

SESSION II.

1912.

NEW ZEALAND.

OTIRA TUNNEL CONTRACT PETITION COMMITTEE.

(REPORT OF) ON THE PETITION (No. 100, SESSION II, 1912) OF MURDOCH McLEAN AND ANOTHER; TOGETHER WITH COPY OF PETITION, MINUTES OF EVIDENCE, AND APPENDIX.

(MR. LEE, CHAIRMAN.)

Report brought up on the 18th October, 1912, and ordered to be printed.

ORDER OF REFERENCE.

Extract from the Journals of the House of Representatives.

TUESDAY, THE 20TH DAY OF AUGUST, 1912.

Ordered, "That Standing Order No. 219 be suspended, and that a special Committee, consisting of eleven members, be appointed to inquire into the petition of Messrs. Murdoch McLean and Neil McLean for favourable consideration and relief in connection with the Otira Tunnel contract; such Committee to have power to call for persons and papers; three to be a quorum: the Committee to consist of Mr. Davey, Hon. Mr. Fraser, Mr. Lee, Hon. Mr. R. McKenzie, Mr. Nosworthy, Mr. Okey, Mr. Reed, Mr. Seddon, Mr. Veitch, Right Hon. Sir J. G. Ward, and the Mover."—(Hon. Mr. MASSEY.)

PETITION.

To the Honourable the Speaker and members of the General Assembly of New Zealand in Parliament assembled.

THE humble petition of Murdoch McLean and Neil McLean, both of Otira, in New Zealand, carrying on business under the style or firm of "John McLean and Sons," contractors, and John McLean and Sons (Limited), (a company duly incorporated in New Zealand under the provisions of the Companies Act, 1908, having its registered office in the City of Wellington), sheweth:—

1. That on the 9th day of August, 1907, your petitioners, Murdoch McLean and Neil McLean, entered into a contract with His Majesty the King for the construction of the Otira Tunnel in accordance with the plans, specifications, and conditions of contract prepared by the Public Works Department, at or for the price or sum of £599,794.

2. That your petitioners, Murdoch McLean and Neil McLean, had for many years prior to their entering into such contracts carried on business in New Zealand as contractors, and had acquired considerable experience in the carrying-on of works similar to those required in the construction of such contract, and were recognized in the Dominion and elsewhere as contractors of the highest reputation.

3. That your petitioners, Murdoch McLean and Neil McLean, after their entering into such contract, in due course proceeded with the carrying-on of the works required in connection therewith.

4. That your petitioners, Murdoch McLean and Neil McLean, had prior to their entering into such contract entered into a contract with the Wellington Harbour Board for the construction of the Wellington Graving-dock.

5. That your petitioners, Murdoch McLean and Neil McLean, in the initiation of the works of the said contracts, in the acquisition of the machinery and plant necessary to carry on the same, and in general preparatory works and otherwise, employed the whole of the available capital possessed by them.

6. That your petitioners, Murdoch McLean and Neil McLean, finding that such available capital so possessed by them would be quite inadequate to carry on the works of such contracts, in order to assure what in their opinion would be a sufficiency of capital to effectively carry on such works, promoted the formation and incorporation of your petitioner company (John McLean and Sons (Limited)), by means whereof a sum of £45,000 additional capital was raised by the issue of 45,000 preferential shares of £1 each in your petitioner company, your petitioners, Murdoch

McLean and Neil McLean, receiving for the capital invested by them in such contracts 85,000 deferred shares of £1 each.

7. That the said contracts were duly assigned to your petitioner company.

8. That the whole of the capital of your petitioner company has now been exhausted in the carrying-on of the works of such contracts, and the shareholders thereof refuse to find any further capital for such purpose.

9. That in the carrying-on of the works of the contract your petitioners have from the initiation of the same up to the present time been faced with difficulties in connection with the labour necessary for the efficient manning and working of the works included in such contract.

10. That your petitioners, despite the fact that they have paid considerably higher wages on the contract than those fixed by mining awards in the Dominion, have been unable to obtain a sufficiency of labour to properly man the works of the contract.

11. That your petitioners have found that they have been unable to obtain from the labour employed by them those results which their long experience as contractors satisfies them should have been achieved.

12. That your petitioners are now convinced that there is not available in the Dominion to a private contractor a sufficiency of the labour requisite for the efficient and profitable carrying-on of the works contemplated by the contract, and that there is no possibility under the present labour-conditions of any private contractor obtaining the necessary labour in the Dominion or elsewhere at the present time or in the immediate future.

13. That your petitioners have brought the whole of their wide experience into practice in the carrying-on of the works, and have used every means in their power to successfully and profitably complete the same, but have so far failed in so doing.

14. That your petitioners gratefully acknowledge the financial and other assistance given by the Government to them when desired by them in order to assist them in carrying on of the works, but your petitioners are afraid that such assistance will not have the effect so confidently anticipated by them when obtaining such assistance.

15. That your petitioners have expended to date in connection with the works of the contract a sum of £59,581 9s. 2d. in excess of all moneys received from the Government on every account whatsoever.

16. That your petitioners feel that under all the circumstances connected with such contract your honourable House should take into its favourable consideration the position of your petitioners in connection therewith, with a view of relieving your petitioners from the said contract and authorizing the Government to take over from them the works thereof, and the machinery and plant used and employed therein, on fair and equitable terms.

Wherefore your petitioners humbly pray,—

1. That your honourable House will take into its favourable consideration the position of your petitioners in connection with the works of the said contract for the construction of the Otira Tunnel :
2. That your honourable House will taken into its favourable consideration the advisableness or otherwise of the Government taking over the works of the contract as a public undertaking, and of your petitioners being released from carrying on the works of the contract upon fair, just, and equitable terms :
3. For such further or other relief as to your honourable House may under all the circumstances seem meet and just.

And your petitioners will ever pray.

[SEAL.]

MURDOCH McLEAN.

NEIL McLEAN.

(JOHN McLEAN AND SONS.)

The common seal of John McLean and Sons (Limited) was hereunto duly affixed in pursuance of a resolution of the board of directors, this 9th day of August, 1912.

MURDOCH McLEAN, } Directors.
NEIL McLEAN, }

C. B. MORRISON,
Solicitor for the Company.

REPORT.

PETITION OF MURDOCH McLEAN AND ANOTHER (No. 100, Session II, 1912), praying that the Government should take over the works of the Otira Tunnel contract as a public undertaking, and that the petitioners be released from carrying on the works of the contract upon fair, just, and equitable terms.

THE Committee to whom was referred the above-named petition have the honour to report as follows :—

(1.) On the 1st day of August, 1907, the tender of Messrs. Murdoch and Neil McLean, carrying on business under the style of "John McLean and Sons," was accepted by the Government for the Arthur's Pass Tunnel contract, and on the 9th August, 1907, a contract was signed

by the contractors and their sureties, Messrs. Oliver Nicholls and John McLean, both of Auckland. The contract sum was £599,794, and the time stipulated for the work was five years, which expired on the 9th August, 1912.

(2.) The contractors lodged a deposit of £5,000, which is still held by the Government, and with the sureties entered into a bond of £25,000 for the due fulfilment of their contract. It was stipulated in their contract that the contractors would be liable to a deduction, or set-off, at the rate of £280 per week for each week after the 9th August, 1912, until the completion of the contract.

(3.) The contractors purchased the requisite plant, and have since carried on the work continuously in terms of their contract. The length of the tunnel as designed is 5 miles 24 chains, and the contract includes some formation and bridge work at each end, making the whole length of the railway included in the contract 8 miles.

(4.) In 1909 the contractors promoted a company (John McLean and Sons, Limited), to assist them in carrying out this and other works which they had in hand, and assigned the contract to the company, with the consent of the Government, by deed dated the 10th December, 1909. Since 1909 the works under the contract have been carried out by this company.

(5.) In November, 1909, the contractors applied to the Government for an advance of £20,000 to enable them to carry on the works, stating in support of the application that their own available capital was locked up in the work. After consideration it was decided to advance £20,000 in the shape of an additional progress-payment. The original contract stipulated that progress-payments were to be at the rate of 90 per cent. of the value of the work done, and 50 per cent. of the value of plant and machinery brought on to the works.

(6.) On the 3rd February, 1912, the contractors applied to the Government for further financial assistance, urging that the contract had, owing to unforeseen difficulties, proved unprofitable, and that they were unable out of their own resources to procure some additional necessary plant. At that time the contractors had done work and provided plant and material to the value of £249,882, and had received payments amounting to £216,173, leaving a margin in favour of the Government of £33,709, besides the contractors' deposit of £5,000 and the bond of £25,000.

(7.) On 13th May Cabinet decided to advance £10,000—£5,000 for payment of liabilities, and £5,000 for the purpose of additional plant: the latter £5,000 to be advanced at the rate of 100 per cent. of the value of the new plant brought on to the works. It was also agreed that the reduction in the rate of progress-payments, which should have come into operation on payment of the final instalment of the first advance, should be postponed until either the full amount of the new advance was paid or until the 1st March, 1913, whichever event occurred first. The total sum specially advanced to the contractors in excess of the 50 per cent. as provided in their contract is £25,000.

(8.) Approximately, one-third of the work of the contractors as provided by the contract has been completed, at a loss to the contractors of the sum of £53,418 13s. 4d., made up as follows:—

	£	s.	d.
Cost of work	213,362	17	9
Value 100 per cent. of work as per contract	206,896	0	0
	6,466	17	9
Less various recoveries	1,772	5	5
	4,694	12	4
Add 10 per cent. of finished work to credit of Government to June, 1912	20,689	0	0
Add certificate for amount payable for work done during June, 1912	4,113	0	0
	24,802	0	0
Deposit in hands of Government	5,000	0	0
	34,496	12	4
Book value of plant and material	78,333	1	7
Advances by Government to contractors—			
50 per cent. on plant	£34,411		
Cash balance	25,000		
	59,411	0	0
	18,922	1	7
Loss to contractors at end of June, 1912, assuming that Government terminated contract and seized plant, &c....	£53,418	13	11

There is due to the contractors on account of 10 per cent. retained by the Government as against finished work, and for finished work at end of June, 1912	£	s.	d.
Plus deposit	24,802	0	0
	5,000	0	0
In all	29,802	0	0
Less advances over 50 per cent. on plant and materials	25,000	0	0
Balance	£4,802	0	0

This would represent the amount due to the contractors if the contract were cancelled and the plant and material taken over at half the actual cost as at the end of June, 1912.

(9.) That the contractors have, under great and varying difficulties, endeavoured to carry out the terms of the contract, and have sustained heavy losses both in connection with the Otira Tunnel and Wellington Dock contracts.

(10.) That, in view of the whole of the circumstances and of the difficulties experienced by the contractors, the Government be recommended to release the contractors and their sureties from their contract if the contractors so desire, and to return to the contractors the sum of £5,000, the deposit paid.

(11.) That the Otira Tunnel is a national work, and should be completed. That the Government be further recommended to invite tenders for the completion of the contract, and that, pending a decision on such tenders, the Government should carry on the works.

(12.) That, in the event of no satisfactory tender being received, the Government be recommended to take such steps and make such arrangements for the completion of the works as a national undertaking as they may think advisable.

The minutes of evidence are attached hereto.

18th October, 1912.

E. P. LEE, Chairman.

LIST OF WITNESSES.

	PAGES		PAGES
1. Murdoch McLean	5-13	8. T. Kennedy	47-52
2. Murdoch McLean	13-18	9. H. T. Armstrong	53-65
3. H. J. H. Blow	18-24	10. T. J. Malloy	65-73
4. C. R. Vickerman	24-34	11. R. W. Holmes	73-83
5. Murdoch McLean	34	12. Murdoch McLean	83
6. Mark Fagan	34-41	13. P. S. Waldie	84-85
7. W. H. Gavin	41-47	14. Murdoch McLean	85-91

APPENDICES.

EXHIBIT	PAGE
A. Reefton Award and Present Wages at Otira Tunnel	92
B. Arthur's Pass Tunnel Contract in Account with John McLean and Sons to 30th June, 1912	92
C. Arthur's Pass Tunnel Contract, Particulars of	93
D. John McLean and Sons: Ledger Balances to 31st July, 1912; Cost of Works and Progress of Works to 31st July, 1912	93
E. Rate of Wages, Engineering, and all other Salaries, from commencement of Contract to April, 1912	94
<i>(Exhibits A to E handed in by Mr. Murdoch McLean.)</i>	
F. Particulars as to Contract and Contents of Tunnels	95
G. Tunnels done by Co-operative Labour, North and South Island, New Zealand	96
H. Tunnels done by Contract, North and South Island, New Zealand	97
<i>(Exhibits F to H—Mr. C. R. Vickerman.)</i>	

	PAGE
I. Newspapers handed in by Mr. T. J. Malloy	98
J. Schedule of Otira Tunnel Contract prepared by the late Mr. Peter Hay, C.E., formerly Engineer-in-Chief, Public Works Department, New Zealand	98
K. Proposed Agreement between West Coast Workers' Union and John McLean and Sons (Forwarded by Mr. H. T. Armstrong, Secretary of Workers' Union.)	99
L. Report on Statement of Accounts, Messrs. McLean and Sons (Limited) (Prepared by Mr. P. S. Waldie, Inspecting Officer, Public Works Department.)	100
M. Particulars of Alpine and other Long Railway-tunnels (Handed in by Mr. Murdoch McLean during final statement.)	103
N. Midland Railway: Expenditure between Brunner and Springfield to 31st August, 1912	104
O. Otira Tunnel Contract: Cost of Inspection and Supervision, from 1st January, 1908, to 30th June, 1912 (Exhibits N and O prepared by Mr. G. J. Clapham, Accountant, Public Works Department.)	104

MINUTES OF EVIDENCE.

WEDNESDAY, 28TH AUGUST, 1912.

MURDOCH MCLEAN made a statement and was examined. (No. 1.)

1. *The Chairman.*] Does your company wish to be represented by counsel?—I represent the company.

2. Will you be good enough, then, to put your case before the Committee?—I have to thank you, Mr. Chairman and gentlemen, for giving me permission to have counsel, but as there are, I think, no legal questions involved, there will be no necessity. Mr. Nicholson is attending merely as an interested party, being one of the sureties. The other gentleman with me is Mr. Williams, secretary of the company. I think it is hardly necessary for me to go into the history of this contract, which has been an unfortunate one for us. At the time the contract was taken, for the sum of £599,000 odd, it was considered by us that we had made provision for all necessary contingencies in connection with the work. This, however, has not proved so, and I am here to-day in the unfortunate position of having to tell you that we are just about at the end of our financial resources, and cannot go on much longer. What has brought us to this is largely the state of the labour-market. Nothing that we have come across in connection with the work has been abnormally difficult or out-of-the-way with works of this kind, but from the very inception of the work we were met with labour difficulties. I cannot say altogether that there was a "set" made against us, but it looked very much like it. One of the first things that happened was that a union was formed, and the secretary and treasurer or president of the Inangahua Miners' Union came on to the works and wanted to have a conference with me in respect to increasing wages and giving the men better conditions. At the time that this contract was let there was an award in existence for the Inangahua Miners' Union—the nearest award that was in existence for that class of work. We were then giving something like 1s. a day all round more than the award—that is, when we started. I met this gentleman in conference with the men. He could not give any reasons why we should increase wages or make the conditions better, but he finished up with saying that he would call all the men out on the following day, and would set the telegraph to work and stop men coming altogether; and he completed his statement by saying that we had £100,000 more than the Government estimate, and they were going to have it. That union brought us before the Arbitration Court, and there was an award of a kind given, but subsequently it became dead as our branch became dead, and for quite a little while we got on very well. Then the Federation of Labour took a hand and approached us. We had been increasing wages, and we increased them further, but we would not give all that the Federation of Labour required. There were several things that we fell out about, but one was this: they wanted a clause making preference to unionists compulsory. We would not give in to this unless the union were prepared to supply us with men. Then the president of the union stated openly to my brother and myself that they would send word round to the various unions under their juris-

diction, as well as to Australia, that Otira was not a place they would favour for workmen to come to. I might say that our only difficulty had been to obtain sufficient men to man the work. We have been working nearly the whole time with about half the number of men we ought to have had working in the tunnel. They were not obtainable in the Dominion. At various times we were at a little loss on account of the winter frosts, and we had shortness of power to contend with; but our main trouble has been labour. We can only express thanks to the Government for coming to our assistance on two occasions. We at the time anticipated that these loans would have assisted us to get the number of men we required. As soon as we got assistance in this way we increased the rate of wages—in many instances fully 20 per cent. I have a table here giving the wages in the Reefton award and the wages paid to-day at the Otira Tunnel: Shift bosses, 11s. 11d. at Reefton, 13s. 6d. at Otira; machinemen, 10s. 8½d. at Reefton, 12s. 6d. and 12s. at Otira; chuckmen, 10s. 2½d. at Reefton, 11s. at Otira; shovellers, 9s. 2d. at Reefton, 11s. at Otira.

