when they are verbal?—Well, I say if there is a paper I will write down the instructions, but if there is none I may be instructed to write to the party who has not written, on some matters connected with the affair.

22894. That is, about matters concerning which there is no paper existing at the time?—Yes.

22895. But if it should be in answer to another letter, then you would have the original letter, and upon that you would note the substance of any instructions which would be given to you verbally?—Yes; I would as a rule.

**A register of
letters received
and sent kept.**

22896. Is there any book of record kept in your office in which you note from day to day the subjects upon which you have received communications, and also subjects upon which you have written letters?—We keep a register of letters received daily, and of letters sent daily.

22897. Do you sometimes attend upon the Minister himself concerning those matters, in the presence of the Deputy?—When I am sent for.

22898. Has it been about the railway matters that you have occasionally been there with the Deputy, or by yourself, when the Deputy was in the city?—Yes, no doubt. It is ever so many years; of course—

22899. Then upon those occasions you would yourself receive in the presence of the Minister instructions concerning matters?—Yes.

22900. And upon such occasions would you also note upon any written document, if there was one, what the instructions were?—Yes.

**Railway Con-
struction—
Contract 5 A.**

22901. You remember a telegram being sent concerning some work upon the North Pembina Branch proper—I mean sent by you. I think I wrote you a line asking you upon what authority you telegraphed the substance of it as you did?—Yes.

22902. And your answer was that you had reason to think it was by instructions from the Minister?—Yes.

22903. Are you still of that opinion?—Yes.

**Knows he would
not send a mes-
sage of any im-
portance without
instructions.**

22904. What reasons have you now for thinking so?—The reason that I know is I would not send a message of any importance without instructions.

22905. Is that all the reason you have?—Yes.

22906. That would be, then, the reason of your own infallibility?—No; it would be only carrying out the rule by which I have been guided since I have been in office.

22907. But if it happened that you made a mistake, then that would be an exception to the rule?—No; I do not say that I might not make a mistake, but I would not send a message without instructions.

22908. Have you any record of that matter in your Department now so as to refresh your memory on the subject?—I could look it up.

22909. Did you not look it up at the time I sent a letter to you?—Yes.

22910. Do you remember that you found some trace of the authority?—I must have replied at the time.

22911. Your reply was not definite. Your reply was that you had reason to believe that you were instructed by the Minister—you did not say by the Deputy Minister or any one else, but by the Minister?—Yes.

22912. I suppose the matter has been discussed in your Department—this matter upon which I am now questioning you?—About this telegram?

22913. Yes?—I suppose so.

22914. Are you in doubt about it?—I would not say positively without looking over the papers, at what period this took place.

22915. Has there been no discussion among the principal persons in your Department on this subject in your presence?—Not that I am aware of—not that I remember of at least.

22916. I will endeavour to refresh your memory on the subject, and perhaps you will be able to recall some discussion. An Order-in-Council was passed authorizing Mr. Whitehead to do certain work upon the North Pembina Branch at rates fixed in the Order for two of the principal items, one being the earth work, and the rates for two other items were also fixed in the Order, and nothing more was said as to the rest of the work to be done; but a telegram was sent by you to Mr. Rowan to the effect that Mr. Whitehead was to go on and make the branch, naming the rates that were named in the Order-in-Council upon two of the items, and that upon all the other items he was to get the prices for section 15 which was a very high-priced contract. The consequence of that was that he got an exceedingly high price for off-take ditches, among other things—about double what it could have been done for by public competition—and it becomes a question how that telegram was sent covering items which were not covered in the Order of the Privy Council?—I remember the circumstance.

22917. Is it fresher in your mind now than it was when you spoke first?—Yes; I remember the circumstance now. I remember the Order-in-Council now and the telegram.

22918. Please describe it?—I would like to refer to the papers. I believe I can find something to connect the despatch, too.

22919. Do you think you did find some writing?—I think I will.

Railway Construction—
Contract 5 A.

The reason why he could not have sent a telegram without instructions because doing this would be contrary to the rule which has always guided him.

Remembers the Order-in-Council and the telegram relating to prices on contract No. 5 A.

**Railway Construction—
Contract 5 A.**

22920. I called your attention to it before, and I understand you made a search then?—Yes; I must have made a search then.

22921. You do not remember now what the result of the search was?—No, but I believe that I will find some paper on it.

22922. In addition to writing to you, I think I spoke to you in your Department on this subject?—Yes.

Cannot say what authority he had for this telegram.

22923. You are not able to say now what you had then as the authority for your telegram?—No.

22924. Do you say that it is your duty to open, as I understand it, all communications addressed to you officially as Secretary?—Yes.

**Tendering—
Practice of
Department.**

Date of receipt stamped on envelope, and they are put by until the last day for receiving them when he hands them in to the Deputy Minister.

22925. Does that cover all tenders for works?—No; I should except tenders. The tenders are marked on the face tender for certain work, and I stamp the date for receipt on the envelope itself, and I put those by until the day of reception—that is, the last day. Then I take them in to Mr. Trudeau unopened.

22926. Is that the invariable practice, or is it only general?—Invariably, Sir. I may open a tender inadvertently, in case there is nothing to show that it is a tender, or anything but an ordinary communication.

22927. What is the object of stamping the envelopes in which tenders come?—It is usually the time of receipt.

22928. Why is that necessary?—Questions as to time of arrival might arise. Some tenders are received after the time, say afternoon. They generally fix the time of day when they are to be received, say afternoon, or after the arrival of the eastern and western mails. The stamp shows the date of the arrival; the post office stamp, when the letters have been mailed, will show the date also of its being sent. I put P.M. under in writing if it is received in the afternoon.

Witness the first person to handle the tenders.

22929. Do you mean that you have always handled the tenders before any one else—that is, when they come in envelopes marked tenders?—Yes.

22930. You are the first person to dispose of them in any way?—Yes.

22931. And on each one you mark the hour of receipt by you?—Not the hour.

22932. The day?—Yes; the day if it is up to noon. Of course any received before noon is merely stamped with the day, and if it is afternoon I put P.M. under the stamp.

Generally present when tenders opened.

22933. When these are afterwards opened you are not always present, but sometimes you have been present?—Not always, but generally.

22934. You are generally one of the parties in whose presence they are opened?—Generally.

22935. Is the use of the envelopes over then, or are they still kept after that?—They are kept, generally.

Envelopes generally kept in order to show the date of receipt.

22936. Why are they kept?—On that account: to see the date of the receipt.

22937. Do I understand you to say that it is intended in the Department to keep them after the time of opening?—They are kept some considerable time after in many cases.

**Tendering—
Practice of
Department.**

22938. And with the ostensible object of showing the hour or time of day in case there ever should be a dispute about it?—Yes, that is it.

22939. Are they given back to you, as Secretary, after they are opened by some of the other officials?—The envelopes you allude to?

22940. All?—No; the tenders remain with the Deputy until one of them is accepted, and the terms, at least the contract, entered into. Then they are handed to me, and I see that they are endorsed and treated like other papers.

22941. When they are handed back to you are all the papers connected with each tender, as you understand it, handed back to you?—Yes.

22942. And the envelopes with them?—Envelopes with them.

22943. Now, between the time of the receipt of the tenders by you and the stamping the time of such receipt, what care is taken of them up to the time they are opened?—I put them in a pigeon hole.

22944. What sort of a pigeon hole: do you mean in a safe or in the open office?—I mean in a cupboard under a Chubb lock.

Places tenders in a cupboard under a Chubb lock.

22945. In your office?—Yes; in my office. Generally the tenders are accompanied with cheques—to order, of course.

22946. You have the key of that cupboard?—I have.

22947. Any one else?—No one else.

22948. You are not aware that any one else in your Department has a key that opens it?—No; they have not. I could always see if any one had tried to open it, because if they had I could not open it. I have got to reverse the movement.

22949. Could any one else reverse the movement?—No; they would not have the key.

22950. But if they had a key?—Yes; of course. It is a safety lock.

22951. Is there a second key to it anywhere?—No, Sir.

22952. What other papers are kept in that cupboard?—Private papers.

Keeps private papers in the same cupboard.

22953. Your own private papers?—Yes, my own private papers.

22954. It is not one of the official depositaries?—No, Sir.

22955. Then, in fact, the tenders are in your private custody from the time they are received until they are opened?—Yes.

22956. You are individually in charge of them?—I am individually in charge of them. They are addressed to me.

Witness individually in charge of tenders.

22957. Have you never known the cupboard to be left open by accident?—No.

22958. Have you ever known any papers to have been seen or touched in your absence?—Not out of that cupboard.

22959. I mean out of that cupboard?—No; because I always carry the key about with me.

22960. But if you had left the cupboard open by accident, that would not prevent any person from touching them?—No.

**Tendering—
Practice of
Department.**

No one to his knowledge ever tampered with tenders after their receipt.

22961. But you say you are not aware of any person having seen or touched those papers in your absence?—No; nor am I aware of ever missing anything out of that cupboard.