3. *Hon. Mr. Fraser.*] What was the date of the award?—It was given in 1907. It was in existence when the contract was entered into. I do not know whether any difference has been made since: I suppose it has. As I say, shovellers at Reefton were awarded 9s. 2d., and we are paying 11s. at Otira.

4. *Hon. Mr. R. McKenzie.*] Was that for work outside the tunnel?—No, in the tunnel; outside we were giving 10s. What I have given you is all work inside the tunnel. The other wages that we are paying do not apply to Reefton at all, but we are paying our motormen 12s., concretemen 11s., block-lifters 12s., block-layers 12s. 6d., and power-house men 12s.

5. *Hon. Mr. Fraser.*] Might I ask that Mr. McLean put that statement in?—I will put it in. [Document handed in.]

6. *Hon. Mr. Fraser.*] Is it a full statement of the wages paid to all classes of workmen?—Carpenters are not here, nor blacksmiths. Those that are given are the men who affect the mining.

7. *The Chairman.*] Would you put in a complete return showing the wages paid to all employees?—Very well. It was anticipated that by raising the wages we should get a greater number of men and greater efficiency, but it has not proved so.

8. *Mr. Davey.*] Might I ask when these extra wages were given? I understood you to say that when the Government assistance was given you increased the wages: when were they increased?—I stated that at the start we gave 1s. a day all round more than the award. We have increased the wages from time to time, until the wages I have read out have been reached.

9. *The Chairman.*] That is, after you got the advances from the Government?—And prior to that as well.

10. *Hon. Mr. Fraser.*] It is a pity you have not put in the dates when increases of wages were granted. If you put a return in showing what wages were paid at a particular time and what increases you gave, and the date of them, it will greatly assist the Committee?—I will endeavour to get that for you. In connection with the labour, of course, overhead charges are always the same, and unless you have sufficient labour to fully man the works it is impossible to carry them on economically. I have here a short epitome of the state of affairs at the present time, as far as we are financially concerned. The amount at present invested in plant is £73,434 8s. 6d. I value that plant, at the expiration of the contract, at about £5,000—that is to say, the plant will not realize more than £5,000.

11. *Hon. Mr. R. McKenzie.*] Does that include the two water-powers?—Yes, it includes all. I may be on the conservative side in making this estimate, but the machinery has to be removed from there, and second-hand machinery is somewhat difficult to place. It is worth a great deal more, of course, but that is what I estimate it will realize. The only things saleable will be the generators, the motors, the locomotives, and the rails; and, of course, there will be something for the other plant.

12. Was there no prospect of the Government taking over your water-powers when you have finished?—I have never heard of any.

13. You do not know whether they have considered it?—I do not think it was considered. It was not as far as I know, at any rate. Well, deducting the £5,000, that would mean that at the end of the contract £68,434 8s. 6d. would be lost. At present we have completed one-third of the work, and we should therefore charge one-third of that amount to the present work completed. That would be £22,811. According to our balance-sheet, the actual loss on the working of the contract has been £4,878 10s. 6d. That gives us, then, a total of £27,690 as loss on the contract to the 31st May. Assuming that the balance of the work could be completed at the same cost as that already done—and in my opinion it could not—the loss on completion of the contract would then be £83,000, at our present rate of working. The rate of wages, however, has been increased considerably within the last few months, and that increased rate of wages has not been taken into account in this estimate; so it is fair to assume, the wages being higher, that the work will cost more as we go on. Further, as we go further into the hill the men's time working at the face will get less and less. At present they are clamouring for the face-to-face clause that is already in operation in mines. At present the men start in at twenty minutes to the hour; they have twenty minutes to get in; and they are clamouring for the face-to-face clause, which so far we have not conceded. The difference between cost and the contract price, therefore, will be more than is shown by the above figures. The plant also must be augmented by the addition of a supplementary power plant and an electric locomotive. The extra loss on the sale of these will be something to add. Roughly, I consider that the loss on the contract, taking things as they are, would at the end be about £100,000. I do not know that I have any further statement to make. I have put the exact facts before the Committee as nearly as I can. If I had had counsel to assist me it might have been better, but I thought it was not necessary. If there is any further information I can give I shall be prepared to do so.

14. *The Chairman.*] Have you any balance-sheet there that you were thinking of putting in?—Yes, I have a balance-sheet showing the state of the books at the 30th June. [Document handed in.] Our books are here if the Committee desire to see them. I think I have explained that the company's funds are quite exhausted, and that we are now on the verge of having to close down. I do not know if it is competent for me to make suggestions to the Committee as to how we should like assistance in the matter.

15. If you have any suggestions to make I think you had better make them?—The way we should like to have it done would be for the Government to increase the price, so that we could complete the work. I know the actual legal position so far as we are concerned—that the Government can step in and take everything that is there and wipe us right off the slate. Other alternatives are to call for fresh tenders or to do the work by day-labour. I think the Government would probably do better by continuing with us than by calling for fresh tenders. We unfortunately would not be in a position to tender a second time, our funds being quite exhausted; and there would no doubt be certain securities required and sums required to be deposited. I feel sure that if the Committee could see their way to assist us in the way I suggest, it would be a good way for us and a good way, I think, for the country as well.

16. Say, £100,000?—Well, that is the loss. The amount would be a matter for consideration subsequently. I cannot bind myself to the amount I have named at the moment.

17. *Hon. Mr. Fraser.*] I understand you are going to put in a full statement of the wages paid and increases of wages and the dates thereof?—Yes.

18. You allege that the chief difficulty you have had to encounter in carrying out your contract has been the difficulty of getting labour, and the increased wages you have had to pay: did I understand you to say that?—The main reason has been the difficulty of getting labour.

19. You did not explain to the Committee, however, how loss accrued from that fact. Could you have saved money had you had the full amount of labour that you required for your tunnel?—Yes. The overhead charges—that is, for the outside workers—namely, the engine-drivers, blacksmiths, locomotive-men, power-house men, compressor-men, and all that class—are always the same. No matter if you have only twenty men in the tunnel, you cannot work it for less; the fewer men you have in the tunnel the more expensive the mining becomes. If we could have had the full number of men in the tunnel, even with the increased wages we should have been able to make ends meet.

20. I understand from the contract that there is a deposit of £5,000 lodged with the Government?—That is so.

21. What bond is there?—Two sureties of £25,000.

22. What does that mean? Are the Government in a position to get the £25,000?—If it desires to do so. One of the sureties, unfortunately, was my late father, and most of what he left is involved with us in the works. Mr. Nicholson is the other surety.

23. Am I to understand that you are asking the Dominion to free you of all liability in consequence of your failure to carry out the contract?—I am.

24. What do you call “just, fair, and equitable terms” mentioned in your petition?—I am entirely in the hands of the Committee in respect to that.

25. You throw yourself on the mercy of the Committee: that is the meaning of it, is it not?—Exactly.

26. *Mr. Nosworthy.*] I understood you to say that your estimate of £100,000 was only an approximate idea?—That is so, but it is based on the previous cost of the work.

27. Supposing you could not get more labour, that estimated amount might be doubled?—It might be, but I do not think that is possible. I am beginning to doubt myself about these things, but I really do not think it is possible for the work to cost greatly more than that.

28. *Mr. Davey.*] I understood you to say that at the first interview you had with the representatives of the men they gave no reasons for their request for an advance in wages?—They gave reasons, but the arguments used were groundless. They gave a great number of reasons. Mr. Malloy was the spokesman, and he gave a great number of reasons, but there were no tangible reasons, and he finished up with a statement of which I told you.

29. That you had got £100,000 more than the Government estimate, and they were going to have it?—Yes.

30. Your main trouble, you say—in fact, practically your only trouble—has been labour?—The want of labour—not being able to get labour.

31. And the wages you have had to pay?—I am not complaining about the wages. If we had the number of men to work, the wages are not out of the way.

32. Supposing you still went on with the contract and had to pay the same wages, do you still think it would cost £100,000 more than the contract price?—I am sure it would cost £100,000 more.

33. You stated, if I understood you correctly, that up to date, after completing the tunnel for about one-third of the distance, you have actually lost £4,878?—Yes.

34. Does that mean actual loss, or interest on the amount invested in the work?—Actual loss, without any interest charged. There is no interest charged for anything in arriving at that. If the interest was charged the loss would be much more.

35. *The Chairman.*] And nothing is allowed for the contractors?—No.

36. *Mr. Davey.*] In the petition you say that in the formation of the company 45,000 shares were issued of £1 each: has that £45,000 all been raised and spent?—Oh, yes.

37. I take it from your petition that you made every effort to get the company to advance you further sums to go on with the work?—Yes, and they have absolutely refused. The capital is all paid up.

38. *Mr. Seddon.*] In the petition there is mention of a contract of John McLean and Sons with the Wellington Harbour Board. Can you tell the Committee how much approximately you lost over that contract?—£40,000.

39. You mentioned in your statement that you had been delayed considerably in the construction of the tunnel: what has the delay been caused by? You had some fires there, did you not?—The fires did not delay us much. We are delayed at the present moment through frost and the drying-up of our water-supply.

40. You had a fire at the Otira end: did that cause you much loss?—Not much delay.

41. At the Bealey end, did not the tunnel fall in?—About 6 or 7 chains in there was a bit of a break, but that was not very serious. It cost a few hundred pounds.

42. With regard to the plant, you assume that you will not get much of a price for it on completion of the tunnel. It has not been suggested to you that the Government might take it over?—No.

43. Could you give us any idea what it would be worth to the Government if they did take it over?—I think it would be very useful to them if they intend to electrify that railway. When the water is going there is 1,200 horse-power available—600 horse-power at either end.

44. About labour troubles: you had a conference with the men—was that with the leaders of the union?—Yes.

45. Who were they?—Which conference are you alluding to?

46. You alluded to a conference: I presume it was the first one?—That was just immediately after we started. Mr. Malloy was one and a man named Fagan was another. Then I had further conferences.

47. *The Chairman.*] Could you give us these conferences in order of date?—The first one was with Mr. Malloy and a man named Kennedy. Then we had difficulty over lamps, and the men struck work because I insisted that they should be responsible for the destruction of these lamps, on account of which I had a conference with a man named Betts and the secretary of the Miners' Union there—a man named Fagan.

48. *Mr. Seddon.*] Were they private conferences?—This last one was a private conference, but at the previous one all the men were there. The next one was through another strike, and then I met Messrs. Semple, Webb, and Armstrong. This strike was called because we would not recognize the union connected with the Labour Federation while we were still bound by an award of the Arbitration Court to another union. That was also in the presence of the men. The next one was after the award had expired. They met me with a request to increase wages and improve conditions generally, and then it was Messrs. Webb and Armstrong—not in the presence of the men. I am not altogether finding fault with the men. It appears to me that labour is not available in sufficient quantity for a huge work like that at the present moment.

49. *The Chairman.*] What shortage is there?—We have been working about 50 per cent. short all the time in the tunnel.

50. *Mr. Seddon.*] How many men could you employ?—We are at present employing about 240. We could employ 300 quite easily. That would mean another sixty men in the tunnel. It would double the number working in the tunnel.

51. You referred to a threat made by one of these labour men about taking the £100,000: was that Malloy?—Yes.

52. He was going to make a statement throughout Australia as to the conditions at Otira—he threatened a kind of boycott?—Mr. Malloy's statement was made at the first meeting. It was Mr. Webb, at the last conference I had with him, who stated that he would communicate with the various unions under the Federation's jurisdiction and also with the unions in Australia, and say that the Otira Tunnel was not a good place to work in. I do not say that that has been done, but I know that after the increase of wages was granted we got no more men for quite a long time. We have been getting a few men round us lately, but that, I take it, has been more on account of the strike at Reefton and the strike at Waihi.

53. With regard to the housing of the men at Otira, you provide the houses, do you not?—Yes.

54. And there are bathhouses provided and dressing-rooms?—Yes, and drying-rooms.

55. With respect to the wages of the men, how much a week do they pay towards the hospital?—6d. a week.

56. You yourself contributed something to the maintenance of the hospital there, did you not?—We contribute £25 a year, I think it is.

57. That is the hospital erected there for the benefit of the men in case of accident?—Yes.

58. Your suggestion is that the Government should increase the price for which the work should be completed. You say that an additional £100,000 would just about complete it?—Would just about cover our loss.

59. That is, as you roughly assess it now?—Yes.

60. You state that if the Government called for fresh tenders you could not, in your present position, tender?—We could not unless some one were to come to our rescue, but I have no hope of it. As far as the shareholders are concerned, they absolutely refuse.

61. *The Chairman.*] How long would it take you to complete if you had this extra £100,000?—That is a difficult question. At the present rate it would take another four or five years; but if it were possible to get the number of men that are required, it would not take anything like that time.

62. *Right Hon. Sir J. G. Ward.*] Supposing the extra amount that you ask for was provided, have you any reason to believe it would make it any easier for you to get the necessary labour to complete the work?—I said that £100,000 would be the loss at the completion of the works. I would go on with the work, of course, but there would not be very much in it for us. It is not

certain the work could be done for that sum, as a matter of fact. But the only way in which it can be finished expeditiously, in my opinion, is for wages to be increased so that you can compel labour to come to you. Of course, that will mean depleting the supply at other places and perhaps disorganizing other interests; but it seems to me that that is absolutely the only way in which we could get sufficient labour to carry out the work.

63. Assuming anything was arranged in this matter, you regard it as essential that there should be a further increase of wages?—I think so. I am not sure about a further increase. The increase we have given now is a good, solid advance, and makes the pay more than the men are obtaining anywhere else in the Dominion, I think; and we are getting a fair number of men. But while there is a veto like that against you, it is difficult to say you can even do it unless you further increase the wages. If we do increase the wages and they still keep that bar against us, we are just as badly off as ever.

64. In that estimated loss of £100,000 on the completion of the contract, do you include the difference between the cost price of the plant—£73,000—and the amount you reckon you are likely to get for it—£5,000: that is, a loss of £68,000?—That is included in the £100,000.

65. When you tendered did you include in your tender an amount for loss on plant?—Oh, yes.

66. You made proper provision for it, so it is from other causes, which you have explained, that the present condition of things has been brought about?—Yes. We made provision for every possible contingency that we could think of in arriving at the amount of the tender which we put in.

67. What is the total amount you have received to date from the Government on the contract?—£231,381 from all sources—that is, at the 31st May.

68. *The Chairman.*] That includes the £5,000?—No, it was not paid then. This balance-sheet at the 30th June is a later one. Up to the 30th June the total amount received from the Government was £241,505.

69. *Right Hon. Sir J. G. Ward.*] Do you estimate that a third of the work has been completed?—About a third.

70. And the contract price was £599,974?—That is correct.

71. Two-thirds of the work has yet to be completed, and the difference between £241,505 and £599,974 is £358,469?—That £241,505 includes the £25,000 loan that we had from the Government.

72. That £358,469, plus the £100,000, means a great deal less for each of the remaining two-thirds than you received for the third already done?—Yes, but we have not got to buy plant in the future. The plant that we have now will, with a few additions, complete the work, we anticipate.

73. Are you quite certain the contract could be completed for the additional £100,000 that you mention?—I will show you the way in which we work it out. [Figures shown to Sir Joseph Ward.]

74. From the information in your possession, then, you are of opinion that it could?—Yes.

75. Are you satisfied that there is no obligation that could be enforced on those responsible for the company to carry out the work?—There is no obligation; it is just an ordinary company.

76. Are you satisfied that your guarantors could not pay up the whole amount if they were called upon to do it?—I am sure they could not.

77. *Mr. Davey.*] The Government have paid £241,505. In addition to that the company has put in £45,000?—£53,418.

78. *The Chairman.*] Can you tell us the actual amount expended to date on the works?—£213,000.

79. *Mr. Davey.*] Assuming that the Government have paid £241,505 and the company £45,000, and all that has been expended; that amounts up to date to £286,505?—Just a moment. The company was formed to carry out the two jobs—the Wellington Dock and the Otira Tunnel. We put in £45,000 and the other shareholders in the company £45,000. £53,418 of our money has been expended on the tunnel.

80. *Mr. Okey.*] When you tendered for the work did you put in a schedule of the cost?—Yes.

81. Have you got that schedule?—We have it here. It shows how we arrived at the total. [Document put in.]

82. You said something about an additional £100,000 in your estimate—an additional £100,000 referred to by the men. What is that £100,000?—That we know nothing about. That was only a statement made by an individual. I presume he has obtained some information from the Public Works Department in connection with the matter. I never heard about it before. The statement was that our tender was £100,000 above the Government estimate.

83. There was no tender received for a lower amount?—No.

84. Yours was the lowest tender that was received, I take it?—I understand so. The Public Works Department will be able to give you information on that matter.

85. You state that you are satisfied with the treatment the Government have accorded you—that is, you drew more than the contract allowed?—The Government came to our rescue by making two loans—one of £20,000 and another of £10,000. And not only that, they were more prompt in payment under this contract than I have ever known them to be before. Knowing our needs, they were very prompt in payment every time.

86. What were you allowed to draw on the plant?—50 per cent.

87. And on the work?—90 per cent.

88. So that really the Government have paid you up in full for the work that has been done?—That is exactly what it amounts to: they have paid us in full for our work.

89. If the Government could come forward and take over the plant at valuation at the end of the contract, would that assist you?—It would, but in the meantime we are losing on the contract.

90. *Mr. Nosworthy.*] The plant would be no good to the Government once the work was done; it might be just as well worn out, because there will be no other work they will want it for?—Our generators and compressors and things of that kind are plant that would be saleable at a price every day.

91. *Mr. Okey.*] Under the conditions of contract, I take it, the plant belongs to the Government at the present moment?—It does; they have advanced on it. Everything there belongs to the Government by virtue of the contract.

92. What is the nature of the expert labour that you require?—Good general labour is what we want—good, healthy, strong labour. Miners are, of course, what we should like, but if we get good, strong labourers we can soon make tunnel-men of them.

93. You do not want expert labour?—It does not need anything specially expert. The main work is manipulating machine drills, and that kind of thing. If there are a few men of experience the others soon become expert in working a machine drill, and it is mainly machine drills we are working with. Nearly all the men working in the tunnel now are men who have gained their experience in the tunnel.

94. If the Government could see their way to take the plant over at, say, £50,000, a further £50,000 extra would carry the work through?—Yes.

95. If the Government said they would take over your plant and give you an extra £50,000, you think you could carry the work through?—From the information in my possession just now I should say Yes. It does not leave very much margin for further contingencies that might arise, but from the information at hand I should say Yes.

96. The loss of the company is not altogether occasioned by this contract—you lost £40,000 over the dock?—Yes. There was £90,000 of capital altogether put into the two concerns. We lost £40,000 over the dock, and about £50,000 on the Otira Tunnel.

97. What is the nature of the material that you are driving through now?—Just moderate rock—sometimes very hard, and sometimes medium. There is nothing excessively difficult about it. The worst feature is that there is a good deal of water, and consequently a good deal of wet time worked. That means that the men are working six hours instead of eight, and that increases the cost.

98. You do not anticipate that the work to be completed will be any worse than that which you have gone through?—No.

99. There are not any difficulties in the work?—I do not think so. Looking at our experience at both ends, I think it will be the same all through.

100. *Mr. Reed.*] There are two parties to this petition, are there not—John McLean and Sons and John McLean and Sons (Limited)?—Yes. The contract was assigned to the company by us.

101. So that John McLean and Sons is entirely merged in John McLean and Sons (Limited) in respect of this contract?—Yes; but not so far as the Government are concerned. Because we assigned the contract to the company, the Government did not release us as John McLean and Sons.

102. The contract was entered into with John McLean and Sons?—Yes, originally.

103. And the company was formed after that?—Yes.

104. The sureties, you say, were John McLean and Oliver Nicholson: were they sureties for John McLean and Sons?—Yes.

105. John McLean was your father: had Mr. Nicholson any interest in John McLean and Sons?—None whatever.

106. He only became a surety as a friend?—Yes.

107. How much capital was raised in the flotation of John McLean and Sons (Limited)?—£45,000.

108. That was the total capital of the company?—That is the total capital raised. The capital of the company was £130,000. There was £45,000 subscribed in preference shares.

109. How were the rest of the shares allotted?—We took up the ordinary shares.

110. You took 90,000 shares?—Representing the capital that we already had in the concern.

111. £45,000 was obtained from the shareholders in cash, and you retained 85,000 shares?—Yes, making £130,000.

112. Who were the holders of the 85,000 shares?—My brother and I.

113. The company was formed to work both contracts, and £40,000 was lost in the Wellington Dock. What position does the company stand in with regard to this petition: is it the company that is asking for relief, or is it John McLean and Sons?—It is both the company and John McLean and Sons. They have no further liability—the company's capital is gone.

114. But they could participate in any benefits, could they not?—Yes.

115. If we gave any concessions, who are going to get the advantage of the concessions—you and your brother, or John McLean and Sons (Limited)?—The company at present. We cannot separate ourselves from the company.

116. *The Chairman.*] The company would participate to the value of their £45,000?—Yes. The new arrangement could be made with John McLean and Sons.

117. *Mr. Reed.*] Are you thoroughly satisfied with the plant that you have there?—We have to increase the plant another £5,000, and it would then be one of the best we could have. There is nothing wrong with the plant.

118. Then the plant is capable of undertaking the work?—Yes, with some repairs.

119. And any one completing the work with the plant has two-thirds of the original value?—That is exactly what we estimate it at.

120. You brother works with the firm?—Yes, he is there now.

121. Would your brother and yourself be prepared to carry on the contract to completion on salaries? Supposing the Government elected to proceed with that work and wanted your experience, would you be prepared to carry on the work at a salary, providing that other arrangements were made to your satisfaction?—Well, I suppose we would have to. We would be prepared to carry on at a salary if it were one commensurate with our services, and with a possibility of getting our capital back at the end.

122. *Hon. Mr. R. McKenzie.*] The total contract is eight miles?—Yes.

123. What proportion of the work is outside the tunnel?—A very small proportion. There is only about £26,000 or £27,000 outside the tunnel.

124. What proportion of that outside work is finished?—There is about one-third of it completed, partly on each side.

125. Did you receive a copy of Mr. Blow's report, in which he states "The tunnel had been excavated for within a few chains of two miles at the Otira end and 27 chains at the Bealey end"?—You mean there is a discrepancy between our statements?

126. You stated that one-third of the work was finished: I understood you to refer to the tunnel, not to the outside work?—That includes the whole of the work.

127. You practically finished 2 miles 20 chains out of the 5 miles 24 chains?—No, we have not finished that.

128. How much of it?—We have driven that distance.

129. How far does the lining get to: Mr. Blow says it is within a chain or so of the face?—It is so at the Bealey end.

130. Assuming that 2 miles 24 chains have been finished, will you figure out how much of it is the balance at the same rate?—But there is not 2 miles 24 chains of the tunnel finished. We are giving you the actual figures so far as the quantity of work is taken out. There is about one-third of the work absolutely completed.

131. *Hon. Mr. Fraser.*] Could you not give us any exact figures as to how much you have finished of the tunnel at each end?—I cannot give you that now, but there is probably half a mile of lining to do at the Otira end. The distance from portal to face at the Otira end is 1 mile 77·17 links as at the 31st July. These are our measurements. That is the distance from portal to face; equivalent total length of tunnel excavated, 1 mile 52·88 links.

132. That is finished?—That is excavated. That is equivalent to the full size of the tunnel. Then the equivalent of the total lining of the tunnel is 1 mile 35·15 links.

133. *The Chairman.*] That is completed?—Yes. At the Bealey end there is 27 chains 91 links from the portal to the face, and the equivalent of the total length of the tunnel excavated at that end is 25 chains 23 links, and the equivalent total length of the tunnel lined 24 chains 66 links. The totals for the whole tunnel are 1 mile 78·61 chains, equivalent to length of tunnel completed. The total distance from portals to faces is 2 miles 18 chains 8 links: that is including both ends. The equivalent total length of the tunnel lined is 1 mile 78 chains 68 links.

134. *Hon. Mr. R. McKenzie.*] What is the material difference in working the tunnel as compared with an ordinary New Zealand tunnel, beyond the length and the cost of running out the spoil and running in material?—There is nothing special. It should not cost any more if you could manage the tunnel so as to use your plant economically.

135. Are there any objectionable features so far as the men are concerned?—Only the wet ground.

136. You have 240 men employed there?—Yes.

137. And you could employ 300?—Comfortably.

138. What would be the number altogether inside?—There would be about 200 men.

139. That implies that you would be driving the top and bottom headings in enlarging the tunnel?—Yes.

140. Have you done that?—We have never had the men to do it. Our headings are a long way ahead, and the heading is not going as fast as it should. We should have more men widening out.

141. Would this tunnel admit of that?—We have a single road.

142. With turnouts?—Yes.

143. Have you to stop after firing?—Yes.

144. Each shift?—Yes, and sometimes between shifts.

145. Do you work three shifts?—Yes.

146. I assume you have your headings manned?—Yes, especially the bottom heading. Sometimes we are short of men in the top heading.

147. Do you stop your heading when you are widening out?—No, not if we have the number of men. We can keep everything going together if we have not a shortage of men.

148. What percentage of the total work does the labour inside the tunnel represent?—We have never run it out. At last pay there were 210 men on the Otira end and there were eighty of these outside.

149. Are your incidental expenses always the same?—Always the same. There might be a little difference. For instance, the other day the men knocked off, on account of a comrade being killed, from end to end of the work.

150. Of course, you have a permanent staff?—Yes.

151. You say that the loss of the company's capital was £90,000?—Yes, total loss.

152. So that nearly represents the total capital of the company?—Only by the preferential shareholders. It represents £45,000 of my brother's and my money.

153. And that is all sunk in the tunnel?—Yes, and in the dock.
154. There is a deposit of £5,000?—Yes.
155. Was that put in by yourselves?—Yes.
156. It is your joint cheque?—Yes.
157. That money is returnable to you and not to the company?—No, it is returnable to the company. It is assigned. We are liable to the company for it.
158. You say there is a hydraulic brake horse-power of 1,200 horse-power?—Yes.
159. How much will the proposed horse-power provide?—About 250; but it is in the shape of a Deissel engine, auxiliary power, because sometimes we have dry weather. We have had dry weather for about six weeks. There is 1,200 horse-power available in favourable weather, but there is 250 auxiliary horse-power, which must be obtained to carry out the work economically.
160. *Hon. Mr. Fraser.*] It is still required?—It is required as an auxiliary for dry seasons.
161. *Hon. Mr. R. McKenzie.*] If this power could be used after the work is finished it would be worth something to the Government?—It would be worth its full value.
162. Would it be supplementary power?—Yes.
163. How much would it cost you?—I could not give you the figures.
164. Would it cost you £20,000?—With the pipe lines, over £20,000.
165. The Otira and Bealey are objectionable places to work in at all times, but especially during winter-time?—I would not say so. I never knew a more healthy place in the winter-time. It is cold, of course.
166. Do you know whether it is customary for the local bodies and the Government to pay extra wages to the workers in such localities?—The roadmen up there only get 9s. or 10s. a day.
167. Do you know whether the Government are paying higher wages at the Bealey end than at the Otira end?—I should say they are paying more at the Bealey end.
168. Say the Government are paying 10s. a day, are you paying more than that for your pick-and-shovel men?—I think the Government are paying more than that now.
169. You ask Parliament to release you from your contract on fair and equitable terms?—Yes.
170. What do you call "fair and equitable terms"?—I am leaving that entirely to yourselves. I am entirely in your hands.
171. *Mr. Davey.*] Is there any balance-sheet showing the amount of salaries paid outside the wages?—Yes.
172. Have you got it here?—I have not got it here, but we will give you that later on.
173. *The Chairman.*] Is it not likely that the tunnel-work will be more costly *pro rata* as you get further in?—Yes. It will be on account of the transport.
174. What percentage will it be as you get further in?—I would like to go into that very carefully before answering.
175. Are you likely to have more expense on account of water trouble as you get further in?—We will at the Bealey end, but not at the Otira end.
176. Which is the faulty end?—There is no faulty end.
177. Do you propose to meet half-way?—We propose to meet where we can. We go right on from the Otira end until we meet the Bealey end.
178. You have the mileage to go on?—Yes. We will go further into that and give you a statement.
179. What was the object of proceeding entirely from the Otira end?—The difficulty of the fall and water at the Bealey. In a single-line tunnel you actually do all the work together, as Mr. McKenzie stated. You have to drive your heading for 10 or 15 chains and do nothing else, and then you have to go back and do the widening out and lining.
180. *Hon. Mr. R. McKenzie.*] Is there any restriction as to how you should carry this work out so far as the engineers are concerned?—No, I do not think there is any supervision. There is no interference at all.
181. If you ran your bottom heading right through without widening out, although it might delay the work for a year or so, would it not reduce the actual cost of the work afterwards?—Yes, enormously.
182. You would get rid of the pumping and ventilation, and get all your material right through?—Yes, and you would get twice the number of men on, but it would take a great deal longer.
183. *Hon. Mr. Fraser.*] Would it be safe?—Yes.
184. It is solid rock?—Yes. Occasionally we get some slatey stuff, and then we have to timber it up.
185. *Hon. Mr. R. McKenzie.*] I suppose you have to do as much lining as possible to assist your finance?—Yes.
186. *The Chairman.*] Is not the Bealey end better than the Otira?—It is softer, but more costly to work. If you get material moderately hard that will stand without timbering, that is the best.
187. You have no trouble so far as timbering is concerned other than what you anticipated at the start?—No.
188. *Hon. Mr. Fraser.*] You were saying just now that there are exceptional difficulties in working the Bealey end—I do not mean on account of the water or fall, but because there was only a single line, and after heading a certain distance you have to go back and line: is it not the same at the Otira end?—No; that is on account of the water.
189. *Mr. Veitch.*] You will give us an estimate of the salaries and wages mentioned by Mr. McKenzie?—Yes.
190. *Mr. Nosworthy.*] Did I understand Mr. McKenzie to say that as a matter of finance it would be better to take the heading right through?—Yes.

191. Assuming that you had sufficient time and guaranteed finance, would you go to work in that direction?—There is the time involved. It is quicker this way.

192. *Mr. Veitch.*] You could not pass each other?—We could put in a siding.

193. *Mr. Davey.*] Of course, when you took up the contract you based your estimate on the wages then current?—That is so.

194. Can you give the Committee an average of the wages paid then and what you are paying now? You say your trouble is mainly one of labour?—Not the wages. My trouble has been that we have not been able to obtain labour.

195. *The Chairman.*] Will you give us a return of the wages paid at starting the contract and at the different periods when the wages were raised?—Yes.