22962. You are aware, of course, that the tenders do not always come through the Post Office to you?—No.

22963. They are sometimes handed into you?—Yes, handed in; very frequently handed in.

22964. I suppose you treat them in the same way that you treat others that come through the post?—The same way.

22965. Has it happened that sometimes tenders have come to you without the envelope being marked as a tender?—Yes, that has happened very often.

If a tender comes without being marked, he opens it and then stamps it and treats it like the rest.

22966. In those cases you open the tenders, I suppose, without knowing what it is?—Yes, without knowing; then I make a note on the face of it and stamp it, and treat it then as a tender.

22967. But, of course, you become aware yourself of the contents?—Of course, I could.

22968. You have, have you not?—I do not think so. Those tenders are made at schedule rates, and I would not have the quantities there to make up.

22969. But the tenders generally have the quantities with them, and are moneyed out so as to give the gross sum as well as the rate?—Yes.

22970. But you say you have not become acquainted with the contents of any of the tenders in that way?—Yes; I do say that.

No one ever approached him deliberately to get information nor has he ever communicated the contents of tenders.

22971. Have you ever had any overtures made to you connected with any of the tenders for the purpose of disclosing the substance of them to any one?—Well, I could hardly say, Sir; I do not think that any serious attempt of the kind has ever been made. Contractors will try, of course, to get information. They do it in an indirect manner, but I do not remember that any ever approached me deliberately to obtain information, nor do I remember ever having given any information in connection with the works of that nature.

22972. Have you ever, either intentionally or unintentionally, communicated to any one the contents, or what you considered to be the contents, of any tender in the Department?—No, Sir.

22973. Or of any part of any tender?—Or of any part of any tender. I suppose the question covers tenders before receipt—I mean before the time of opening, and also before the time of entering into contract.

22974. I mean so as to give any person tendering any advantage over another?—No, Sir; never.

22975. Or to give any person who might tender any advantage over another?—No, Sir; never.

22976. Are you aware of any such information having been given by any one connected with your Department?—Personally, no, Sir. I am not aware, personally, of any.

As tenders opened they are marked by the Deputy.

22977. Is it the habit upon the opening of tenders to record each one in some book or some writing in the order in which they are opened?—As they are opened they are marked by the Deputy, and the Deputy

Tendering
Practice of
Department.

says "opened in the presence of ——" He signs, and if another officer is present besides himself he signs, and I sign last—that is on the face.

22978. That is on the general schedule is it not?—No; that is on the back of the tender itself, and the date is entered also; and besides that a list is made. There is a letter. We call this tender A, and when the last are all opened the same entry is made at the bottom, signed by the three parties present, but the names are not given. The names are reserved.

22979. Are not given in what?—On this list. The clerk is not aware of the name of the party who is letter A.

22980. Then, according to your understanding now, the substance of each tender is marked to the particular letter?—Yes.

22981. And in the list a corresponding letter is put down without the name?—Yes.

22982. And the clerk makes out the schedule?—Yes. Of course, all these schedules have to be revised.

22983. Then, as I understand you, at the opening of the tenders there is a schedule made out with a letter for each tender, and the particulars of that tender are given in that list?—I could not say, Sir, without referring. I believe you will find a schedule there. Upon looking at the schedule, I see that the names and other particulars are given.

22984. Without reference to this particular instance, I wish to ascertain the general practice upon this subject, and I would be glad if you would tell me what you remember concerning that in those cases when you were present?—Yes; I remember that as soon as a tender is opened the letter is written on it, and a schedule on which that letter is inscribed; also the name of the party tendering and place of residence. In some cases the name of the sureties, whether accompanied by cheque, or other security, and amount.

Process observed
in opening
tenders.

22985. Is it your recollection that that is the general practice, or is that only an odd case now and then where all those particulars are given?—It has been the practice generally with railway contracts.

22986. Is that sheet in which these entries are originally made preserved?—Yes; it is on that sheet that you see opened.

22987. Then the certificate which is given is really the original record is it—the schedule and certificate given by persons who say they open those tenders concerning the Pacific Railway is really the original sheet upon which the tenders are made?—Yes; that remains with the tenders—along with the tenders.

22988. Now, contract No. 1, connected with the Pacific Railway, is concerning a portion of the telegraph line, and we have such a certificate and schedule before us: will you please look at it (Exhibit No. 1) that does not give the residence, and several other particulars that you have mentioned?—No; this is one of the first; you will find the subsequent ones modified. There have been different modes of treating them; but you will find that the last contracts have all been treated as I say.

The earlier
contracts not
treated in the
manner described

22989. Then you do not mean that all the openings of the tenders have been accompanied by the formalities that you have mentioned, but only those of later date?—Yes; but I will go further. I do not

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Department.**

think there were any deposits of money with these first contracts. I am not very positive.

22990. Look at that particular schedule in your hand, I think it is signed by you: will you say that that was the original sheet upon which those particulars were put down concerning those tenders?—Yes, this is the original sheet upon which all this writing was done at the time that those tenders were opened.

22991. It was not prepared afterwards from original data?—No; this is the original record.

22992. I think I asked you once in your office whether you had kept any record of the time of the receipt of different tenders on different works?—You may, Sir.

22993. Could you say now whether you had kept such a record?—Yes; we keep a record.

22994. I mean of the receipt of the tenders?—Yes; it is a record on the face of the tender itself.

22995. That would not answer quite the same purpose as an independent record?—Until the tender is opened we cannot keep any other record but the letter itself.

22996. Do you say you cannot keep any such record, or that you have not?—We have not kept any such record, but the entry on the face of the letter.

22997. You understand that you could keep such a record if it was thought expedient?—Oh, yes.

22998. Then do you say that you keep no record of the receipt of tenders, and that the tenders themselves at the time of the opening furnish the only record?—The only record.

22999. So that if a tender should be mislaid or lost you would have no way of knowing that there had been one received, and had been lost?—No; unless the party came about it.

23000. You would have none in the Department?—No, Sir. Parties interested would, no doubt, enquire about it.

23001. I am not speaking of that, I am speaking of the management in the Department?—No, Sir.

23002. Do you know whether there was any method adopted of lettering the tenders in the same order in which they had been received, for instance, or whether they were lettered indiscriminately?—Indiscriminately, if they had been tossed; otherwise they would be lettered in the same order they were received.

23003. That would happen so, but not intentionally?—Not intentionally. The stamp would establish in any case the time when they were received.

23004. The time only, or the day, would not record the order in which they had arrived?—No; only the day, not the order.

23005. As a matter of fact, I understand you to say that a great many tenders are really put in the last day, are they not, and handed to you instead of coming through the post?—Yes; and if I mistake not there is a number fixed on each tender as it is received—if the envelope

The only record kept of the time of the receipt of different tenders is on the face of the tenders.

A great many tenders are put in on the last day.

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Department:**

is attached, of course. Will you allow me to see one? There are no envelopes here.

23006. We have noticed that very few of the tenders are now produced with the envelopes attached?—The envelopes would be in the office. (Mr. Miall hands witness several tenders with the envelopes attached, on none of which could witness find a number.)

23007. At the time that tenders are opened, has it been the practice to note any irregularity apparent at the time of opening?—Yes.

23008. Where would that note be made?—On the schedule that accompanied the tenders at the time of opening.

23009. Are you aware of any of the envelopes having been thrown away or intentionally destroyed?—No.

23010. As far as you know then they are still extant?—As far as I know; yes, Sir. As far as he knows envelopes have all been preserved.

23011. And likely to be found in the Department?—Yes; filed away somewhere.

23012. Have you looked for any authority for your telegram of May 11th, to Mr. Rowan, concerning the North Pembina Branch?—Yes. Railway Construction—Contract 5 A.

23013. Have you found any?—None in writing.

23014. What shape have you found it?—On the face of this letter which I now produce (Exhibit No. 324), instructions from the Deputy; and I may add, that all communications of importance sent by me go to the Deputy before being sent. All communications of importance before being sent go from witness to the Deputy.

23015. You mean before being answered?—Before being sent.

23016. You mean communications from you are submitted for approval?—Yes, are submitted for approval.

23017. Do you mean as a general practice?—I do not mean routine business, of course, but anything that requires to be approved.

23018. Do you find any written memorandum concerning that telegram of May 11th, except this which is endorsed on Mr. Whitehead's telegram of May 7th?—No; I do not find anything else.

23019. These words are: "Instructions have since been sent to Mr. Rowan, No. 7,818, dated May 12th, 1877, and signed T. T.," now, is that in substance all that you have found by way of authority for your telegram?—Not as authority.

23020. What else have you found as authority?—I do not find anything else but this; but I do not look upon this as authority.

23021. You think this is an evidence afterwards that there was authority?—Yes.

23022. Do you find anything else before 11th of May?—No; I do not find anything else.

23023. Then, what do you say about your having been authorized: what is your evidence now upon that subject?—Merely that I could not have sent the message without authority. Could not without authority have sent the telegram to Rowan, under which Whitehead got contract 15 prices.

23024. Why could you not have sent it?—Because it was a matter of importance, and it was not within my province to act without authority.

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struction—
Contract 5 A.**

23025. When you say you could not have sent it, do you mean you ought not to have sent it?—I should not have sent it without authority.