THURSDAY, 29TH AUGUST, 1912.

MURDOCH McLEAN further examined. (No. 2.)

1. *The Chairman.*] You were going to supply the Committee with some returns, Mr. McLean?—With regard to an estimate of engineering and plant, as per schedule, and cost of same, showing engineering and plant separately, the £32,000 shown in the Schedule was only an estimate of probable loss on plant at the end of the contract, including the preliminary engineering expenses incurred in putting down our water plant and that kind of thing. That £32,000 was the provision for probable loss on plant. I have here a statement of the wages paid at commencement, and then from April, 1912. We find there has been no material increase in wages in the interval between the commencement of the work and April of this year. There may have been small increases made to individuals, but there was no general increase. This statement shows the wages paid to every class of workman on the work. [Document put in.] I also produce a statement of the wages paid, engineering and salaries, all other charges, and the total [handed in]. I have further, with your permission, to state that my estimate of £100,000 to complete the tunnel was based on the bare figures at our disposal at the time, providing for no special contingencies. On more careful consideration I find that another £30,000 or £40,000 will probably be required to cover any contingencies.

2. *Hon. Mr. Fraser.*] Do you mean £130,000 in excess of the contract sum for the tunnel?—That is what I mean.

3. *Mr. Okey.*] Is that taking the machinery at £5,000?—Yes.

4. *Hon. Mr. Fraser.*] You mean that it would take over £700,000 for the tunnel, then?—From £730,000 to £740,000.

5. *The Chairman.*] I understand you to say there was no appreciable rise in wages from the commencement of the contract until April last?—That is so.

6. Then in April last there was the increase shown by this return?—That is correct. Of course, the wages that we paid at the start were in advance of the wages current in the district at the time.

7. In making your estimate for tendering, did you anticipate the wages would be at the rate which you paid at the commencement of the contract?—We did; we fully anticipated it.

8. You tendered on that basis of wages?—That is correct.

9. May I put it in this way, then: practically the rate of wages has had nothing to do with the non-completion of the contract?—That is our opinion.

10. *Mr. Davey.*] Are we to understand, then, that shortage of labour is your main contention for non-success?—That is our only contention. I suppose you gentlemen know that when there is a shortage of labour there is always a shortage of efficiency. That is natural. If you cannot afford to discharge a man for inefficiency because you have not any other men, then efficiency is affected.

11. Do you think you would have been able to complete the work successfully had you been able to get a sufficiency of expert labour?—I feel quite positive we should.

12. At the contract price?—Yes.

13. Have you not had extraordinary trouble at the Bealey end? Has it not cost more there than your estimate?—Yes, a great deal more.

14. That had nothing to do with labour?—Well, not to the same extent.

15. You had not anticipated the extraordinary difficulties that you experienced?—No.

16. *Hon. Mr. R. McKenzie.*] You might explain why it cost more than you anticipated?—Because of the water.

17. But you anticipated the water?—We did not anticipate we should have so much difficulty in getting our machinery in. We anticipated we should be able to get the machinery in fairly comfortably. Another thing about the Bealey end is that just at present—it probably will not obtain all through the work—the ground is of a soft nature, and requires very careful timbering, and costs a great deal more to deal with than ground that does not require timbering, although it may be very hard.

18. Is not the rock there of the same nature as the rock you are penetrating at the Otira end?—No, at the Otira end it is a harder rock of the same nature. At the Bealey end timbering is required the whole way.

19. *Mr. Davey.*] The Chairman asked you yesterday if you did not think that as you progressed through the hill the expense would be much greater, and you said, Yes, mainly for trucking?—That is so.

20. Have you got out that estimate of what the extra cost would be if you did the main work from the Otira end?—In the estimate which I put in the work would be mainly from the Otira end.

21. *The Chairman.*] You think, then, that even if you do not get a fuller supply of labour and have to go on on the same conditions as you are going on now, the work can be completed for, approximately, an extra £130,000?—That is exactly the position.

22. Taking things as they stand to-day, and not anticipating any better conditions in any way whatever?—That is so.

23. *Hon. Mr. Fraser.*] If you had a full supply of the class of labour that you require, would it take £130,000?—I do not think so.

24. By how much would you reduce that amount?—I think it would reduce it by £40,000 or £50,000—probably £50,000.

25. *The Chairman.*] By how much do you think it would be reduced if you completed the tunnel in the way in which you were speaking yesterday—by boring right through to the Bealey?—That I have not properly gone into. I should have to go into it much more carefully before giving an estimate.

26. You might consider that question?—I should have to consult my engineer. I gave the answer that I did give yesterday somewhat hurriedly. There are a lot of questions involved. At the moment I was thinking of the old method of carrying out works—with hammer and drill—and that, I think, would be the cheapest way to drive the heading right through and then widen out. But we are working on quite a different method. Our compressors, our generators, and all the plant would have to be fully manned even to drive a heading. We should not want so many smiths or tool-sharpeners; we should not require quite so many carpenters and men outside, but all that is involved; and the more drills and machines that can be got to work at one time the cheaper the excavation. We have plant there now that will drive about eighteen machine drills.

27. *Hon. Mr. Fraser.*] Could you work eighteen at a face?—At the Otira end we have enough to drive twelve, going the whole time. If there are eighteen machines working in the tunnel the average would be twelve. We have two compressors with five-machine capacity, and one with two. That is twelve, fully working. If we had sufficient men to keep the whole of those machines in operation the excavation would be enormously cheapened. So the question of driving the heading by that method involves the expense of the generators and the compressors, and only the same expense is involved if you are doing six times as much work.

28. *Hon. Mr. R. McKenzie.*] Do you do your widening out and driving at the one time at the Bealey end?—Not at the Bealey end. There we have to drive, say, 10 or 12 chains, and then we have to go back and do the lining.

29. And leave the headings standing?—Yes.

30. While you are working the headings you have got to let the widening-out stand?—Yes.

31. So you gain no advantage as far as that goes?—Not at that end. I am speaking mainly of the Otira end, because that is where the great bulk of the work is done.

32. *Mr. Davey.*] Would it be possible in any way to reduce the administration charges—engineering and salaries?—It is possible. The charges there could be reduced considerably, I think. They are in excess of requirements—brought on through circumstances at the commencement of the work.

33. Your financial year ends with September, I take it?—Yes.

34. I see that up to the 31st July this year you paid £31,000 in wages and £3,600 in salaries?—That is right.

35. Yet for 1910—the full year—you paid £40,000 in wages, and it cost you only £300 less than the shorter period for salaries?—Yes. I would like to further explain this statement. Nineteen hundred and nine was the year in which I engaged an engineer. I found that it was getting too much for one individual. I went for a year without an engineer. I am now giving an engineer £600 a year.

36. *Hon. Mr. R. McKenzie.*] You say that you require about sixty more men?—Yes, another sixty men employed continuously in the tunnel would give us the full output of our machines.

37. By how much would that increase your incidental expenses—say, for overseers?—It would not increase it at all.

38. Would you not have to put more gangers on?—We would put no more foremen on, and no more blacksmiths. We might have to get one or two more fitters, but no more men would be needed on the sharpening.

39. What is your average expenditure per month in wages?—About £3,500 now.

40. And for salaries?—Between £300 and £400.

41. About 10 per cent. of the wages?—Yes.

42. *The Chairman.*] How long do you anticipate it will take you to complete the tunnel under the present conditions?—Under present conditions we could not drive any faster than we are driving now.

43. It will take another four or five years?—Yes.

44. And if you had your full complement of men in the tunnel?—I think it ought to be done in two years and a half—two and a half to three years at the very outside.

45. Double the tunnel-work, practically, would be done per day?—Yes. We have hardly had half the number of men in the tunnel. At the present moment we have got about a hundred men altogether in the tunnel. We have been working with about fifty or forty or sixty—all numbers. And the overhead expenses are the same.

46. *Hon. Mr. R. McKenzie.*] You propose to put in more pumping plant at the Bealey end?—We shall have to put in a larger pump than we have got there now.

47. With more power?—Yes.

48. Otherwise you could not go any faster?—No.

49. *The Chairman.*] Supposing you had the opportunity, as a business proposition, of going on as you are going now for five years, or with an extra staff for two years and a half, which you say would be at a less cost, would it pay you to give any increase on the present rate of wages in order to get the full complement of men so as to complete the work?—Yes.

50. You have not framed any estimate of how much increase you would have to give?—That would have to be gauged by the way the men came about. I think I stated yesterday that it is quite evident that there is a considerable shortage in the Dominion of the class of labour that we are using.

51. *Hon. Mr. R. McKenzie.*] But you told us yesterday that nearly all the men you have got you trained in the tunnel yourselves?—That is quite right; that is the point I make—that we have not got the class of men in the place.

52. *Mr. Nosworthy.*] To what cause do you attribute the shortage of labour?—There are several causes affecting labour here. In the first place, there is a large loan expenditure both by Government and by local bodies. There is also a considerable amount of mining done by private companies. And in addition the prosperity of Australia has been drawing away our men continuously for the last few years. Quite a number of our fellows have gone away.

53. Do you consider there are any other causes at work?—Those are the only reasons I can give to account for the shortage of labour.

54. Do harvesting and shearing make any difference?—That always affects us, but it is more or less temporary.

55. *Mr. Seddon.*] Since the strikes at Reefton and Waiuta have you been able to get more men?—There are more men about, but, unfortunately, just now we are not able to make use of them as we would like, because we have encountered a dry season again. This could be obviated, and we are proposing to obviate it, for which purpose we got a loan from the Government to purchase a Deissel oil-engine with a capacity of about 250 horse-power. This, with the power that is always available, would keep us going without any disorganization of the works at a little extra cost, rendered necessary for the running of the oil-engine, which would be covered by our continuously keeping going.

56. *Hon. Mr. R. McKenzie.*] At which end do you propose to use it?—At the Otira end.

57. *Mr. Okey.*] Have the men lost much time through having to wait?—At this time of the year a few of them lose time, but at the present moment the Public Works Department have given us some work to do in addition to the contract—some protective work along the railway bank in the river. Fortunately we have been able to draft our tunnel-men on to that, and so keep the thing a little bit organized.

58. *The Chairman.*] What is the greatest length of time you anticipate it will take the men to go from the face to their work as the work goes on?—The longest time possible would be about three-quarters of an hour. The motor that takes them in goes in at the rate of about eight miles an hour. We are always within about 25 to 30 chains of the face with the lining. They will never have to walk more than 20 or 30 chains.

59. *Hon. Mr. R. McKenzie.*] If you did all the work from the Otira end they would have to travel about four miles and a half?—Yes, and the longest time possible would be three-quarters of an hour.

60. *Right Hon. Sir J. G. Ward.*] Would you say, from your experience as a contractor, that if one of the other tenderers had received the contract similar troubles to those which have overtaken you would have been met with by him?—They must have done. There could not have been any special reason for the men to tackle us, because we have hitherto borne the very best reputation as far as our treatment of the men is concerned. At the sitting of the Arbitration Court in Greymouth each of the men who had just previously aired enormous grievances was asked what kind of employers we were, and each one said we were the best employers he had ever worked under. So there could have been no personal antagonism to us.

61. I did not mean it in that respect. Supposing that another tender than yours had been accepted, as the result of your experience are you of opinion that the present deadlock would have arisen?—I am almost certain of it.

62. From the causes you have explained?—Yes, I am sure of it.

63. In your opinion it was not possible to have foreseen the difficulties?—It was not possible to have foreseen the difficulties that have arisen.

64. Otherwise you would not have tendered?—No.

65. *The Chairman.*] When did you first realize that there was going to be this loss?—Not for some time. I could not believe but that labour would come in. I never realized till two years ago that there was serious trouble. I did not realize but that we should get labour. We had often experienced periods of shortness of labour, accounted for in one way and another, but we never experienced anything like this.

66. I suppose your troubles were somewhat explained when you asked for the advance of £20,000?—Yes, I put it as clearly as I could to the Minister.

67. *Hon. Mr. Fraser.*] By how much was your tender below the next tender?—I do not remember.

68. Were the amounts of the unsuccessful tenders published?—Yes, but I do not remember.

Hon. Mr. Fraser: Mr. Blow hands me these figures: At the first invitation the following tenders were received: White and Goodman, Christchurch, £599,068; Niven and Co., Napier (five years), £749,889; Niven and Co., Napier (four years), £751,989. At the second invitation the tenders received were: John McLean and Sons, £599,794; J. Drummey, Arrowtown, £628,732; Kirkwood, Kerr, and Co., London, £688,215. At the first invitation the time was four or five years, and at the second five years.

Right Hon. Sir J. G. Ward: I should like to ask Mr. Blow why the lowest tender at the first invitation was not accepted.

Mr. Blow (Under-Secretary for Public Works): On the ground, I think, that the amount was excessive. The estimate was £500,000.

The Chairman: The lowest tenderer on the first occasion did not tender again?

Mr. Blow: No.

Mr. Nosworthy: I should like a return supplied showing the amount at which Cochrane Bros. tendered to construct the tunnel.

Mr. Blow: They did not tender. They asked for an extension of the time for tendering, and the Government declined to give it.

Mr. Nosworthy: Could we find out what their estimate was?

Mr. Blow: I believe they gave an estimate of what, in their opinion, it would cost.

69. *The Chairman* (to witness).] Assuming that Niven and Co. had been given the contract at £751,989, do you think they could have done it in the four years?—I am sure they could not.

70. Not by paying increased wages?—No increased wages would have done it.

71. *Right Hon. Sir J. G. Ward.*] I presume it is governed by the speed at which you can tunnel?—The speed at which you can drive the heading.

72. *The Chairman.*] It was assumed that the work could be done in five years?—Yes.

73. You think that under no conditions could it have been done in five years?—I do not say "under no conditions." But it is very doubtful if it could ever have been done in five years. We tendered to do it in six years. The Department informed us that we would have to withdraw the six years because it was not in accordance with the conditions. We had done a good deal of work for the Government, and our experience was that where a contractor uses every means in his power to expedite the work and does not waste time over it, the Department as a rule do not enforce penalties. Knowing this we entered into the contract, notwithstanding that our opinion at the time was that it would take at least six years. That is on record: it is on our schedule in the first tender.

74. *Mr. Nosworthy.*] Were there separate tenders for driving and paving and bricking?—No, it was all one job.

75. *Hon. Mr. Fraser.*] I presume that in a big undertaking such as this you had made out certain calculations which would give you some idea as your work proceeded whether you were going on at a loss or a profit?—Yes. We know every fortnight.

76. How long have you been working?—Four years actually working. We were a year before we really started tunnelling.

77. Am I to understand that for two years the accounts showed that your hopes for a profit were being realized and that you were not working at a loss: is that so?—No. The first eighteen months there was a big loss. Then we began to recover a little, and I think the next year there was a small profit.

78. During one whole year?—Yes. There was a small profit, and it looked then as if things were going to improve.

79. What year was that?—About 1910, I think. It looked as if things were straightening up a bit and labour was improving. Then things went back again. It was then that we began to realize that we should make a loss.

80. Did the supply of labour diminish, then, during the third year?—In 1910 the supply of labour was better than we ever had. After that up to this year it has been getting worse all the time.

81. *The Chairman.*] The supply, and the quantity of work done per man?—Yes. I may say this: the shortage of labour and the shortage of production began almost immediately the Federation of Labour formed a union at the Otira Tunnel. It seemed to have an immediate effect on the men. I do not know why; but it looked as if, when they formed themselves into a union, the first thing they had to do was to strike.

82. Things were not so satisfactory from a labour point of view. No. Immediately this union was formed trouble began.

83. Have they been improving a little in that direction?—Oh, yes. We have not had any labour troubles for quite a long time.

84. I mean the men in their work?—I do not know that they have improved very much in their work.

85. *Mr. Okey.*] Have you tried any system of co-operation with the men?—No. We have discussed that very many times, but the difficulties in connection with it are so great that it seemed impossible to do anything in that way. If we were just driving a heading and doing no other work we could give the men so much a yard for it; but it is very difficult to give yardage for the widening out and the foundations, and the drains, and all that kind of thing. It is almost impossible on a work of the kind.

86. The driving is the principal work, is it not?—Yes. I introduced a system of bonuses which worked very well for a while, and then it went back. We have still a graduated bonus for the heading. It starts at 100 ft. in the fortnight, and increases per foot up to any number of feet the men can do.

87. *Hon. Mr. R. McKenzie.*] They have to drive 50 ft. a week before the bonus starts?—Yes. On many occasions they earned it. They were continually earning it for a while, but latterly they have never earned it.

88. *Mr. Seddon.*] Was that to each gang?—For the whole of the men at the face.

89. *Hon. Mr. Fraser.*] Is there any reason you can attribute for their not earning this bonus latterly?—None, except this, that they were getting good wages, and I think the feeling is that they do not want to "speed up" much.

90. *Mr. Nosworthy.*] Do you think that what the leader of the union said has anything to do with it—that you were getting £100,000 more for the work than you ought to get, and that they were going to have it?—I do not know if that enters into their minds. Individually I do not think it does.

91. *Mr. Okey.*] Is that bonus system still in force?—Yes. That statement that I handed in is somewhat wrong with regard to wages. Speaking of bonuses has brought it to mind. We instituted a system of bonuses of 6d. per cubic yard for every yard that was excavated, and every one working in the tunnel participated in this. It did not matter what the quantity was. It was really an increase in wages, but was given in this way in the hope that the increase of output would pay for this bonus. That was given about two years and a half ago. Every one working in the tunnel participated. If a man was earning 10s. a day it increased his wages to 10s. 6d. It was really a 6d. rise in wages. It ought to have encouraged every one, but it had not the desired effect. There was no greater output per man than there had been under the previous conditions.

92. *The Chairman.*] That payment was in addition to the wages set out in Exhibit E?—Yes.

93. *Hon. Mr. Fraser.*] I understood you to say that the first effect of the bonus was to increase the output, but latterly it did not do so?—Let me make it quite clear. The first bonus we paid was in the heading alone, and that is still in operation. At the start it did increase the output in the heading; they did earn this bonus on many occasions. But the subsequent bonus that I gave, of 6d. per cubic yard for all the excavation that was done, did not increase the output from the whole tunnel.

94. Did the second bonus in any way diminish the extra amount paid to the men working in the heading?—No.

95. *Right Hon. Sir J. G. Ward.*] In other words, anybody who was receiving the first bonus got the second bonus too?—Yes.

96. *Hon. Mr. R. McKenzie.*] The men at the heading had to drive 50 ft. a week before they got the first bonus?—Yes.

97. For every foot over 50 you paid them a bonus?—Yes.

98. Then men working at opening-up did not receive that extra bonus?—Not at that time.

99. But afterwards you gave them the same proportion as you gave the men in the heading? How much extra did you pay the men in the heading when they got over the 50 ft.—6d. a yard?—No; so-much a foot, the amount increasing with every foot that was driven. We started with 5s. a foot.

100. After you had arranged this bonus with the men in the heading you started to give 6d. a yard to the men in the face who were widening out?—The men all over the tunnel.

101. What is a fair average distance for you to drive your bottom headings at the Otira end in a week? You started your bonus at 50 ft., you say?—They have not been up to 100 ft. in a fortnight for the last four months.

102. What do you say is a fair average distance you can drive in a week under ordinary conditions?—I suppose about 45 ft. is the average distance that is being driven now.

103. Can the top heading and the widening-out and the concreting be carried on at the same time?—It can provided we can get the men.

104. What is the average distance you can drive the heading at the Bealey end per week?—I am not sure. We have the record of one fortnight at Bealey Flat, and it is about 70 links.

108. Say, about 43 ft. When you are driving at the Bealey end you cannot do any other work in the tunnel?—No.

106. The records of the Department show that you have driven at the Otira end over a chain a week on many occasions?—Yes, on many occasions.

107. You have driven over 4 chains in four weeks, I mean?—I do not think we have done that, but we have done over a chain a week, I think, on one or two occasions.

108. Do you think it would be possible to drive approximately a mile a year—or half a mile at the Otira end and less at the Bealey end?—I think it would be possible with the full number of men and a fair supply of men—I mean, if we had some control over the men so that they would do a fair amount of efficient work. But under existing circumstances I do not think it is possible to do it.

109. If all the rest of the tunnelling was allowed to stand at the Bealey end, you could drive about a chain a week there, I suppose?—Yes. We are through the worst of the soft ground there, and our proposal, after we had got this lining done, was to go right on with the driving.

110. Does the nature of the ground affect the rate of driving?—Yes; hard ground stops you. When I say “hard” I mean flinty.

111. The nature of the country that you are going through is practically the same at both ends, is it not?—Yes, but at Bealey Flat it is a great deal softer and more brittle.

112. *Mr. Seddon.*] What is the maximum number of men who can work at the face, driving, at the Otira end?—Nine in each shift. That is the maximum number we can employ in the heading—three machinemen, two checkmen, and three or four shovellers, as the case requires.

113. Have you been able to work that number all along?—No.

114. You say that when explosions take place those men have got to knock off for twenty minutes?—Quite twenty minutes.

115. That is the only way in which you will be able to do a certain amount of work all through the tunnel?—Yes. There is no way of saving the twenty minutes lost after every charge. It generally runs into half an hour.

116. Was there no means of pulling that rock down other than by explosion?—No.

117. *Hon. Mr. R. McKenzie.*] Is the plant you have got at the Bealey end sufficient to force air in for a mile and a half or so?—Yes.

118. And your pumping plant?—Is quite sufficient. The power we have is ample.

119. You are satisfied that your power is capable of dealing with any reasonable quantity of water you are likely to meet with?—Oh, yes. We have the same power at the Bealey end as at the Otira end.

H. J. H. BLOW, Under-Secretary for Public Works, examined. (No. 3.)

1. *Hon. Mr. Fraser.*] You have heard the evidence given by Mr. McLean. If you wish to make a statement to the Committee I have no doubt they will be pleased to hear you, and afterwards you can reply to questions. Or if you like, I will ask you certain questions right off?—I do not think there is much, if anything, in Mr. McLean's statement that requires to be controverted. There is really nothing at issue between the contractors and the Department. I have no statement to make, but shall be glad to answer questions.

2. Has the work which Mr. McLean has done from the first been done in a manner which has met with the approval of the departmental engineers?—Yes, in every way, except as regards the rate of progress. The Department has been disappointed at the rate of progress.

3. Have remonstrances been made to Mr. McLean in regard to this matter of rate of progress?—Yes.

4. Has there been correspondence on the subject?—Yes.

5. What were the reasons alleged by Mr. McLean?—I have not got the letter marked, and it would take me a little while to find it; but I think they were largely similar to the reasons he has alleged here.

6. State generally what they were?—I personally wrote a letter to Mr. McLean, by direction of the Minister, pointing out that he was much behind with his contract work, and asking what assurance he could give as to better progress in future. To that letter a reply was received: it recited the difficulties they had encountered, and stated that they had made the best progress they could under the circumstances.

7. Was it generally in accordance with the terms of his statement to this Committee?—Yes, generally in accordance with that.

8. *The Chairman.*] About when would this be?—It is a year or more ago, I think, that I wrote. I will look up the letter I wrote, and the reply, and put them in.

9. *Hon. Mr. Fraser.*] How long ago is it since the Department began to realize it would be impossible for Mr. McLean to complete his contract within the specified time?—I think we realized it almost from the start. The rate of progress has never been sufficient to complete the work in the contract time.

10. Was that borne in on you at the end of the first year?—Yes. We were rather dubious from the start whether it would be completed in the time.

11. What do you call "the start"—the time of signing the contract?—Yes, even earlier. Mr. McLean's tender was on the basis of getting an additional year, and negotiations proceeded between the Department and Mr. McLean to get that request withdrawn. We declined to allow him to sign the contract until he had amended his tender by the substitution of sixty months for seventy-two months. Although Mr. McLean signed the contract to carry out the work in sixty months, we had considerable doubt as to whether he would succeed in accomplishing the work in that time.

12. I understand that you insisted upon Mr. McLean doing in five years what the Department felt quite confident he could not do in five years?—The Department thought the work could be carried out in five years.

13. That is to say, the Engineers thought so?—Exactly.

14. Was that the opinion of the Chief Engineer?—Yes; but it was not the opinion of Mr. McLean. He only withdrew the seventy-two months and substituted sixty because he was told he would not get the contract unless he did.

15. You stated that prior to his signing the contract you were doubtful as to whether he could finish the work in the five years. Did you mean that?—I meant it literally. My doubt was based on Mr. McLean's own statement that he could not do it in the time.

16. The Department insisted on the five years because the same terms had been offered to the other contractors?—Yes.

17. Not because you thought he could do it in the time, but because it would have been unfair to make it anything else?—We thought that we could have done it ourselves in that time.

18. *The Chairman.*] You thought there was a possibility he would not do it in the time?—I was convinced of that, because he did not believe he could do it himself; and if a man does not believe he can do a thing he is not at all likely to do it.

19. *Hon. Mr. Fraser.*] As time went on, I have no doubt the Department got still more confirmed in the belief that Mr. McLean could not possibly finish in the time?—Yes.

20. Were the reports of the Engineers such as to lead you to believe that he was doing his best all the time to comply with the conditions of the contract?—That is a matter that the Engineer would not express an opinion upon unless asked. The Engineer's reports from month to month are that so much work has been done. If he were asked to report whether the contractor was doing his best he would do so, but hardly unless asked.

21. Then there came a time when financial difficulties arose. Are you conversant with what occurred, or was it through the Ministers?—I think I have a knowledge of the facts.

22. The negotiations were not done through you, were they?—The application was made direct to Ministers, but the Ministers took the officials into their confidence.

23. *Mr. Nosworthy.*] I understood you to say that the Department reckoned the work could be done in the five years?—We thought so.

24. Are you still of that opinion after the experience Mr. McLean has gone through?—That is a question I would rather you asked the Engineer-in-Chief.

25. *Mr. Davey.*] You said it was scarcely likely that the local Engineer would report as to whether he thought the work was progressing properly unless he had been asked for a report. Was he ever asked for one?—You used the word “properly.” He would certainly be asked to report if the work was being done improperly. Mr. Fraser’s question was if he reported whether the contractor was using every effort to comply with the terms and conditions of the contract.

26. That is exactly what I mean?—No, I do not think the local Engineer was ever asked. Mr. McLean was frequently in Wellington, and he called upon both the Engineer-in-Chief and myself. The Engineer-in-Chief knew quite well what efforts he was making. So it was hardly necessary to ask the local Engineer for a report. We also knew month by month from our local Engineer the number of men he was employing.

27. Do you think it was quite fair to insist upon Mr. McLean signing a contract to complete the work in five years when he declared distinctly, as an experienced man, that it could not be done, and you suggest that you thought so yourself?—The only additional responsibility he undertook in so signing was that he would have to pay the penalties for delay if he was a year late in completing the work.

28. What were the penalties?—£280 a week; but it is not the custom of the Government to enforce penalties right up to the hilt. All the circumstances are taken into consideration before the amount of the penalty, if any, is decided upon.

29. On what basis were progress-payments made to the contractors?—90 per cent. of the value of finished work and 50 per cent. of the value of all plant and material brought on to the ground and approved by the Engineer as fit and necessary for the work.

30. And that has been strictly adhered to?—No, we have paid beyond that. We have been paying 100 per cent. on the plant for some time past.

31. But is that not in the nature of a loan—an advance payment as against the work?—It is an advance payment, but that is the basis of the advance.

32. Could you tell us why that was done?—On account of the representations of the contractor that he could not get on unless the Government did come to his assistance.

33. It was not all in the nature of an advance?—I think it was wholly in the nature of an advance. The advance was based on that principle.

34. *Hon. Mr. Fraser.*] Was the money not advanced in order to enable Messrs. McLean to purchase certain plant, without which they could not carry on the work?—I do not think it was wholly that. I think there were certain liabilities that had to be extinguished, in addition to the purchase of certain plant.

35. *Mr. Davey.*] What is the total amount that has been advanced beyond the 90 per cent. progress-payments?—£25,000 has been actually paid, and we have entered into an engagement to pay another £5,000.

36. That is in accordance with Mr. McLean’s evidence?—Yes.

37. *Right Hon. Sir J. G. Ward.*] Are you of opinion, with the knowledge you now have, that the work could not be carried out, except at heavy loss, at the price at which Mr. McLean undertook to carry it out?—It is difficult for me to pit my opinion against the actual experience of the contractors. At the time the tender was put in we thought it quite excessive, and the Engineer-in-Chief recommended the Government not to accept it, because the price was too high and the Department could carry out the work for very much less.

38. What is your opinion respecting the results of the carrying-out of the work by the contractor, as against the opinion of the Engineer at the time the contract was accepted?—I am disposed to think the Government could have handled the matter somewhat differently. We should have done the work wholly on the piecework system, and if the men had worked slowly they would have earned so-much less. If they had worked more vigorously they would have earned so-much more.

39. By the piecework system you mean the co-operative system?—Yes. The co-operative system is entirely based on piecework rates.

40. In the light of what has occurred since, do you still think the Government could have carried out the work at a lesser cost than McLean Bros. have done?—I think so. I think our management expenses would have been less, and I think that in dealing with the labour difficulty, assuming we should have had one to deal with, we could have handled it better than a private contractor. If with the contractors a strike occurred and much delay was likely to ensue, the contractors would probably be served with formal notice that they must resume work at once or severe penalties would be exacted; whereas the Government of the day would have been able to suit themselves in that respect.

41. Your opinion, then, is that if, as the result of this inquiry, the Government decided to go on with the work themselves, they can carry it out at a less cost than the contractors?—I think so.

42. *Mr. Davey.*] Do you consider that co-operative labour could be efficiently used in a tunnel of that character?—We have used it in many other tunnels. Constructing tunnels is no new experience to the Department.

43. I am referring to this particular one: this is an extraordinary one?—This tunnel at present is no longer than some of our other tunnels. It is not in quite two miles; we have some other tunnels in the country that are very nearly that length.

44. You think, then, that co-operative labour could be efficiently employed at such a place as the Arthur’s Pass Tunnel?—Yes, I think so.

45. *Right Hon. Sir J. G. Ward.*] Could the Government put to satisfactory use a boring plant and machinery such as the contractors have there, assuming the Government were to take the plant over?—You mean, if we carried on on the co-operative system could we utilize boring-machines?

46. Yes?—Certainly.

47. Could the machinery be used for different undertakings in different parts of the country?—If it were not worn out it could; but if it is going to have ten years' wear there will not be much left of it, I apprehend, at the end of that time.

48. Replacement of portions of a plant of that kind, unless they are actually brought into contact with hard metal, would enable the plant to be kept up to date?—Probably, but contractors' plant is subject to severe wear-and-tear—much more severe than machinery in factories in cities.

49. *Mr. Okey.*] Do I understand that in their tender Messrs. McLean stated six years as the time?—Yes.

50. That tender would be informal, then?—Strictly speaking. It was not in accordance with the specification.

51. You accepted their tender conditionally on their altering the time to five years?—That is so.

52. When the contractors made application for an advance on the accumulated amount held back did you have an idea that they would not be able to carry out the contract at the contract price?—Not when the first advance was applied for. I thought then that the contractors were perhaps temporarily embarrassed, and that it would be a wise measure to assist them.

53. You reduced the progress-payments when they got that advance, did you not, from 90 per cent. to 80 per cent.?—No; the payments have never been reduced. An agreement was entered into that so soon as they had drawn the full amount of the advance the payments were to be reduced, but they have only recently drawn the last instalment of even the first advance, and by that time they had applied for a second advance, and the agreement entered into for the second advance postpones the reduction in the payments until the full amount of the second advance is paid, or until the 1st March next, whichever happens first.