23026. And is it because you ought not to have sent it without authority that you say now you did not send it without authority?—That is the reason.

23027. You assume you did your duty and no more?—Yes.

23028. And because you assume that you did your duty and no more, therefore you think you were authorized?—Yes; that is it.

23029. Have you ever discussed the results of that telegram with Mr. Trudeau or any Minister of Railways?—No; I do not think that I have ever had any discussions about contracts with either the Minister, Mr. Trudeau, or Mr. Fleming. These matters were discussed between the engineers and the Deputy.

Never heard anything about serious results of telegram until the matter was brought forward in public.

23030. I do not mean discussions before the act was done, but I mean discussions since, in view of the serious results of the telegram?—No; I never heard anything about it until the matter was brought up before the Commission or before the House, I don't know which, a year after.

23031. Do you know if it was brought up in the House: I don't remember seeing any record anywhere of its being brought up in the House?—I do not. Perhaps I mix up the other affair of Whitehead's with it, the large expenditure—Oh, yes, that must be it. There was a committee of enquiry in connection with Mr. Whitehead's contract.

Does not recollect showing telegram to Trudeau or the Minister before sending it to Rowan.

23032. Have you any recollection, as a matter of fact, that you did show this telegram to Mr. Trudeau or to the Minister before you sent it to Mr. Rowan?—No, Sir.

Telegram sent four days before receiving the Order-in-Council.

23033. I understood you to say this morning that when you were authorized to take any step, or make any communication, that you would note the substance of that authority on some paper if there was any paper connected with it. Now in this case there was the Order-in-Council passed on the same day, the 11th of May, but I do not find any memorandum of any kind. This is the Order (Order produced), and I would like you to explain, if you can, why there is no written record of your instructions?—That is the practice. This Order-in-Council was received on the 15th of May, by the stamp, from Council. Documents, reports of engineers, and other documents bearing on the matter in hand, generally accompany reports to Council, and they are returned with the order. The message sent to Mr. Rowan is dated 11th of May, consequently four days before the Order-in-Council came before me—before I received the Order-in-Council.

23034. Do you mean that this was one of the occasions when there would be no paper connected with it upon which you could record the instructions?—That would be one of the occasions.

23035. So that you say there was no paper on which to record the instructions?—I could not say positively there was none, but I had none before me at the time.

The Deputy would be answerable for the wording of the message.

23036. Who was answerable for the wording of that telegram?—I should say the Deputy would be, because it leaves him. If he is not satisfied with the construction or wording of the message he alters it, and he must be satisfied that it is correct before it is sent.

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struction—
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23037. He would not be answerable if it had not been shown to him?—Of course not.

23038. Well, was this shown to him?—I could not say.

23039. The theory that he was answerable depends upon that fact?—Of course.

23040. Could you say whether you showed this to the Minister?—No; I do not remember. I was not in the habit of doing it. More likely would I show it to the engineer.

23041. Than to the Minister?—Than to the Minister.

23042. I suppose, really, this is all surmise. You have no reason for supposing that you showed it to any one of them at all?—Well, if I followed the usual practice, I did, but I could not say at this time—at this distance—whether I did or not.

Has no recollection what he did.

23043. This memorandum, endorsed on No. 13,732, dated May 12th, 1877, in whose handwriting is it?—In Mr. Trudeau's, the Deputy.

23044. It seems that that Order-in-Council was necessary to authorize any one to telegraph to Mr. Rowan, and that it was passed on the same day as the telegraph was sent; and, therefore, I suppose there must have been some communication between the persons who were at the Privy Council and you to enable you to send that telegram as the result of the Order-in-Council?—Yes.

There must have been some communication between persons who were at the Privy Council and witness to enable the latter to send the telegram in question.

23045. Now, does that refresh your memory at all as to what happened on the occasion, whether any one came from the Council to you and directed you to do it?—No, no one would come from the Privy Council.

23046. They might send a memorandum to you, or the Minister might go to his Department?—Yes; the Minister might give instructions to the Deputy or to Mr. Fleming to say that an Order is passed and authorize the work. The instructions might come in different ways—either from the Minister, from the Deputy, or from the engineer.

23047. I suppose, from what you have said about it, that you do not remember that there was any pressing emergency about this particular contract?—Nothing, only from what I saw in Mr. Fleming's report.

23048. But you do not remember the circumstance?—No.

23049. Did you, as a rule, take any part between the persons who were making the contract for the Department and the Department, or was it generally done through some other persons?—In what way?

23050. Did you make any of the arrangements with the contractors?—No; I had nothing to do with that, with the exception of signing to the contract when it was ready for signature.

23051. But did you, of your own discretion, take any part in any of the negotiations at any time?—No.

23052. Please look at a letter dated 29th of December, 1874 (Exhibit No. 325), a letter from James Cooper, and say whether you answered it?—This letter appears to have been received by me on the 2nd of January, by this stamp here.

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Department.

23053. And did you answer it?—Yes.

23054. To what effect?—None wanted.

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Department.**

23055. Where do you understand the letter was between its date and the time you received it?—I could not say, I see the letter was endorsed by the clerk on the 7th of January. My note "None wanted, by order of the Minister." I received that instruction on the 4th of January. It must have been answered before it was endorsed. I do not know the date of the answer.

23056. I believe as a matter of practice, you put on the cover of each of these letters received in your Department by you the date of the letter above a line, and below the same line the date upon which you received it as Secretary: is that the general practice?—No. The second shows the date of its entry in the registry by the clerk.

23057. Then it is not always registered by the clerk as received upon the same day upon which it is actually received?—No; sometimes several days will elapse. Some of the tenders will be three months before they are endorsed.

23058. Then as to this particular letter, what do you say about the time you received it?—I received it, by the stamp, on the 2nd January.

23059. Can you say, from anything you find upon the letter now, from whom you received your instructions as to the answer?—By order of the Minister, I could not say it was through any one, but by order of the Minister, whether conveyed through Mr. Buckingham or the Deputy I am unable to say.

If told by the Deputy, by Fleming or by the private secretary of Minister, that the Minister had given certain instructions, he would endorse a document "by order of Minister."

23060. Then, if you were told by some third party, not the Minister himself, that the Minister had given particular instructions, would you endorse on the back of the document those instructions as being received from the Minister?—It would depend, of course, upon the party who would convey the intimation. If it came from the Deputy, or from the private secretary, or from Mr. Fleming—those are the only parties that would communicate with me on a subject of this kind.

23061. If any one of those three came to you purporting to bear instructions from the Minister, you would endorse upon the document those instructions and mark them received by order of the Minister?—Yes.

23062. Without stating the channel through whom you received them?—Without noting through whom received.

23063. So you cannot tell on finding on the paper the words "By order of the Minister," whether the Minister gave you those orders himself, or whether you received them from some of those parties?—I could not.

23064. Can you say now, either from looking at that document, or from any other source of information, from whom you got those instructions to say, in answer to Mr. Cooper's application, that no more rails were wanted?—I could not. Looking at this pencil note in the corner, it looks like Mr. Buckingham's writing, and it looks like mine. It is difficult to make out, but I do not see either why I should have written a pencil note in the corner, and written in ink on the face of the paper the same thing.

The pencil direction on Exhibit No. 325 probably in writing of Buckingham, the private secretary of Minister.

23065. Then that leads you to suppose that the written direction is from Mr. Buckingham?—The pencil direction, and it is repeated on the face—on the back of it—with ink.

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Department.**

23066. By yourself?—Yes.

23067. A message brought by Mr. Buckingham as from the Minister would be received by you as carrying the same authority as if Mr. Fleming or Mr. Trudeau brought it?—Yes, of course.

A message from a Minister through a private secretary received by witness as having as much authority as if it came from the Deputy Minister.

23068. And I suppose from any other private secretary of any Minister?—Yes.

23069. Mr. Bradley, for instance, from the present Minister?—Certainly.

23070. Look carefully at this pencil memorandum on the face of the letter: do you think you have a strong impression as to who was the writer?—Yes; I would say that this is in the handwriting of Mr. Buckingham.

Recognizes handwriting of Buckingham.

23071. Referring again to that telegram of the 11th of May to Mr. Rowan, about the North Pembina Branch, could you say whether you got any of the instructions as to the details from Mr. Fleming or anyone connected with the Engineering Department?—No; nor is it likely that I would have it.

**Railway Construction—
Contract 5 A.**

23072. Some time ago we asked from your Department a statement of the deposits that had been made, if any, in each case accompanying tenders, or accompanying contracts by way of security; and also of what disposition had been made of them: I do not know whether you are aware if such returns have been made, or whether you are able to give the information now?—No; it has not come before me.

Tendering.

23073. Of course you have the means of ascertaining that in your Department?—Yes.

23074. And I suppose we shall have to ask for it again?—I will take a note of it.

23075. You spoke this morning of the tenders being deposited in a cupboard in your room: is that the cupboard attached to your desk where you sit?—Yes.

Where tenders are kept.

23076. Is it the portion directly in front of your seat, or is it on one side?—It is on the side.

23077. Is it a sort of wing to your desk, or is it the main portion?—It forms part of the upright portion.

23078. Is there a centre portion besides?—There is a centre portion also made into pigeon holes, and it closes.

23079. And this is a separate wing with an independent door?—Yes.

23080. It is not attached to any wall?—No; it stands in the centre of the room.

23081. It is a wooden cupboard?—Yes; pannelled in the back.

23082. Have you ever had any occasion to think that it had been tampered with in any way, or that any portion of the wood-work had been removed?—No.

23083. Nor that the lock had been tampered with?—I have proved several times that the lock had been tampered with, but not successfully. I had occasion to show your Secretary how it might be.

Tendering.

23084. And how it would be discovered by you immediately afterwards?—Yes.

No reason to think that the cupboard where tenders are kept has ever been tampered with.

23085. Have you any reason to think that the contents of that cupboard were at any time handled by any person against your wish and without your knowledge?—No.

23086. Or in any other way, for the purpose of giving other parties information as to the contents of tenders before the regular day and hour?—No.

23087. Can you see any way, under the practice or management of those matters in your Department, which would permit of a person getting information as to the contents of tenders before the last hour for receiving them, so as to take advantage of that in framing a tender on his own behalf?—No. I could not see how it could be done, the tenders being under seal until they are handed into the Deputy.

Horetzky's Claim.

23088. I believe you expected to be called upon to produce some correspondence concerning a claim of Mr. Horetzky's for an increase of salary or for some arrears?—Yes.

23089. Have you the correspondence on the subject with you?—I have.

23090. The Commissioners have decided for the present not to investigate any matter connected with money claims against the Government, and therefore we do not think it material to the subject we are enquiring into to look into this claim; if we change our mind we will then ask you to produce the correspondence: as I understand, it relates entirely to a money claim by Mr. Horetzky for arrears?—Yes; for arrears.

23091. Or for some allowance of some kind from the Government?—Yes.

Tenders.

23092. Did the tenders for the works, as far as you can remember, always come addressed to you as Secretary, or were they sometimes addressed to other persons in the Department?—Yes; sometimes they would come to the Minister direct.

23093. And how would they reach you?—They would be sent in by the Minister through the private secretary—handed in.

23094. Do you remember any instance in which they were so handed to you, or could you state the work for which the tender was submitted?—No; I could not. The notice calling for tenders said "Tenders addressed to the undersigned," and marked tender for such work; but notwithstanding that, parties would take in their tenders to the Minister, but on what occasion I could not say, but I know that it has been done.

23095. Could you say whether upon any of those occasions there was any irregularity in the paper or any other matter peculiar to that particular instance?—No; I could not.

OTTAWA, Thursday, 7th July, 1881.

Railway Location and Construction.

COLLINGWOOD SCHREIBER, sworn and examined :

By the Chairman :—

23096. You are the Chief Engineer of the Pacific Railway?—I am now; yes.

23097. Since when?—Since the 20th May, I think, 1880.

Chief Engineer since May, 1880.

23098. Had you any connection with that road before that time?—Yes, I entered upon that service on the 1st December, 1879, as superintending engineer of the district between Fort William and the Rocky Mountains.

Entered service 1st December, 1879, as superintending engineer.

23099. Where were your headquarters at that time?—My headquarters were in Ottawa at that time.

23100. Did you spend much of that period before you were Engineer-in-Chief away from Ottawa?—Yes; a considerable portion of it I spent up in the North-West between Portage la Prairie and Fort William.

23101. Did you make any personal inspection of the works under construction?—Yes; I made a close inspection.

23102. Which works?—Contracts 42 and 15; in fact I may say between Portage la Prairie and Eagle River.

23103. That would include contract 41 then, as well as 42?—No; I did not go over 41 just at that time.

23104. Which works did you inspect closely?—42, 15, Pembina Branch, and contract 48.

Inspected closely contracts Nos. 42, 15 and 48, and Pembina Branch.

23105. There was very little to inspect on 48 up to the time you were Chief Engineer?—Yes; very little.

23106. About what time of the year did you go to these two sections 42 and 15?—In December; Christmas, 1879.

23107. Did the snow in any way interfere with your inspection of it?—Not at all.

23108. Were you able to make any comparison between the location of the line and any other location which might have been adopted in the neighbourhood?—In the immediate neighbourhood; yes. I looked into several little matters in connection with the detail of location, but nothing extended at all. I may say that when I was appointed my object was to economize all we could, taking things in the condition they were.

Object to economize all he could.

23109. Then, as to location, you mean you were only able to say whether certain slight deviations could be adopted?—That is all.

23110. But as to the general location you did not make any comparison between what had been adopted and any other which might have been adopted?—None whatever.

23111. And the slight deviations to which you refer are those, I suppose, which might happen on any location after you had got more familiar with it?—Well, as you can understand from day to day in a very rough country as you study it, you can always make slight improvements by shifting the line one way or the other to diminish the work without impairing its efficiency or stability.

In a rough country from day to day slight improvements can be made by shifting the line.

Railway Location and Construction—Contract No. 42.

23112. Upon section 42 did you find any particular matter which attracted your attention, or were the works progressing as you supposed you would find them or wished to find them?—At the time I went there first, the works were not progressing so satisfactorily as I could have desired, and that was one of my objects in visiting it to give the Government such information as would lead them to counteract this and improve it.

Progress not satisfactory; not sufficient force on the line.

23113. In what respect was not the progress satisfactory to you?—There was not sufficient force upon it.

23114. You mean on the part of the contractors?—Yes; on the part of the contractors.

23115. Then, it was progressing too slowly?—It was progressing too slowly at that time.

Savings from slight deviations amount to \$60,000 or \$700,000.

23116. Was there any other material matter which was not satisfactory to you?—No; as I tell you, we were improving the location from time to time; there were various little improvements we made, which made large savings. I think the savings from slight deviations amount to \$600,000 or \$700,000.

23117. For the present I was directing my question to this subject—whether there was anything in the character of the work that was being done which was not satisfactory?—Oh, no; they were making very good work.

23118. Then, the work itself was satisfactory to you, but not progressing rapidly enough?—Yes; quite so.

23119. Did you begin to suggest alterations which would be a saving at that time, or did you wait until you became Engineer-in-Chief?—No; I had authority at that time to make any changes with the view of economy that could be made without injuring the character of the road in any way.

23120. That was in the beginning of the winter of 1879-80?—Yes, 1879-80.

Difference between the original estimate and what it is now estimated to cost, will be \$1,500,000.

23121. One of the witnesses before us (I think it was Mr. Jennings) has suggested the saving would be a very large one: have you that opinion?—The difference in the original estimate and what we now estimate it will cost, will be something like \$1,500,000, I think, on 42.

23122. Will that saving be accomplished by lowering the character of the road in any way as a permanent work?—Well, I would not say. Of course, a wooden bridge on a pile foundation is not so substantial as on a rock foundation, and it was originally designed across some of those lakes and bays to have a rock foundation, that is to drop in loose rock you know. Owing to the delay in pushing forward the work, it became necessary to adopt the piling to enable the work to be completed by the time that the Government desired it, and that was the reason. Of course, the piling is not so substantial a work as a rock foundation would be—not so permanent in character.

The saving will, in some instances be accomplished, by making the work less permanent than it would otherwise have been.

23123. Then this saving will be accomplished to some extent by making the work a less permanent one than was originally intended?—In some instances.

23124. I mean in some respects?—Yes; in some respects.

23125. Could you say to what extent the saving will be accomplished in that way?—Well, the saving, owing to the improvement in location (I am speaking in round numbers now) will be, I think, somewhere about \$650,000, and the balance would be in modified design.

23126. This modification of design, as I understand you, being really to make it less solid and less permanent than first intended?—So far as these foundations are concerned—the piling instead of rock.

23127. Then, in order to make the road as solid and as permanent in its character as was first intended, it may be necessary at some future time to add to this present outlay?—Yes, true; but I would have to refer to the specification in that connection. Although this rock work which I speak of was placed in the original bill of works, still there was a clause in the notice to contractors that it was probable or possible that this would be done away with, this rock, and something else substituted. That was in the original notice, so that it was evidently originally in contemplation.

23128. That is true, but you are making a comparison between the present estimated cost and the originally estimated cost, and you are assuming the originally estimated cost to be that of a permanent work, not the kind you are now making, but more permanent and solid work?—Of course, it was. If you would place a rock basis under an embankment, it would, of course, remain there, but piling will decay.

23129. I am endeavouring to ascertain how much of this saving is really a permanent saving to the country or a temporary saving, and therefore I ask how much is due to putting in works which will answer the present purpose, but will eventually have to be replaced by works such as were contemplated when this first estimate was made—give us if you can the proportion in round numbers for the present?—I think you will have to take it as I have stated it, about \$650,000.

23130. Then \$650,000 is absolutely saved?—Absolutely saved.

23131. Without making the road any less permanent than was originally intended?—Yes, certainly.

23132. And \$850,000 is saved for the present by putting in works of a less permanent character?—Yes; probably so.

23133. Do I understand you to say that, besides the present saving by putting in works of this character, you facilitate the completion of the work?—That was the absolute cause of this being done at that time.