54. You can employ only a certain number of men in boring in tunnels, I take it: even if you have the funds to carry on with you cannot utilize any additional men?—That is so.

55. In making an estimate of the time required to carry out the contract, you would have to take that into consideration—namely, the distance that could be driven in a day?—Certainly, but we assumed that as much work could have been done at the Bealey end as at the Otira end.

56. And you think so still?—Clearly, but it is much more expensive to work at the Bealey end than at the Otira end. It can quite well be done, however.

57. That would have made the cost much greater?—That was allowed for.

58. You do not think, then, that McLean Bros. are carrying out the contract in as cheap a way as it could possibly be done—or as cheaply as it could be done by the Department?—I do not like to reply definitely Yes or No to that question, because Messrs. McLean are very experienced contractors—there are no more experienced contractors in New Zealand—and they have met with difficulties which neither they nor the Department anticipated. Not only did we think their tender price was a good one, but they thought that themselves. Now they have had their eyes opened by adverse experience, and I do not say that we have not learnt a little, too.

59. You may have been in the same position—the same difficulties may have cropped up with you and upset your estimate as to what the work could be done for?—It is possible; but I think the Government could have dealt more advantageously with the labour question than a private firm of contractors.

60. That has not been what we have noticed in connection with coal-mines. You have your trouble there just the same as private owners?—Not to the same extent. We have had no serious strike in the State coal-mines—only a matter of two or three days.

61. You would have carried out this work on the co-operative system?—Yes, a fixed rate per yard. No doubt the rate per yard would have varied as the distance increased—necessarily so.

62. *Mr. Seddon.*] You know the electrical plant that the McLeans have at Goat Creek and the Punch-bowl: do you think it is possible for the Government to take that over at the end of the contract?—That is a question you must address to the Engineer-in-Chief. I have never inspected the plant in detail.

63. It is suggested that the Government should take over the plant to which I refer?—Yes. I doubt whether it is quite permanently installed. I have not seen this particular plant that you mention, but as it was installed for the purpose of carrying on the work at this tunnel, which was estimated to be completed in four or five years, it is doubtful whether it is installed in the same way as if it was intended to be there permanently.

64. You have departmental officers down there supervising, have you not?—Yes.

65. How many altogether?—An Assistant Engineer lives on the ground at Otira.

66. And at the Bealey?—The one Engineer is in charge, but there are several overseers at each end. You need to have an officer practically for each shift.

67. *Hon. Mr. R. McKenzie.*] The specified time for the completion of the contract was five years, was it not?—Yes.

68. There was practically £29,000 between the lowest tender and the next one?—Yes.

69. Had the Department agreed to extend the time to Mr. McLean from five years to six years, would not the second tenderer have made serious complaint—and had good cause for it?—Yes, clearly.

70. Would it have paid the Department better to have accepted the second tender at £628,732 than to have accepted McLeans if they insisted on the extra year? I wish you in answering the

question to bear in mind that this tunnel was nullifying the full use of the railway from Bealey to Springfield and from Otira to Lake Brunner?—Yes, and, of course, we should lose a year's interest on the money expended on the tunnel. It would have been better to accept the second tender and have the work carried out in five years—if we could have relied on this tenderer doing it in the time.

71. Anyhow, Mr. McLean agreed to the reduction of the time?—Yes.

72. The Department have the right to have the contract amended if they think proper—I mean the schedule or any part of the tender—before it is signed?—But this tender was not in accordance with the conditions. We simply pointed out to Mr. McLean that it was not so, and told him he must make it in accordance with the conditions, and he agreed.

73. How long was it after the contract was signed that the heading was started at the Otira end?—I think it was nearly a year.

74. If the Department had carried out the work, would it have waited a year before starting with the heading?—No.

75. Was there any reason why Mr. McLean should not have started it within a month of signing the contract?—I do not know that he had all the plant. When the Engineer-in-Chief recommended that the Department should carry out the work, he went on to say that we should immediately despatch a cablegram ordering the plant; and we should have received it in three months.

76. The permanent plant for working the whole tunnel would not be required to start driving that heading?—And there was work to do before you could get to the heading.

77. It is really the driving of the headings that is delaying the work?—Yes.

78. Do you know of any reason why Mr. McLean should not have started the heading at the Otira end twelve months before he did?—I think I know why he did not start. Not having had experience of work of this magnitude, he went on a tour in Europe and elsewhere to have a look at large undertakings, and to select suitable gentlemen to assist him.

79. It was not necessary for Mr. McLean to be in the country at all to have this heading started, was it?—No. There were two brothers; the second was quite competent to take charge of the heading.

80. Do you think the heading should have been started earlier than it was?—There was not a moment to be lost if the work was to be completed in the time.

81. Have you any idea how long it was after the contract was let before the Bealey heading was started?—A very long time.

82. Is there any reason why the Bealey heading should not have been started about two years before it was?—It could have been started at the same time as the heading at Otira.

83. Supposing the Department had been carrying the work out, would the Department have started at both ends?—Both ends simultaneously.

84. You stated that the Department can do tunnel-work as cheaply as a contractor?—I think we can do almost any work as cheaply as a contractor.

85. You have the records showing the history of all the tunnels that have been constructed lately in the country. Will you give me the experience of the Big Hill Tunnel on the Beaumont line? Did not the Department call for tenders, and then carry out the work by co-operative labour? You know that there were tenders called for the Big Hill Tunnel?—Yes, but you cannot compare the two systems yet, because we have not completed the tunnel on the co-operative system. I know that when the tenders came in they were in excess of the estimate.

86. Was the position this, that the estimate was £22,000 and the lowest tender £34,000?—There was a marked difference, but I am disposed to question whether the estimate was on the same basis as the tender.

87. Can you supply this information to the Committee?—Yes. The amounts you mention are approximately correct, but I am afraid that in compiling the estimate some of the works included in the contract were not taken into account. This work was very similar to the Otira Tunnel, except that our tunnel is shorter.

88. It is no shorter than the Bealey heading?—No, I think not.

89. You will be able to give the Committee, from your Engineers' reports, the actual cost of the tunnel, independent of any outside work?—I can tell you its cost to date, and what has been done to date. It is nearing completion, but is not finished yet.

90. You can give us the actual cost to date, and the tunnel is so nearly finished that you can approximately state the full cost?—Yes.

91. The Department are carrying on the cutting of long tunnels throughout the Dominion by co-operative work?—We have done quite a number.

92. You are doing a number now, are you not?—We have got the Big Hill Tunnel, and there is one on the North Auckland line. We have not carried out any long tunnels on the co-operative system.

93. What estimates were made for this Arthur's Pass Tunnel?—An estimate was made, based on the actual cost to the Department of other tunnels in similar material, and a very considerable percentage was added on account of the increased length of this tunnel. When the first tenders came in the late Mr. P. S. Hay was Engineer-in-Chief. The lowest tender was rather lower than Mr. McLean's, and Mr. Hay did not recommend its acceptance because he thought it was too high. When the second lot of tenders came in Mr. Holmes was Engineer-in-Chief, and he also did not recommend the acceptance of the tender, because he thought it too high.

94. Are those estimates available?—I have no details. Mr. Holmes may have.

95. There was an American engineer named Bogue brought here to report on this work and furnish an estimate, was there not?—I do not think he was brought here to estimate the cost. The work was of such magnitude that the Government thought it desirable to have the opinion of

a leading outside expert on the proposals of their own Engineers. Mr. Bogue went over the line that had been selected by the Department, and confirmed the Department's choice.

96. But Mr. Bogue did make an estimate?—I expect he did, but it would be quite an approximate one.

97. The whole of the details of it are in the Appendices to the Journals of the House?—Yes; but you would not think Mr. Bogue would be in so good a position to make an estimate as we ourselves, because he would not know the cost of materials and labour in New Zealand.

98. You make 50 per cent. progress-payments on all the plant brought on to the ground in connection with this contract?—That is the condition in the contract. We are paying rather more than that now.

99. The water-power plant is specially included in the contract, is it not?—No. The contract is to construct the tunnel; the means of doing it are left to the contractors' own devising.

100. The different items of plant must be shown in the progress-payment certificates?—Doubtless the Engineer has them; we have not got them.

101. Does he not send them to the Department?—No.

102. Was the first advance of £20,000 made entirely for the purchase of new plant?—I do not think it could have been, because it was a condition of the agreement that £10,000 was to be paid down on the signing of the agreement. That would hardly be for the purchase of new plant.

103. Have you got the agreement there?—Yes. I see from it that £7,000 was in respect of plant then on the ground, and £13,000 for further plant.

104. You could not tell us what plant has been brought on to the ground since?—No. The Resident Engineer at the works could tell you.

105. *Mr. Nosworthy.*] With regard to the question I asked about Cochrane Bros., and the correspondence that passed between them and the Government with regard to the construction of the tunnel, I should like you to put that on record as a reference?—I find from the records that the High Commissioner cabled as follows: "Cochranes' estimate £400,000 actual cost without profit."

106. *Hon. Mr. Fraser.*] That was for the tunnel?—That was for the contract. Plans and specifications were in London. Cochranes omitted to tender. They said they would tender if we extended the time, but the Government did not extend the time. Apparently, however, they furnished the High Commissioner with an estimate, and he cabled as I have stated.

107. What would they want as profit on that amount?—At least 10 per cent., I should say.

108. *Right Hon. Sir J. G. Ward.*] It is quite clear that that was not a tender?—It was certainly not a tender.

109. Is it within your knowledge that Cochrane Bros. had not been on the ground where the tunnel was to be made?—It is not in my knowledge. We allowed ten months, so that prospective tenderers in both England and Australia could send agents to New Zealand. I am aware that one engineer came from London and went on to the ground and had a look at the work, but I am not aware whether he was advising Cochranes.

110. In all probability Cochranes would have called upon you if they had come?—The gentleman who did come was Mr. Carruthers, and he called upon me because he was an old friend of mine.

111. If Cochrane Bros. had sent a representative, probably he also would have called upon you?—I think it most likely.

112. A mere estimate as against a tender is of practically no use, is it?—I think it is valueless, but Mr. Nosworthy asked for it.

113. *Hon. Mr. Fraser.*] You cited the estimate of £22,000 for the tunnel at Big Hill and the tender for £34,000: has the one any relation to the other?—In the ordinary way they should have very close relationship, but in this case I think there was something wrong with the estimate. I believe that a part of the work included in the tender was omitted when compiling the estimate.

114. I suppose it is within your knowledge that occasionally, even with the Public Works Department, estimates are made that are not borne out by results when the work is completed?—Yes.

115. I suppose that is the case in every undertaking?—Yes, and it is also the case with contract work. The lowest tender is not usually within the estimate; it is usually in excess of the estimate.

116. I am not asking about tenders: I am asking about the estimate made for a work, and the cost of that work after it is finished?—It is usually in excess of the estimate. I can quote a few cases where the work has been finished within the estimate.

117. Therefore the estimate of £22,000 for the tunnel at Big Hill is no indication at all as to what the tunnel might cost?—I think it is.

118. I mean as far as comparing that with the tender is concerned?—As regards the actual tunnel, I think the estimate will be fairly reliable.

119. Did I understand you to say that the experience of the Department has been that tunnel-work done by co-operative labour is cheaper than any contractor would do it for?—The question addressed to me was whether work could be carried out on the co-operative principle as cheaply as by contract.

120. I want to know whether it has been done, not whether it could be done?—I think the answer must be in the affirmative, but it is difficult to prove, inasmuch as there has been no contract work in tunnels in New Zealand for the last twenty years or so. I can tell you exactly what every tunnel we have made has cost per yard, and you can see for yourselves whether this cost is fair or not,

121. Is there any tunnel carried out by co-operative labour which you can compare with this Otira Tunnel in length?—No.

122. Did you hear the evidence given by Mr. McLean, that he would have liked to use the contract system for working in the tunnel, but he found it was of no use attempting to do it, because it would not have worked out well, and it might not have been safe for the men?—I did not hear that, and I should disagree with it. The trouble is that he cannot use the piecework system. It would be against the award, and the labour union would remonstrate at once.

The Chairman (to Mr. McLean): When you were asked about piecework you gave some reasons why you were unable to adopt that system. You said that you had a long conference with the men about it, thinking that you might work out a scheme to adopt it, but you found that it was impracticable?

Mr. McLean: Not with the men.

The Chairman: You gave some reasons why it was impracticable?

Mr. McLean: We considered it impracticable under the conditions of labour; also, there was danger to the men, and the men themselves were not anxious to work in that way.

123. *Hon. Mr. R. McKenzie* (to witness).] The Midland Railway Company had an estimate made for this tunnel, did they not?—I do not think so. They did not propose to put in a tunnel there.

124. I think they went into the question of a tunnel, at all events?—I am not aware whether they had an estimate or not.

125. Would you be able to give the Committee the cost of the Deborah Bay Tunnel—a rock tunnel which was done by contract?—Certainly.

126. And the Chain Hills Tunnel and the Caversham Tunnel?—The Caversham Tunnel was carried out by the Provincial Government. It was a very cheap tunnel. The Chain Hills Tunnel was much more difficult.

127. The Deborah Tunnel was very much like this at Otira, only shorter?—It is a long tunnel, and was an expensive one.

128. Will you supply the Committee with a schedule of wages earned by men working on co-operative works for the Government in tunnels since the Arthur's Pass contract was let, so that we can compare them with the wages paid by Mr. McLean?—Very well.

129. Mr. McLean handed in a return of wages: will you please take that and make a comparison of the two, and submit it to the Committee?—Yes.

130. *Mr. Davey*.] Have you known of many instances where a tender was below the Government estimate?—It sometimes happens. We had one not long since, where the tender was about half the estimate. The tenderer became bankrupt very promptly.

131. Did you accept it?—Yes. If we had not accepted it that man would have had friends in Parliament who would have wanted to know why we had passed him by and accepted the tender of some favourite.

132. *Hon. Mr. R. McKenzie*.] With every Government work does the Engineer send in a detailed estimate on practically the same schedule as that on which the contractors have to tender?—Yes.

133. Are not the Government Engineers in as good a position to estimate work closely as contractors are?—Since we have been carrying out work on the co-operative system I think they are, because they actually handle the men and buy the materials, and so on.

134. The estimate schedule that goes before the Tenders Board is for the information of the Minister and the Board, so that they can make a comparison between the tenders received and the departmental value of the work?—Exactly.

135. You can compare the various items of the estimate with the various items in the tender schedule?—Yes.

136. If the tender is too high the Board invariably advise the Government not to accept it?—That is so.

137. But to carry out the work on the co-operative system or call for fresh tenders?—That is so.

138. In estimating work the Government Engineers are allowed to put in an item for contingencies amounting to about 10 per cent.?—It is usual to make an allowance for contingencies.

139. So that in connection with this Otira Tunnel £50,000 was allowed for contingencies?—In addition to the 50 per cent., or nearly 50 per cent., which was allowed for increased length, &c.

140. Ten per cent. would be allowed on that even for contingencies?—Probably. Mr. Holmes could tell you that better than I.

141. *The Chairman*.] What is the experience of the Government as to the actual cost of tunnelling as against the estimates previously prepared: do tunnels as a rule exceed the estimates of the Government, or do they not?—I am afraid they generally exceed the estimates.

142. By what percentage, roughly?—Speaking generally, by no very great percentage.

143. *Hon. Mr. R. McKenzie*.] You let contracts recently for a few tunnels on the line from Westport to Inangahua Junction?—Yes.

144. How did those contracts compare with the estimate?—They are mostly below the estimate.

145. And they are all rock tunnels?—Yes.

146. *Mr. Okey*.] Has the Department made an estimate for the uncompleted portion of this work?—No, not specially. We have the original estimate, and we could deduct from that the value of the completed work.

147. Taking the plant into consideration?—We do not take plant into consideration quite in that way. We find that a work costs us so-much a yard after paying for all plant. The estimate for this tunnel was based on the actual cost to the Department of other tunnels.