23134. Are you still of opinion that the change in the character of the work will have the desired effect—that that section of the road will be finished much earlier than it otherwise would be?—Yes. They have even now difficulty in procuring a sufficient number of men to finish it in time on the modified design—great difficulty.

23135. You also made a close inspection of section 15?—I did.

23136. What did you find there as to the character of the work being done?—The work was being done very well. The character of the work was very good all through, I think.

23137. That was before that section had been taken out of the hands of the contractor?—Certainly.

Railway Location and Construction—Contract No. 42.
\$650,000 saved by improved location and \$850,000 by modified design.

\$650,000 is absolutely saved without impairing in the slightest the permanent character of the road.

Contract No. 15.

Character of the work good all through.

Railway Location and Construction—Contract No. 15.

23138. You are speaking now of December, 1879, or thereabouts?—Certainly.

23139. Was there force enough on that road to satisfy you at the time?—No; there was not.

23140. Did you complain to the contractor on that subject?—Yes.

23141. With what result?—Well, the result was an explanation from him that he was in difficulty, and that it was absolutely impossible for him to pay his men, and this resulted in their leaving in large numbers, and the balance of them, although they remained about the work, they were on strike for their wages.

In March, 1880, the Government assumed the work.

23142. Did it remain in the hands of the contractor?—No; in March, 1880, the Government assumed the work and carried it on at the expense of the contractor under the terms of the contract.

23143. I suppose that was with your approval and under your management?—Yes.

23144. Then the character of the work at the time of your first inspection, as I understand you, was satisfactory to you?—Quite so.

23145. Were you able to form any opinion as to whether the location on that section had been made with care and had been properly selected—I mean the general location. I do not mean as to all the minor particulars which could be improved afterwards?—As I tell you, I did not look outside the line of road at any distance or anything of that kind. I merely passed through the country upon the present line.

23146. At that time matters had gone too far to change the general location at all events?—It would have been impracticable.

23147. It did not seem useful to make any comparison for practical purposes?—Quite so.

Cross Lake.

In immediate neighbourhood no better location could have been made.

23148. Have you ever considered the subject of the crossing at Cross Lake, and whether it was well selected, or whether a better line could have been obtained in the immediate neighbourhood without degrading the road?—I did look into that matter, and so far as I could judge in the immediate neighbourhood, I do not think any improvement could be made in the neighbourhood, not by confining yourself to the same grades, you know.

23149. If you will please look at the topographical sketch (Exhibit No. 100) and say whether any of the lines laid down there, other than the one adopted, has been considered by you with a view to seeing whether it was as good as or better than the one adopted?—I have not considered any of those.

23150. Please look at another sketch (Exhibit No. 112)?—I have examined the more southerly line shown as a divergence from the easterly terminus of section 14.

23151. Did you discuss that with any one else?—Yes; with Mr. Rowan.

Points out a line which would have been a better location.

23152. What conclusion did you come to upon that subject?—The conclusion I arrived at was that the black line appeared to be the preferable line. It would have been rather cheaper, but still there would not have been a very great difference, but that would be the cheaper line of the two.

Railway Location and Construction—Contract No. 15.

23153. Is that the line known as the Forrest line?—I do not know the names of them at all—I do not know what they are designated at all.

23154. Do you remember what was estimated to be the saving if that had been adopted?—No; Mr. Rowan showed me all the figures.

23155. Did you make any independent calculations on the figures?—No; I did not. Everything was so far advanced that nothing could be done to improve it at that time.

23156. You did not make a careful inspection at any time, as I understand you, before the date of our Commission, the 16th June, 1880, upon sections 14 or 25 and 41?—No, I did not make any careful inspection of section 14. I had no object in doing so. I was frequently over it, necessarily to get to No. 15.

23157. As to the railway west of Red River, was there anything that called for particular remark or management on your part at that time?—Well, the work there was not progressing by any means satisfactorily; the necessary speed to complete it within the time named in the contract. It was not satisfactory. **Contract No. 48.**

23158. Did you take any steps in connection with that portion, in the spring of 1880?—Yes. I might, if you will allow me, explain one reason why the work was not progressing very rapidly. All that part of the country was inundated. Even in the spring in the next season, as late as June, when we were running through that part the locomotives were running with the water in their ash pans after running upon the track as laid. That was really one of the prime causes. The difficulty was for the contractor to get over this six or seven miles of flooded country to get to the portion beyond it.

23159. The flooded portion was beyond Winnipeg?—It commenced at Winnipeg and extended from Winnipeg outward. That prevented us working on the other part on account of not being able to reach it with rails, and rolling stock could not run over it that spring.

23160. Was there any matter connected with section 41 or 25, in which action was necessary to be taken before June, 1880?—Yes; in December, 1879, at the time of my appointment as superintending engineer, Mr. Fleming gave me instructions, and handed me measurements and reports of Mr. Bell and others who had measured these works, and asked me to look into these matters, and also into the progress being made with these works. **Contracts Nos. 25 and 41.**

23161. Was there any particular subject to which your attention was called specially?—Yes; my attention was specially called to the apparent discrepancy in the measurements shown. **Instructed to enquire into discrepancies in quantities.**

23162. Was that earth work or rock work, or work of all kinds?—This was supposed to be attributable to the measurement of what they termed muskeg there—material in the swamps, you know.

23163. Did you take any steps concerning that before you were Chief Engineer?—Not upon sections 41 or 25. I was recalled to Ottawa upon business before I reached 41, and I did not visit it until after that. **Recalled to Ottawa.**

23164. Did you before June, 1880?—No; not until after June, 1880. I did not visit 41 or 25.

**Railway Construction—
Contracts Nos.
35, 41 and 42.
Muskeg.**

Held views different from Fleming on the subject of muskeg measurement.

Witness thinks that under the terms of the specification and contract muskeg has to be measured as earth work in excavation.

Reasons for this view.

What is meant by phrase in specification, "where it is impossible to measure in excavation," i. e., where the permanent shape of the country makes it impossible.

23165. Had you, before that time, had any discussion or consultation with Mr. Fleming upon the subject of muskeg measurement and material?—Yes; certainly.

23166. Were you and he in accord upon the matter?—Well, no; we held different views on that subject, with regard to muskeg, as to its measurement under the contract.

23167. He has, in giving his evidence before us, expressed his views both on the expediency of using this material, and also on the mode of measurement to the contractor after it was used: would you please say what opinion you held upon these matters at the time you and he were discussing the subject?—In the first place, my opinion is, with regard to the measurement, that under the terms of the specification and contract it certainly has to be measured as earthwork in excavation. I think there is no doubt about that, in my mind. Of course, I am perfectly aware he holds a different opinion.

23168. You mean in the locality from which it is excavated and not in the embankment?—Exactly.

23169. Could you state, shortly, your reasons for that view?—As to the way it should be measured what I feel is this: sub-section 3 of section 17 is as follows:—"All other excavations of whatever kind, with the exception of off-take ditches referred to in clause 13, shall be termed earth excavation." Now it appears to me perfectly clear under that, that this material should be measured as earth excavation. These other two sub-clauses, 1 and 2, refer to solid rock and loose rock, and it is "all other excavation excepting those specified shall be termed earth excavation."

23170. I think Mr. Fleming considered that that sub-section of the clause would not apply to this particular material, because there was another section or sub-section in the specification stating that where it was impossible to measure in excavation, then it should be measured in embankment: would you look at that and explain your views upon it?—Yes, my views upon that are these: that is a clause I have had in many specifications before, and I have measured materials under that clause, and I have always understood it to mean in a case where, for instance, you might be running through a rocky country where the earth is in pockets, where it is impossible to measure it; perhaps the contractor got a yard here and ten yards in another place, and you could not measure it in excavation, and in such cases it would be unfair to ask the contractor to go far for it, and we allowed him to use it and measured it in embankment.

23171. I understand you to say, as an engineer, that the word impossible means when the difficulty is occasioned by the shape of the locality from which the material is removed?—Precisely.

23172. And in that case only it should be measured in the embankment in which it is placed?—Certainly; I have acted upon that in the past.

23173. Did you explain that these were your views to Mr. Fleming while he was Engineer-in-Chief?—Yes; we have discussed this matter many a time, and as a subordinate officer I merely expressed my views when asked, and did not press them if they were not entertained. He, as Chief Engineer, had his own views and adhered to them, I suppose, unless convinced that they were wrong.

**Railway Con-
struction—
Contracts Nos.
25, 41 and 42.
Muskeg.**

23174. While he was engineer, did he hold opposite views to those which you now express?—Yes; he did.

23175. At present we are speaking only of the mode of measurement?—I understand.

23176. Then, as to the other branch of the subject, the expediency of using this material crossing muskeg country, would you please state your views upon that subject?—For instance, sections 42, 41, 25 and 14, I take those four sections on which there is a large quantity of this material. It would have cost a very much larger sum, I am satisfied of that, to have made those embankments of sand, clay or such materials, and the embankments, in my opinion, would have been no better, if so good—no better, certainly. In some instances it would have delayed the work, I think, probably two years, to have done it, and it would have been almost impracticable to do it.