148. You do not take the plant into consideration, then, in making an estimate?—It is all taken into consideration, but our estimate is based more on actual experience than on theory. We take the actual cost of similar works elsewhere.

149. You heard Mr. McLean state that the plant which has cost them £73,000 he estimates to be worth £5,000 at the end of the job. That means that the whole cost of the plant has to be put on to the work?—Mr. McLean said that was a very conservative estimate, and I concur in that view. I have here a statement of the accounts as they stand to-day [handed in].

THURSDAY, 5TH SEPTEMBER, 1912.

CHARLES RANKEN VICKERMAN, Superintending Engineer, Public Works Department, examined.
(No. 4.)

The Hon. Mr. Fraser: It will be remembered, Mr. Chairman, that a question was asked of Mr. Blow as to what the average cost of constructing tunnels was, and he said it would be better to ask Mr. Holmes, Engineer-in-Chief. Well, Mr. Holmes is away, and Mr. Vickerman has come to give the information on behalf of the Department.

Witness: I have made out a complete list of tunnels that have been carried out, which I produce. I give the tunnels done by contract and those done by co-operative labour since the system was altered. The statement shows, among other things, what the tunnels cost per lineal yard for lining and excavating. The making of tunnels by contract was stopped about the year 1890, and since then they have been done mostly by co-operative contract. The size of the tunnels has been slightly varied, too, of late years. They were 15 ft. high and 12 ft. wide originally—up to about the time the co-operative system came in. Then the size was increased to 15 ft. 6 in. high by 12 ft. 6 in. wide—that is, at the springing of the arch. Later on again—about five years ago—the size was increased to 17 ft. 1 in. in height and 15 ft. in width. The Arthur's Pass Tunnel is not quite the same size. It is 16 ft. 9 in. high and 15 ft. wide at the centre and 14 ft. wide at the rail-level. I have diagram plans of tunnels here, so that if you like to refer to them you will see exactly what I mean.

1. *Hon. Mr. R. McKenzie.* Can you tell us any material difference that the alteration in size made?—You have a bigger area of excavation. At the Round Hill Tunnel, which was constructed on the old design and is 15 ft. by 12 ft., the excavation required was 21·4 cubic yards per yard run. In the 15 ft. 6 in. by 12 ft. 6 in. tunnels the excavation is 24·4 cubic yards per yard run. The enlarged tunnel that we are building now necessitates the excavation of 29·9 cubic yards per yard run with 12 in. lining, and 31 cubic yards with 15 in. lining.

2. It costs you on an average about 10s. a lineal foot more now, does it not, on account of the increased size?—There is 10 cubic yards per lineal yard between the Round Hill Tunnel and the type of tunnel we are building now—that is, 10 cubic yards of excavation.

3. And what is about the rate?—Anything you like.

4. What is the rate at the Arthur's Pass Tunnel?—About 17s. a cubic yard.

5. What is your ordinary rate?—It depends on the material. With northern papa it runs from 7s. to 10s. a cubic yard, according to whether there are backs in it or not. The cubic content of the Arthur's Pass Tunnel is 33·4 cubic yards per lineal yard run. I also produce, as I stated, a list of contracts that have been let at different times for the construction of tunnels, and I have given the cost per lineal yard of tunnel complete. I have shown the cost of excavating and lining separately, per lineal yard.

6. Can you tell us the total, for lining and excavating, per lineal yard, for the Arthur's Pass Tunnel?—£60 15s. per lineal yard for lining and driving.

7. Can you give us the figures for the Deborah Bay Tunnel?—It cost from £28 to £40 a lineal yard, according to the thickness of the lining. In this case it was simply a contract originally to excavate the tunnel and leave it unlined, but as a result of leaving it in that condition it began to come down in great lumps from the roof, and it cost a great deal more to line than it would have cost if it had been lined straight away.

8. *Hon. Mr. Fraser.* Can you suggest a tunnel that it would be fair to compare with the Arthur's Pass Tunnel?—We have nothing that will compare with it. The length of the Arthur's Pass Tunnel is out of all comparison with anything we have touched. Its extreme length affects the cost of the whole tunnel. The Deborah Bay Tunnel was 1,400 yards long, as against the Arthur's Pass, 9,354 yards. That shows you at once that you cannot compare the two.

9. *Hon. Mr. R. McKenzie.* Can you make a comparison in this way: in estimating the excavating and trucking at the Arthur's Pass Tunnel, would you set it down at the same, approximately, as ordinary tunnels, and then make a certain allowance on account of the length for running the stuff in and taking the spoil out?—Yes, I suppose you would, but it would be very difficult to do so.

10. Who made the estimate in this case?—Mr. Peter Hay.

11. You have the details of the estimate, of course?—We have his figures, but I do not think you can put your hand on the actual estimate. He put it down at half a million.

12. Are there not in the office any details of the estimate?—He did not detail what he allowed for the different items.

13. Can Mr. Hay's detailed estimate as it stands be put in?—I do not think it is his estimate. It was made up by one of the draughtsmen.

14. But you told us just now that he made it?—It was made up under his supervision.

15. He must have passed it and approved of it?—Well, he did not, because he did not adopt the figures that were there: he added nearly half as much again.

16. *The Chairman.*] I will ask Mr. Blow to put that in. The cost that you quote for the Otira Tunnel is £60 15s. per yard, Mr. Vickerman: what is the next highest cost to that, and in respect of what tunnel?—I have the figures here for the Lyttelton Tunnel, if you like. It is a mile and three-quarters long, and cost £65 a yard, and it is not lined.

17. Give us a modern instance, if you can?—The Mont Cenis Tunnel, 26 ft. by 26 ft., cost £206 a lineal yard. It has a double line of rails.

18. *Hon. Mr. R. McKenzie.*] What is the cubic content of that?—About 80 cubic yards per lineal yard.

19. *Mr. Davey.*] How does the Lyttelton Tunnel compare with the Otira in size?—The Lyttelton Tunnel is a little larger than our ordinary tunnels, but I do not think it is quite so large as the Otira Tunnel: I have not the exact width of it. There is another tunnel on this list that you might like me to quote—the Poro-o-tarao Tunnel, on the Main Trunk line. It is 1,166 yards long.

20. *Hon. Mr. R. McKenzie.*] That is a pumice tunnel, is it not?—It goes through papa and sandstone, but it is lined right through. It cost £33 4s. a lineal yard, a good deal of which was due to the cement having to be carted up from Te Awamutu. They had to make a road of their own—some £16,000, I think, they spent on that. Then, the Spooner's Range Tunnel, Belgrove, is 1,474 yards long. It was very cheaply done, the cost being £20 13s. per lineal yard, including lining. Those are the principal tunnels that have been done by contract. A lot of tunnels have been constructed since 1890 by co-operative labour. I will give you some of those. The Tahekeroa Tunnel, which is in papa country, not so hard as the Arthur's Pass country—is 488 yards long, and cost £22 10s. per yard. This was brick-lined, and was 15 ft. 6 in. by 12 ft. 6 in. in size. The Ahuroa Tunnel, 424 yards long, cost £23 a lineal yard; the Hoteo, 528 yards, cost £21 16s. 6d. a lineal yard; the Mainene, 17 ft. by 15 ft.—the largest size—cost £28 11s. a lineal yard. Then the Ross Hill Tunnel, 17 ft. by 15 ft.—the last tunnel finished—is 374 yards long, and cost £40 12s. a lineal yard.

21. *Mr. Seddon.*] How do you account for that costing so much more than the others?—The ground was somewhat heavy, and the tunnel was pushed through by means of a bottom heading and was left standing for some time; the ground began to give way, and we had to do extra timbering.

22. *Hon. Mr. R. McKenzie.*] Did you have any run?—No, we did not get a run. Then, on the Paeroa-Waihi Railway the Karangahake Tunnel was put through. That was 15 ft. 6 in. by 12 ft. 6 in. in measurement. The work was done from about 1900 to 1905. The tunnel was 1,194 yards long, and cost £27 17s. 9d. a lineal yard.

23. That is a rock tunnel, is it not?—That is so; it is in diorite.

24. *Mr. Blow.*] All these tunnels that you are giving us now are lined?—Yes. There are two small tunnels on the Gisborne line which were done in 1905 and 1907. One was 202 yards long and cost £32 8s. 3d. a yard; and the other 286 yards, costing £29 2s. 10d. a lineal yard.

25. *Hon. Mr. R. McKenzie.*] There was a considerable expense in connection with these tunnels, was there not?—They were in rotten papa, and the papa came down.

26. How far did you have to cart your shingle and cement?—About a couple of miles.

27. *Mr. Seddon.*] What was the size of these two tunnels?—15 ft. 6 in. by 12 ft. 6 in. On the Main Trunk line, the Raurimu Spiral, done in 1907, the larger one was 418 yards long and cost £25 4s. 11d. a yard, and the small one 99 yards long, costing £29 9s. 5d. These were the largest size—17 ft. by 15 ft. At the south end of the Main Trunk line, the Mataroa Tunnel, 15 ft. 6 in. by 12 ft. 6 in., and built in 1905, is 666 yards long, and cost £21 18s. per lineal yard. The Powhakarua Tunnel, 15 ft. 6 in. by 12 ft. 6 in., constructed about 1897, is 600 yards long, and cost £18 16s. a yard. The Hapuawhenua, 17 ft. by 15 ft., built in 1907, was 225 yards long, and cost £28 12s. a lineal yard.

28. *Hon. Mr. R. McKenzie.*] Have you got particulars of the Whangamomona Tunnel?—They are not made up yet.

29. Give us the cost of the tunnels going up the Waimakariri on the Midland Railway?—Very well, I have them here.

30. *Hon. Mr. Fraser.*] Let me ask this first: in most of those tunnels that you mentioned in the North Island the material driven through was papa?—Yes, mostly.

31. Is papa as difficult to drive through as the material being driven through now at Arthur's Pass?—It is not so hard and not so costly. You could not have better material for driving a tunnel through than good papa.

32. In what relationship would you set the cost of the one to the other?—The lining would be the same, but whereas you would excavate for about 8s. a cubic yard in the papa, you would want about 12s. in the clay slate. That is for mere driving.

33. What proportion of the cost of a tunnel does the driving bear to the total, or what does the bricking cost?—In papa the driving and the lining cost much the same; but when you get harder rock it is two-thirds driving and one-third lining.

34. *The Chairman.*] You were going to deal with some of the tunnels on the Midland Railway: give us one or two?—I will give you the longest ones. No. 3 tunnel, 594 yards long, cost £32 16s. a lineal yard.

35. *Hon. Mr. R. McKenzie.*] That is in rock?—In disintegrated rock, with bands. The size is 15 ft. 6 in. by 12 ft. 6 in. No. 4 tunnel, same size, 418 yards long, cost £34 9s. a lineal yard; No. 7, same size, 401 yards, cost £38 11s. a lineal yard; No. 8, same size, 583 yards, £39 18s. a lineal yard; No. 9, same size, 665 yards, cost £40 18s. All those are lined.

36. How far did you have to cart the cement for those tunnels?

Mr. Blow: The shingle was hauled up from the river below. I think we got the cement from Paterson's Creek.

Witness: The distance would vary, then, up to about ten miles.

37. *Hon. Mr. R. McKenzie.*] You had to raise the shingle 700 ft. or 800 ft. out of the bed of the Waimakariri by rope, did you not?

Mr. Blow: Yes.

38. *The Chairman.*] These tunnels were all done by co-operative labour, Mr. Vickerman?—Yes.

39. *Hon. Mr. R. McKenzie.*] Can you give us the figures for the tunnels between Broken River and Sloven's Creek?—I have two down here. They are 17 ft. by 15 ft. No. 11 tunnel, done in 1907, was 176 yards long, and cost £35 12s. a lineal yard; and No. 16 tunnel, 66 yards long, cost £25 19s. 6d. a yard.

40. Give us some of the tunnels that were done by contract on the Westport-Inangahua line?—No. 2 contract, D. McLellan—these are 17 ft. by 15 ft. tunnels—88 yards long, £40 per yard; No. 10 contract, Maxwell and Mann, 256 yards, £40 a yard; No. 14 contract, D. McLellan, 176 yards, £45 9s. a yard. These tunnels are in hard sandstone and granite, and are lined with concrete.

41. Is it as hard as the material at Otira or Bealey?—Harder, I should say.

42. *Mr. Davey.*] Can you tell us the average rate of wages earned by co-operative labourers in those tunnels?—They run about the same as the usual miner's wages. We used to fix the prices to give them the ruling rate of wages in the district. We always priced the work so that the return would come to the usual rate of wages in the district.

43. *Hon. Mr. Fraser.*] What would that be?—In tunnelling it would run about 10s. a day for a miner at that time, and 12s. for a bricklayer.

44. *Hon. Mr. R. McKenzie.*] What time are you referring to?—Say, ten years ago.

45. *Hon. Mr. Fraser.*] What is the rate now?—I could not tell you. I have not done pricing lately.

46. *Mr. Davey.*] You said that it was scarcely fair to compare the Arthur's Pass Tunnel with any of the tunnels you mentioned?—Yes.

47. Can you give the Committee any idea why you say that?—If you have ever been underground and you get in about a mile you have a different feeling to when you can feel the fresh air coming in from the mouth, and that affects work very considerably. All those very long tunnels that have been excavated have been difficult in respect of labour.

48. You mentioned one tunnel on the West Coast that was £45 a yard and another one £40: was that difference owing to the length?—I do not think you can deduce very much from these small tunnel-contracts. There is a difference here which is rather remarkable. In McLellan's one the driving is £19 and the lining £21, while in Maxwell and Mann's the driving is £16 10s. and the lining £23 10s.

49. *Hon. Mr. R. McKenzie.*] Is the lining the same thickness as at Arthur's Pass?—Yes, practically the same—12 in. That is about the price of the Arthur's Pass lining—£23 10s.—so they got as much for lining this tunnel as McLeans are getting for the big one.

50. Did they use rock-drills in those tunnels, do you know?—I do not think they did. They were going to get them, but did not.

51. *Mr. Okey.*] At those tunnels that you have quoted they had no special machinery, I suppose?—Machinery was used in some of the Midland Railway tunnels.

52. And you include the machinery in the cost?—We supplied the machinery; we always do with co-operative labour.

53. That would have to be added to the cost, then?—Yes, I suppose it would.

54. You could not give us any idea what the cost of the machinery would be?—No, I have not gone into it at all.

55. It would be a considerable item that would have to be added to the cost?—I do not think the machinery makes very much difference. It is a matter of speed, that is all.

56. You think you make up for the cost of the machinery in increased speed of working?—The only thing that the machinery does, as far as I can gather, is to increase the speed, but it does not reduce the cost.

57. *Hon. Mr. R. McKenzie.*] That has been the experience throughout the world, has it not?—Yes, I think so.

58. There is no economy in using rock-drills, except that you get through the work quicker?—That is so.

59. *Mr. Okey.*] The long run in this Otira Tunnel would make a difference, would it not?—That is what I say. You cannot compare it with any of our tunnels on account of its being five miles and a quarter long, whereas very few of ours are a mile.

60. Did you give the estimate or the contractors' price per yard?—The office estimate was £500,000 for the contract.

61. But how do they compare?—The quantities run about the same. There is very little difference between the contractors' quantities and the quantities taken out in the office. The prices were different, because we did not think the work was going to cost so much as it has.

62. *Hon. Mr. Fraser.*] You mean that you did not think the wages would be so high?—That has affected the whole thing. On the basis of the wages paid at the time £500,000 was a good price. But the output of the men and the wages basis are both different now.

63. Is the wage higher and the output less, or is the output higher and the wage less?—The wage is higher and the output is less.

64. *Mr. Okey.*] Could you give us an idea what Mr. McLean's contract works out at per yard?—The excavation runs out at about £37 5s. per lineal yard, and the lining at about £23 10s. per lineal yard. In that cost of excavation, engineering is included.

65. Can you give us any idea of the difficulty there is at Otira with labour?—I have not personally been at Otira Tunnel to look after the contract. I have been there, but I have not been looking after the contract.