Thinks muskeg embankment as good or better than clay or sand and as cheap.

23177. When you say that an earth embankment would cost more, do you mean that it would cost more even than the muskeg material has cost, being measured and paid for in full without any reduction?—In excavation?

23178. Yes; in excavation?—Yes. I mean this: in my judgment, we assume, if you like, that the muskeg shrinks 40 per cent.—we will suppose it does—

23179. I think some of the evidence went to show that it shrank more than that—perhaps 60 per cent.?—Well, call it 60 per cent. if you like. It is very light material, and in placing this upon a swamp, upon a muskeg, there is not the same amount of settlement in the embankment in the bottom that there is if you place a heavier material such as stone, and so forth, there. Muskeg: I had it weighed out of curiosity, and when dried the earth weighs nearly five times as much as the muskeg.

23180. Then, I understand you to say that the muskeg material used in the embankment will provide an efficient embankment at absolutely less cost than the earth embankment over the same spot?—That is my position—the earth will cost as much if not more.

23181. And although the muskeg material be paid for at the full price in the original locality by the yard?—Yes; that is my opinion; and I may say further—although I do not know that it is right to say further—

23182. If you please?—I would say further than that, that even after you have made your embankment of this heavier material you will then have to drain those muskegs, and in doing so you necessarily have to dig ditches, and that material would have to be wasted. The consequence is, you would not only have to shift the material you put in the bank, but you would also have to dig ditches, perhaps not so large; that would all have to be paid for. How would you pay for that? That would have to be paid for in excavation.

Even if earth had been used money would have had to be paid for excavating muskeg in order to drain the country.

23183. So that a certain amount of muskeg material would have to be removed, even though not used in the embankment?—Certainly.

23184. And must be wasted?—Yes; and it would necessarily have to be paid for. It would have to be done by the contractor at schedule rates.

**Railway Con-
struction—
Contracts Nos.
41 and 42.
Muskeg.**

23185. At one time, I think before the time that you name as your first connection with the railway, Mr. Fleming suggested to one of the engineers in charge, Mr. Jennings, I believe, that instead of making the embankment in the way it had been made up to that time by using nothing but the muskeg material itself, that a change should be made and cross-logging should be used: have you given that subject your consideration?—Yes; that cross-logging of muskegs was a very important thing. It is customary to do it in ground of that nature, and all through contract 42 this plan has been adopted, and indeed upon 41, both very much the same—both 41 and 42.

Muskeg cross-logged. This does not do away with the necessity of using muskeg over it.

23186. Where that cross-logging has been used has it had the effect of doing away with the necessity of using muskeg over it?—No; I might mention one particular point: I cannot name the station just now, but on section 42 there is a muskeg there which was cross-laid with these trees, and we carried an embankment forward from the cutting after it was built up to nearly its full height: it went out of sight altogether and threw up the cross-logging up on end on each side.

23187. That, of course, was ordinary earth?—Ordinary earth. Upon this same earth the borings showing precisely the same ground we filled with muskeg.

23188. Was it a continuation of the same embankment?—Yes.

23189. How has that answered?—It has settled but very little.

23190. Was that continuation made over cross-logging?—Yes.

23191. With what material?—Muskeg.

23192. Muskeg as against ordinary earth?—Yes.

23193. And what do you say was the result?—The result was that the settlement was comparatively slight. There was settlement enough just to turn the ends of brush up slightly.

23194. I suppose that would be the natural result, the muskeg material being so much lighter, as you have already described?—No doubt.

Muskeg embankment when "blinded" makes one of the finest of embankments to run over.

23195. Assuming it possible to get ordinary earth, or at your option, muskeg material, to be used in an embankment across such a locality, which do you think would be preferable in the interest of the railway assuming that there was no difference in the cost per yard of excavation?—Assuming there was no difference in the cost. Well, the muskeg embankments make a very easy road, and if necessary we "blind" it, if you understand what we mean by blinding it. After the embankment is finished we put some material over it to protect it from fire, and it makes one of the finest embankments you can run over.

23196. Finest for what reason?—It is so elastic.

23197. Is it easier on the rolling stock?—It is easier on the rolling stock, and on the rails, and easier every way.

23198. You will please understand, in asking the question, where I said I wished you to give your view as to the expediency of using muskeg or other material, although the price per yard of excavation was the same, I had no reference to the total of the quantity to be used in the embankment?—I understand.

23199. Then is there anything connected with that matter which helps you to form your view; would it take more of the earth

**Railway Construction—
Contracts Nos. 25, 41 and 42.
Muskeg.**

than of the muskeg?—My impression is that making due allowance for the shrinking of the muskeg—that is supposing that it shrank 60 per cent., I believe that it would take 60 per cent. more of the quantity of earth than the section would show—that is to say, it would settle that much.

23200. That the natural surface, in fact, would be depressed by using earth to a much greater extent than using muskeg?—Yes; we have proof of that from practice.

23201. Then the increased quantity would have to be made up of earth?—Certainly.

23202. And that extra quantity, as I understand you to say, would in your opinion quite counterbalance the loss of the muskeg material by compression?—Undoubtedly, in these very soft places. In measuring these muskegs first of all there is a little narrow drain dug through them to draw off all the water you can from them. Then, after that, it is laid out, and it is then the measurement commences. We dry them all we can first.

The amount of earth which would be lost by sinking would counterbalance the shrinkage of the muskeg.

23203. I suppose, when you took charge of the road as Chief Engineer, the disputes had not been altogether settled between the contractors and the Government upon this subject?—No; they had not.

23204. Did you entertain these same views at that time which you express now?—Quite as strongly. I have all through, and I see no reason to change them.

His present views those he always held.

23205. Then, since June, 1880, as I understand it, you have remained of the same opinion that you were before that?—Quite so.

23206. And the views you state now are the same views you held before our Commission issued, and have not been altered since by any claim being made?—Not in any way.

23207. Were any of these disputed claims at any time discussed between you and Mr. Fleming while he was Chief?—Merely as to this 25 and 41. Those matters were naturally, when I received instructions from him to look into those matters, you know.

23208. Did you then express your views that the claims ought to be settled on the basis which you have described?—No; I could not do that. I did not know. So far as these particular claims were concerned I did not know the cause of this apparent discrepancy. It certainly was rather startling. So far as these particular claims were concerned I was not aware of the whole cause of it, you know, but after seeing section 42 and these other places, I was fully satisfied, and told Mr. Fleming so.

As to claims of contractors gave his opinion on muskeg to Fleming, while he was still Chief Engineer.

23209. That is while he was Chief?—Yes.

23210. Then do I understand you to say that while Mr. Fleming was Chief Engineer you looked into the matter to some extent?—In 41 and 25? I looked into 42 where there was a large quantity of the same class of work, and it was in connection with that I looked into it.

23211. I suppose you have seen the report of Mr. Bell upon the re-measurement?—Yes; it was that Mr. Fleming placed before me.

23212. Here is one which has been placed before us (Exhibit No. 294) concerning a portion of contract No. 25: is that the one to which you refer?—I have no doubt this is the one. Yes; I have no doubt.

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Muskeg.**

At first thought there was something wrong about the original measurements, but on seeing the ground found that it was consistent with correctness of original measurement.

23213. What was your opinion at that time as to the foundation of the claim made by the contractors?—So far as these measurements were concerned, as I tell you, at this particular time when this was handed to me, I tell you it was rather startling. I thought there was something wrong about these measurements—that is to say, not about these measurements but about the original measurements; but directly I saw the ground I entirely changed my opinion. Seeing such a large discrepancy and believing this work to be carefully measured (I have no doubt they did it carefully) I have not the slightest doubt the ground when they saw it was totally different from when it was originally measured.

23214. Then, I understand you to say that it is quite consistent with the correctness of their measurements that the previous measurement should be also correct?—Quite so under the peculiar circumstances.

23215. Would you describe what you understand to be the peculiar circumstances?—The peculiar circumstances are the nature of the soil and the nature of the country through which it ran—that is, that when a ditch was excavated and the material placed in the middle of the bank within a short period afterwards the sides of the ditches would close towards one another and the bottom would rise up and not show the original depth. In one particular case, within a week, I measured a ditch in this muskeg. The day the man dug it, it was exactly eight feet wide; one week afterwards it was only seven feet three inches wide.

By Mr. Keefer :—

23216. And as to depth?—And the depth had changed too, but not so much. The bank was not finished. I am speaking now of the measurement of the earth work including the muskeg.

By the Chairman :—

Discrepancy in solid and loose rock.

23217. I believe a considerable discrepancy was also discovered in some of the other items, such as the solid and loose rock: can you explain that discrepancy?—Well, so far as any return that Mr. Bell could make, it is utterly impossible for any engineer to go through the work afterwards and pretend to measure the loose rock—utterly impossible—I say impracticable. The very large portion of loose rock goes into the body of the embankment. You cannot see it. It is not in the cuttings nor is it in the sides of the banks. It is out of sight; but the loose rock in these sections was not measured, I have no doubt, according to the terms of the specifications. There is no doubt about that.

Bell could not re-measure the loose rock; he might estimate it.

23218. Would that explain the discrepancy in those items, or some of it, between the original measurement and the re-measurement by Mr. Bell?—So far as that is concerned, I maintain there could not be a re-measurement of loose rock by Mr. Bell. He might estimate it; he could not measure it; it was out of sight.

23219. And about solid rock?—Solid rock he should be able to measure.

The solid rock he should have been able to get approximately.

23220. Do you remember that he stated a considerable difference, nearly 24,000 yards?—That is a thing that he should be able to get approximately at. He could not get it correctly without assuming the division line between the earth and the rock shown on the original cross-sections made by the engineers. He must assume those to be correct,

**Railway Construction—
Contract No. 25.
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otherwise he would not have any means of ascertaining the surface of the rock through the cuttings. He must assume that first.

23221. Can you explain in any way how it is that Mr. Bell found, or considered that he found, some 24,000 yards less of solid rock excavation than had been returned?—I can only assume that he must have taken, so far as he could find it, the rock projecting out on the sides of the slopes, and drawn a straight line from one to the other, from slope to slope, and assumed that as the top of the rock. That might or might not be it.

23222. Then I understand you to suggest that he may have made a mistake by measuring less rock than was excavated, because he only took the level between the points as they existed at the last measurement?—He may have measured it as he found it. He may have found the top of the rock at one spot and the top of the rock at another spot at each cutting.

Surmises respecting solid rock.

23223. Have you any reason to think that that is the way in which he did conduct this measurement?—No.

23224. That is a surmise then, and nothing more?—Nothing more. I spoke to the engineers as I passed over the line upon these subjects and examined them upon it. They have re-checked their measurements with the cross-sections, and have no doubt as to the correctness of their measurements of the rock. Then, again, there is another possible explanation of part of this. Boulders measuring over a certain size are solid rock. Now if there were, as there are through that country, boulders of a very large size, Mr. Bell could not have possibly the means of measuring those after the work was completed: that is another possible way.

23225. There would be no rock cutting to show where those boulders had been?—There might be immense boulders in the cuttings and there would be no possible way of measuring those, because they would be in the embankments.

Boulders might have escaped Bell.

23226. Did you, before June, 1880, see this report of Mr. Albert J. Hill's appended to Mr. Bell's?—Yes.

23227. Are you familiar now with the substance of it, or would you like to read it again?—I am not. (Witness reads the document.) Yes; he has measured those rock cuttings precisely as I have said. He has taken the tops on each side and strung his tape across.

23228. Then any height above that of the natural surface would not be measured?—Supposing there was a swell in the middle they would not get it in that way. It might be approximately correct.

23229. Do you say that you find, from reading Mr. Hill's report, that they did in fact measure it in this way, by taking the level from the remaining points?—Taking the surface at the top of the slope on each side and stringing the tape across.

Gathered from report of Bell and Hill that they made no allowance for unevenness of ground.

23230. Making no allowance for the unevenness of the ground between?—No; they assumed that to be the surface.

23231. Without desiring to enquire into actual transactions which have happened since the issuing of our Commission, and which we are not authorized to investigate, we would like to get your views, as a professional witness, upon any of the subjects which have been discussed

**Railway Con-
struction—
Contract No. 25.
Muskeg.**

As to muskeg
witness satisfied
that it was impos-
sible to re-meas-
ure it.

concerning the Pacific Railway. As to the inaccuracy of the first measurement upon section 25 of the muskeg material, have you any theory which would explain that report of Mr. Hill's, of April, 1880?—So far as muskeg is concerned, as I tell you, I am perfectly satisfied it was impossible at the time Mr. Bell made that re-measurement that the measurement they then made could represent the amount of work originally done; that is to say, that the original measurements might be perfectly correct.

23232. Owing to the absence of one of the Commissioners we were not able to take the evidence of Mr. Bell himself while he was in Ottawa, but I have an impression that he intimated, in a conversation to us, that he gave credit to the contractors for all their measurements over muskeg localities, and that the discrepancy which he discovered actually existed in other localities: could you offer any explanation, or say whether that was possible?—I could scarcely think that is the case. In some instances they may have done that as explained in their reports—in some instances, and only in some.

23233. Did you notice in Mr Hill's report that he stated that packing had taken place upon the side of the ditches apparently with a view to making an artificial height?—Yes; I observed that.

23234. Have you any explanation to give of that matter, or can you say whether it was one that was overlooked by the Government engineers?—No; but from the method they appear to have adopted in laying out their ditches, they took levels at the centre of the ditch and at each stake at the side; they had those levels and they measured on from those.

Almost impos-
sible that the
contractors by
means of pack-
ing could have
got over-paid.

23235. Do you say that it is possible that if this packing had been resorted to, the contractors, or sub-contractors, or whoever did it, may have been over-paid?—I can scarcely think it possible. An engineer constantly on the works would be likely to detect anything of that sort. It would be almost impossible.

23236. Is it a matter which you have investigated at any time?—No; not that particular question. I think Mr. Hill only speaks of one instance.

23237. He says in many instances: I suppose since the issue of our Commission you have actually dealt with this matter which is in dispute and which Mr. Bell re-measured?—Yes.

Points out why
the reports of Bell
and Hill are not
likely to be
correct.

23238. Without asking you how you have dealt with it, we wish you to consider whether there is any reasonable theory to offer showing that this report of Mr. Bell, and the accompanying one of Mr. Hill, is not likely to be correct?—Well, in the first place, that professes to show the quantity of loose rock—professes to show that they measured the quantity of loose rock excavated. Now, I am perfectly satisfied that it was utterly impossible for them to do that—quite impossible. In the second place, with regard to the rock excavation, although the way they explained having measured it there, they might have it approximately correct—it might possibly come the right thing—they could not be sure it was correct by any means. They are not in the same position to make accurate measurement as the engineers in charge of the work, and as I say with regard to muskeg, although they may have measured it exactly as they found it, I am satisfied as they found it was not as the ground originally showed when the work was done.

**Railway Construction—
Contract No. 42.**

23239. Returning to the subject of the changes which you have made upon section 42, for instance, could you say that in making these changes you have increased the grades?—No; we have confined the grades to twenty-six going east, and fifty-two going west.

The changes have not increased the grades, or the curvature.

23240. And as to curvatures?—We have also confined these to the curvature originally designed—I think, as far as I can remember now, four degrees is the minimum curvature.

23241. So that, in those respects, the road has not been degraded to any extent?—Not by any means; it has been improved.

23242. Did you consider the subject of lowering the grade line of the embankment crossing Cross Lake, whether by dropping it any saving could have been effected?—There is no doubt the lighter the embankment upon that soft bottom the less material it would have taken, so far as the settlement is concerned. Had they been able to cross, as at one time they appeared to have had in contemplation, ten feet above the water, no doubt the cost would have been comparatively small, but that involved, according to the profiles that were shown me—it involved the adoption of a forty feet grade going east instead of a twenty-six.

Crossing at
Cross Lake.

23243. Did you, after you became connected with the road, see that any opportunity for dropping the grade of the line had been omitted where it could have been done properly, and consistent with the preservation of the gradients as you describe?—No; I do not think so. Mr. Rowan spoke of this very subject very much as we have it here, and he evidently considered it. His statement was that the saving would be none; there would have been so much rock cutting the depth of the rock cuttings would have increased the cost so much; but, as he explained, they never contemplated the settlement in the embankments that took place. They thought they had found hard bottom evidently, but it was not reached.

No opportunity of dropping the grade, where it could have been properly done, had been omitted.

23244. Of course they discovered before they reached the top of the present embankment there was a great settlement?—Yes.

23245. So that the lowering of the grade might have taken place at any time so long as they were four feet lower than the present top?—Yes, true; but you would have added to the cost in this way: you can scarcely go to a contractor and ask him to take out bottoms at his contract price. You might, according to the strict legal interpretation of the contract, do so, but it would have cost him double what it would have originally.

23246. The calculation made by the Department shows that this lowering or dropping of the grade of the line would have had the effect of increasing the cost even at contract prices?—That is what I was telling you. Mr. Rowan said, owing to the additional rock, there would have been no advantage in it.

23247. However, that calculation was made without reference to the increased sinking upon the water stretches, and if that increased sinking caused an increased cost to the extent of some \$70,000, then the expense would be equal?—Yes.

23248. But I suppose you have not critically examined this subject?—No; I have not.

Railway Construction.

23249. Has there been any contract for construction let since you have been Chief Engineer?—Yes; that is to say, works of construction. There has been one section I think.

23250. Is that since June 16th, 1880?—Yes; I think it was the end of June.

Tendering—Practice as to estimating works.

The practice to estimate the probable cost of works.

23251. Before the 16th of June, 1880, was there any practice, as far as you know, in your Department or in any other place where you had experience, of estimating, on the part of the Government or the proprietors, the probable cost of works before tenders were received for them?—Yes.

23252. Is it a usual practice?—Yes.

23253. How is that followed as a rule: by arriving at a bulk sum, or by the value of the separate items in the works?—The bulk sum is made up of quantities upon each of which a value is placed.

23254. An estimate of the value by some one on behalf of the proprietors?—By the officers of the Government in the case of the Government.

23255. Have you ever seen, or do you know whether there are any records at all in your Department now of such estimates concerning the Pacific Railway: I mean made before tendering, so as to furnish the Government an independent opinion irrespective of that offered by the tenders?—You are speaking of the Pacific Railway?

Does not remember a record of such an estimate regarding Pacific Railway.

23256. I am asking whether you are aware of any such record in your Department?—I do not remember at the present time so far as the Pacific Railway is concerned.

In other cases such an estimate has been made.

23257. Have you in your previous experience anywhere?—Oh, yes. In many cases we have made a maximum and minimum cost—maximum supposing the wages of men to rise, and taking minimum wages for the other.

Object of making such an estimate.

23258. What is the object of any proprietor, Government or other, having such an estimate as that made?—The object is to guide them in some measure as to the probable cost of the work.

23259. Of what use is that?—Well, with a view, I presume, of ascertaining—to inform themselves as to whether the work is likely to be carried out by the persons tendering. For instance, the lowest tender, if it was very much below the engineer's estimate, one would suppose it would not be carried out.

23260. Is that considered in your profession to be a proper course to adopt before letting works?—I think so.

Experience of witness as an engineer.

23261. What experience have you had as a professional man?—The first work I was ever on officially was the road between Toronto and Hamilton in 1852, and from that date I have been connected with public works, sometimes under Government and other times companies and corporations up to this date.

23262. In Canada?—In Canada. I came out to this country in 1852.

23263. Have you any rank in any of the institutions in England or elsewhere?—No.

Practice as to estimating works.

23264. Then your experience has been derived from work in Canada as I understand?—Entirely.

23265. Have you ever had occasion to enquire whether such estimate as I have been speaking of has been recorded in your Department connected with any works on the Pacific Railway?—No; I had not.

23266. In your Department is there any book kept showing the cost of the different portions of the works, either separate contracts or separate items in each contract?—Let me understand you: you mean, for instance, the earth work.

23267. Yes?—And let me understand what you mean by cost: the cost to the Government?

23268. The money that is paid out—the expenditure?—It is upon the certificates of the Chief Engineer that the money is paid, and we keep a record of all the monthly returns, the monthly estimates.

23269. What I meant to ask was whether, in keeping an account of this expenditure, there are separate accounts kept; in the first place, let us say for each contract, so as to show what each contract cost from time to time: is that done?—Yes. Accounts kept of what each contract costs from time to time.

23270. Then is there a separate account also kept within that general account, showing how much the rock costs, let us say, as distinguished from the earth?—Yes.

23271. Then there are means in the Department, of showing from time to time what has been expended on each main item of each contract?—There is.

23272. So that if the expenditure should at any time go beyond what was originally estimated under the tender and the contract, it would be apparent immediately by comparison?—No doubt. So that it can be seen if a work goes beyond the original estimate.

23273. Could you say how long that has been in vogue?—Well, I could not say. It has always been in all Government works I have been connected with; it has always been the practice.

23274. But in the Department over which you are now Chief, do you know whether that has long been the practice, or whether it is a new one?—It has been the practice throughout, from the beginning.

23275. Have you investigated this matter and arrived at a conclusion from what you found, or is it only report in the Department that it exists?—I see the reports moneyed out.

23276. But only since you have been Chief?—No; I have seen Mr. Fleming's signature to them.

23277. Have you seen the books of account showing the particulars I have been describing?—There are monthly sheets which show so much earth excavation at so much, amounting to so much; so much rock, and so on. It gives it throughout carrying the previous month's work. Monthly sheets show so much earth and rock excavation, and the like, at such and such a rate.

23278. Each certificate includes the previous one?—The previous ones.

23279. And if each certificate includes the previous one, it includes them all I suppose to that date?—Exactly.

23280. After you became connected with the Pacific Railway did you notice, at any time before June, 1880, that the expenditure upon any particular items, or upon any particular contract, was much larger Attention of witness called to excessive expenditure on contract 15.

Practice as to estimating works.

than had been originally estimated?—Well, contract 15; I only know what the present expenditure is, and what I have been informed was the original estimate of the cost.

Also on contract 25; but contracts 41, 42 and 48 are all within the estimates.

23281. That has become a celebrated instance of excessive expenditure, but is there any other instance which you can mention as being worth investigating now?—I do not know; 25 of course, but any others that have been carried on in the last year, I do not know of any. 41, 42, 48, all those are within the estimates.

Contract No. 15.

The road not degraded by leaving rock bottoms in.

23282. It has been given in evidence before us that some of the work upon section 15 has been done at much less expense than was originally anticipated when the contractor was doing it, and that the effect of this is really to degrade the character of the work. In some instances the rock bottoms have been left in the cuttings and different circumstances of that kind have occurred. I think it was Mr. Carre who gave the evidence: has that matter occupied your attention?—It has. There are instances, as Mr. Carre no doubt stated, that some rock bottoms were left in while we had charge of the road. The track was laid over those, I suppose, a year or a year and a half ago, and rather than lift the track and take a foot of rock out of the bottoms, I am having a parallel grade made through it raising it that foot, and using so much more earth rather than take out this rock.

23283. It does not affect the gradient, however?—No.

23284. Then the road is not made inferior by that?—Oh, no; not at all.

23285. Is the cost of putting in that earth borne by the Government or by the contractor upon whose account this work is being done?—By the Government, of course. It is being paid for by the Government, the same as the rock would be paid for.

A mere question of comparative expense.

23286. Then it is a mere question which is the least expensive way to have the road finished?—No doubt.

23287. Either by taking out the rock bottom or putting in the earth? Yes; I may explain this if you will allow me.

23288. Please do so?—It is a great object with the Government to have the road opened from Fort William at the earliest possible date. The traffic is now being conducted over section 15 to facilitate work on contract 42. Now, if we lifted the track on this rock cutting to take out this foot of rock, we could not transport the supplies, &c., through to this other contract. It cuts two ways.

The policy resolved on to facilitate work on contract No. 42.

23289. Then the present state of affairs is continued with a view of facilitating the work on section 42?—Yes; with a view of facilitating all that work.

23290. If this is never changed, if it is allowed to remain permanently, does the Government pay more than it would have to pay if the work had been done as originally intended: in other words, must the Government hereafter bear some expense in order to get the full value of the work they contracted for?—If the contractor was carrying on this work under his contract, and the Government had not assumed it, you know, then, I think, probably at the contract price, taking out the rock bottoms might be somewhat less than the other; but the actual cost of taking out those rock bottoms, I think, would fully equal it, and as the Government are carrying on the work now they are carrying

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Contract No. 15.**

it on at the expense of the contractor, but if the work costs as much or more than the contract price, the Government have no means of recovering the amount, because the contractor, I fancy, is worth nothing.

23291. Then, is the result of all this that the Government will not get the road they contracted for with Mr. Whitehead at the price, or at as low a price as they contracted for; do you mean that money will be lost because of his present circumstances?—It is a matter of calculation which will cost most; I cannot tell at the present time.

Which course involves more cost a matter of calculation.

23292. Is it not a matter which you have considered?—I have had in view the great object in making some of those changes on 15, of getting that road through.

23293. I suppose at the time this was taken out of Mr. Whitehead's hands, in the spring of 1880, it was understood that all such matters as this should be rectified before a final settlement between them?—It would have to be.

23294. It was not intended the road should be made of a less valuable character than was contracted for?—I may say, so far as contracted for, in all those contracts it is all upon a schedule rate, and you can order what kind of work you like and only pay for that.

Works on a schedule rate, and Government can order what kind of work it likes and pay for it.

23295. I mean, if it is less valuable because of the saving the Government will get the benefit of the saving?—Yes. They would only get paid for a class of work they performed, undoubtedly.

23296. I suppose the taking out of the bottoms of a rock cutting a few inches deep would be more expensive per yard than the original cutting at the top?—No doubt of that.

23297. Is it in your power to rectify that matter by charging the actual cost if it should be done?—Oh, yes.

23298. Did you go to British Columbia before June 1880?—No; I did not. I went in July.

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23299. From what you saw then, what was your opinion as to the character of the work which had been performed up to June, 1880?—Well, the greater portion of the work then executed was composed of earth work and rock work tunnelling. I thought they had done their work there well.

Thought work done well.

23300. Did you give any consideration to the subject of the locations there?—I merely ran up the line of the present location where they were working on that 125 miles under construction, and down to Port Moody, the other ninety miles. I went on no other part of the line that had been surveyed. I went nowhere beyond the Fraser River.

23301. Were there any features either in the way the work was being done or the location of it that called for particular attention?—No; further than this. As you can quite understand, a very rocky mountainous country such as that is, although the original survey may have been made very carefully—I mean details of the survey may have been made very carefully—that is one particularly where you can make improvements by daily study on.

A rocky country, one where improvements in location can be made by daily study.

23302. But as far as the work had gone on the location as you saw it, was there anything that struck you as being improper or improperly managed in any way?—Nothing whatever. There was nothing beyond that one line that I saw.