66. Do you find with this class of work that the tendency is for the cost to increase?—There is no doubt about it that the cost is increasing. The figures that I have given you will show that the tendency is for it to increase. I do not think the men work as hard as they used to, for one thing.

67. Do you think a system of bonuses would encourage the men in any way?—That is a matter I should not care to express an opinion about. I think the fairest way is to let a contract. I believe in a contract for a big job like this.

68. As against co-operative labour?—I would prefer a straight-out contract.

69. *Mr. Reed.*] The Government estimate for the work was made in New Zealand, was it not?—Yes, in the Wellington office.

70. The officers making that estimate would have no experience to go on so far as New Zealand is concerned?—I do not understand you.

71. You said that the longest other tunnel in New Zealand was under a mile in length, and this is five miles?—Yes, except the Lyttelton Tunnel, which is a mile and three-quarters.

72. To get information sufficient to make an estimate, they would have to get statistics regarding works outside New Zealand?—Yes; they would get their information about long tunnels from other works.

73. The New Zealand experience would not qualify them to make an estimate for a tunnel of this size?—I would not say that exactly. They would get considerable help from studying statistics regarding other long tunnels in other countries.

74. Are there tunnels in other countries five miles long with a single line?—There are tunnels up to nine miles long.

75. But with single lines?—Oh, no. I do not think you will get any tunnel longer than five miles with only a single line. I do not know of any.

76. Do you think a serious error might have crept in in getting information regarding a double-line tunnel of that length and compiling an estimate for a single-line tunnel?—I think any trained engineer would be able to satisfy his mind on that point.

77. Do you think it is easier to work a two-line tunnel than a single-line tunnel, proportionately with the amount of spoil to be removed?—Oh, yes; the larger the tunnel the easier it is to carry the spoil out—up to a certain size, of course.

78. Are you satisfied with the estimate of £500,000 that was made originally by the Department?—Yes, I am.

79. *The Chairman.*] Under the conditions at that time?—I believe it was a fair estimate at that time.

80. *Mr. Reed.*] Are you of opinion that, had matters remained as they were at that time, that work could have been completed for £500,000?—We all thought so, and I have seen no reason to doubt it since.

81. Do you agree with Mr. McLean in his statement that it is going to cost £750,000 to complete that contract?—Well, he has got figures for it, so I do not know that I can dispute it.

82. Do you think there has been a change in the conditions of labour sufficient to warrant a difference of half as much again on the original estimate? £500,000 was the Department's estimate, and the contractors' experience shows that it will cost £750,000?—That is a very big thing to answer in a broad way like that. I do not think I can answer it.

83. Are you satisfied that the original estimate was a correct estimate, and that no error could have crept in in compiling it?—There was no error in the quantities of the stuff to come out, and the length it had to be run, and all that.

84. That, of course, could easily be ascertained, but how about the estimate of the practical working?—I am sure that the gentleman who made the estimate, Mr. P. Hay, used his best judgment. He was as thorough a man as ever stepped in New Zealand.

85. You do not think, then, that there could have been confusion between a one-line tunnel and a two-line tunnel in the minds of the Department and the contractors when this contract was entered into?—No, because all the tunnels in New Zealand are single-line tunnels. We have had some difficulties even with the mile-long tunnels that we have put through in New Zealand, and Mr. Hay was well acquainted with all the difficulties, because he was just on forty years in the service; he had been through the whole Public Works Department of New Zealand from the start, and knew all the circumstances and the difficulties experienced.

86. You must see that the length of the tunnel must greatly increase the difficulties with a single-line tunnel?—I said so at the start.

87. *Right Hon. Sir J. G. Ward.*] Do any of the tunnels concerning which you have given evidence compare, especially as to the nature of the material, with the Otira Tunnel, and, if so, which?—The Midland Railway tunnels are in similar country. We have one in the Manawatu

Gorge that is in exactly the same stuff. The Manawatu Gorge Tunnel, 15 ft. 6 in. by 12 ft. 6 in., was in clay slate. I have not got the length of it, but it cost £31 10s. per lineal yard, by contract.

88. Does the material through which the Manawatu Tunnel is driven compare with that at Otira?—It is exactly similar—clay slate rock.

89. In what year was the Manawatu Tunnel contracted for?—About 1890, I should say.

90. Were the conditions under which contract work was carried out at that time, as to cost of material and cost of labour, similar to what they have been during the currency of the Otira contract?—The cost of material would be much the same, but labour was very different at that time from what it is now.

91. Have you any idea what percentage more, or less, it would be then than now?—I should say, taking the output and the extra price into consideration, it would be nearly $1\frac{1}{2}$ now as against 1 then.

92. How does the cost per lineal foot in the case of the Manawatu Tunnel compare with the cost of the Otira Tunnel as far as it has been made?—It is just about half. The Manawatu Tunnel cost £31 10s. per yard, as against £60 15s. for the Otira.

93. Do you attribute a portion of that increase in cost that is shown by the comparison to the extra cost of labour in that period?—Yes.

94. What are the causes, in your opinion, of the increased cost comparing the present with that time?—The extra price of labour and the scarcity of labour, and the lesser amount of work done for a day's work.

95. Would the length of the Otira Tunnel as against the Manawatu Tunnel have anything to do with it?—Yes; the Manawatu is quite a short tunnel as compared with the Otira.

96. You are of opinion that the estimate of £500,000 made by the Department was a fair estimate at the time the contract was let?—Yes.

97. Have the conditions as to cost changed since the signing of the contract for the Otira Tunnel?—Oh, certainly. Labour has gone up in price, and effectiveness, too.

98. Could you, under the changed conditions, have carried out the construction of the Otira Tunnel at the estimate of the Department—£500,000?—That estimate was made on the supposition that there was sufficient qualified labour in the Dominion to carry it out. The experience of the contractors has been that they cannot get sufficient qualified labour in the Dominion at the present time. Their work has been hampered right along for want of a sufficient number of men to choose from and to carry on work in the proper way.

99. You recognize that there has been an alteration in the conditions in respect of cost of labour: would that have affected the estimate?—Undoubtedly.

100. There would have been an increase in the original estimate?—Undoubtedly; if labour had acted then as it has acted since, the estimate must have been increased.

101. If the Public Works Department now had to carry out the balance of that contract, could they, in your opinion, do it cheaper than the contractors?—I do not know that I am at liberty to speak.

102. I am only asking your opinion?—I do not know that I am at liberty to give it. I am only a servant. If I were told to carry it out I should do so, and if I were told to let the work by contract I should do that.

103. What is your opinion: if the Public Works Department had to carry that work out, could they do it at less per lineal foot than it has been costing the contractors?—We should have the same difficulty to encounter that they have had—want of men—and therefore one does not know what it is going to cost. If you are tied up by want of men you do not know what a job is going to cost.

104. You cannot give a definite answer?—No. If you can tell me what labour I can get and what price I can get it at, I can tell you what a work is going to cost.

105. *Hon. Mr. Fraser.*] It might be inferred that Mr. Vickerman's reluctance to answer that question was because his superiors did not wish him to do so. I can only say—and I say it as Minister of Public Works—that I fully expect Mr. Vickerman to answer to the best of his ability any question put to him in this room. There need be no restraint on his part. If you are asked a question, Mr. Vickerman, as to whether a thing can be done in one way cheaper than in another, then I say as Minister that I think you ought to answer it. You can answer it freely.

106. *Right Hon. Sir J. G. Ward.*] Might I ask again, then: Can you give us an opinion as to whether the Department, if they had to carry out the remaining work, could do it, under the present circumstances, at less cost per lineal foot than the present contractors?—With labour in its present state I should not be prepared to undertake to do it, personally.

107. What has been your general experience in connection with the carrying-out of tunnels for the Public Works Department—that is, for main railways in the country up to now: have you experienced any difficulty in carrying any of them through?—We have had a good deal of trouble at different places. At Karangahake, for instance, we started the tunnel on the co-operative contract system, and we had eventually to finish it up by day-labour.

108. As the result of that trouble, was the cost of that tunnel materially increased to the country?—Yes, it increased the cost. We would not let the work to them at the price they wanted. So we went on by day-labour, and it cost very nearly what they had wanted.

109. But it did cost less than they wanted?—Yes.

110. Does the cost per lineal foot of the tunnels that have been carried out under the Public Works Department in New Zealand, irrespective of whether they are double-track or single-track tunnels, compare unfavourably with, say, the Mont Cenis Tunnel?—I should say that our tunnels have been done, comparatively speaking, quite as economically as tunnels in other countries.

111. You are of opinion that we can do them quite as economically as other countries?—Oh, yes.

112. *Mr. Veitch.*] You say that you prefer the contract system to the co-operative system?—For a large job like this.

113. Is it not a fact that the figures you have given us this morning show clearly that the experience of the Department has been that co-operative jobs have proved cheaper than contract jobs?—I do not think so.

114. How do you reconcile that statement with the figures you have given us this morning?—I do not think the figures I gave you showed very much saving by the co-operative system. I can give you as low-priced a tunnel done by contract as any tunnel that has been driven. I refer to one done by Mr. McLean here, as long as he was in the hard ground. The Makarau contract was let to Mr. McLean, 627 yards at £18 10s. a lineal yard. That was supposed to be in sandstone and stand-up ground. But when he got into rotten clay mud the design of the tunnel had to be altered, and he was paid extra; but as long as he was in the hard ground the tunnel was done for £18 10s. a yard.

115. If the same amount of work had to be done in a level tunnel, instead of at a grade of 1 in 33, as at Otira, would it materially reduce the cost of doing the work?—It would make a slight difference, but not so very much; because, though at one end you have to haul, at the other you get down-grade traction.

116. *Hon. Mr. R. McKenzie.*] Can you tell us what wages the Department pay for men working in tunnels: I mean, what do the men earn—not day wages?—Anything from 10s. to 12s.

117. Can you give the Committee a fair average?—I do not know whether I have sufficient knowledge of what has been going on just lately.

118. Has the Department ever had any serious trouble with men working in tunnels?—We have had troubles.

119. Any serious trouble, I mean?—We had trouble in the Karangahake Tunnel.

120. Has the Department had any serious trouble with the men since the Arthur's Pass contract was let?—I am not aware of anything special at the moment, unless you can recall it to me.

121. Have you experienced any difficulty in getting the necessary number of men to carry on the tunnel works throughout the country?—We had some trouble at Whangamomona—trouble to get the men, and to get them to go on at all. We had to give them high rates.

122. Do you know what the difference was from what they were getting before?—I think it came to nearly half as much again.

123. Are you sure?—Mr. Blow would be able to give it to you.

124. Now, Government officers, in estimating the cost of works of this nature, are guided by the experience gained in similar tunnels in other parts of the world?—Yes.

125. Is there any difficulty in making an estimate as long as you know the wages and cost of materials in other countries, other conditions being equal?—You want to know what class of men you are going to have. Men in different countries work differently.

126. It is all a question of wages?—But the output is different.

127. Is there anything in the conditions that cannot be estimated, approximately?—I would not say there is. You can always form an estimate if you know anything about the work yourself.

128. You say it is more expensive to drive the Arthur's Pass Tunnel than the larger double-line tunnels in Europe or America?—Yes, per item.

129. I mean per lineal yard?—Oh, no, not per lineal yard. I said per item—per cubic yard.

130. Does that apply to the lining?—Yes.

131. Does it apply to the timbering?—The timbering would be heavier.

132. What would be the increase in the larger tunnel for timbering?—The timbering would support a very much greater number of cubic yards and be divided over them.

133. Would the timbering of the larger tunnel cost double the amount?—Not per cubic yard excavated. I do not think you would find it cost very much more than with us.

134. Do you mean to say that you can carry a 25 ft. tunnel roof on the same strength of timbering as a 14 ft. one?—A 25 ft. tunnel would be 25 ft. wide, and you would have about three times the cubic contents in that tunnel; and if you divide the timber over the cubic contents, you would find that it would not come to much more than half of what it does in our tunnels.

135. But the cost of timbering would be at least equal in the large tunnel to what it was in the small one?—Just so, but you would spread it over a larger area of stuff.

136. Would the cost of lining be the same?—I do not think there would be a great deal of difference, but it would be in favour of the bigger tunnel.

137. So that the whole difference would be in the cost of excavation?—That is so.

138. And the cost of running the spoil out?—That would be slightly cheaper in a big tunnel.

139. What would you consider the difference in cost for running the material out?—You would be in twice as good a position in a big tunnel.

140. How much does it cost us to run the material a distance of a mile, say, in the Arthur's Pass Tunnel?—I could not answer that.

141. Do you know what length in the Arthur's Pass Tunnel the headings are driven at both ends?—Yes. On the 4th July the bottom heading was in 1 mile 68 chains 87 links at the Otira end, and 27 chains 90 links at the Bealey end, making a total distance of 2 miles 16 chains 77 links.

142. Give us the top heading?—The top heading was in 1 mile 47 chains 27 links at the Otira end, and 24 chains 28 links at the Bealey end, giving a total of 1 mile 71 chains 55 links.

143. Will you give us the distance widened out?—Yes, to full size: 1 mile 35 chains 89 links at the Otira end, and 23 chains 65 links at the Bealey end, giving a total of 1 mile 59 chains 54 links. The concrete lining: 1 mile 30 chains 49 links at the Otira end, and 23 chains 65 links at the Bealey end, giving a total of 1 mile 54 chains 14 links completed.

144. What proportion of the total work will that represent?—I took the proportion out in decimals: the bottom heading, 0·42; top heading, 0·36; excavation, 0·33; concreting, 0·32.

145. *The Chairman.*] Not one-third?—It is practically a third of the work, taking them altogether.

146. *Hon. Mr. R. McKenzie*] Do you know how much of the contract-money has been paid?—Yes; the return was made out on the 1st August and is up to the 31st July. At that date there had been £249,358 paid.

147. How much of that amount has been paid for plant?—£58,925.

148. That leaves still available for finishing the work?—The difference between that sum and the contract price of £599,794.

149. You have to take the outside work off?—Yes. There is £31,777 of outside work: that leaves £568,000 for the tunnel.

150. Take £249,358 and £31,777 from the £599,794, and it leaves £319,000-odd, does it not?—That is about it.

151. Do you think it possible, under ordinary conditions, such as the Department has experienced in its other tunnel work, to finish this tunnel with the amount of money now available?—No.

152. How much more do you think it should cost?—We had it that about £150,000 is the estimate. I cannot see anything else for it if labour is going to be like it is.

153. In connection with the Whangamomona Tunnel and the trouble you say existed there, was not the heading through before the trouble started?—Yes.

154. Was not the excavation of the tunnel practically completed before the trouble started?—No, it was in the final excavation that the trouble started.

155. How much of the excavation was to be done?—They had the bottom heading through, and they had to enlarge from the bottom heading out.

156. Was there not a considerable proportion of the enlargement finished, and the lining too?—Yes, at each end; but there was the middle to be finished up. I could tell you exactly how much of the tunnel remained to be finished when this trouble occurred if I got a statement properly made out.

157. Did the men discontinue work there, do you know?—They did. They struck, and they were put on again by the Engineer at a higher rate.

158. How long were they off work?—I do not know. The Engineer put them on again without getting authority from Wellington.

159. Are you sure of that?—I understand so. It was so on the papers, any way.

160. Are you sure he had no authority?—I could not say what authority you gave him.

161. Do you know how long it was after the contract was let before work was started at the Otira end of the Arthur's Pass Tunnel—I mean, the driving of the heading?—The driving of the heading was started about January, 1908.

162. And when was the contract let?—On the 1st August, 1907.

163. Can you tell us when the driving of the heading was started at the Bealey end?—I cannot from memory. It was a good deal later.

164. Would it be a year, or two years?—It would be nearer two years, I suppose.

165. Do you know any reason why those headings should not have been started within a month or two of the contract being let?—Only the reason that you mentioned just now—that Mr. McLean went to England to see about tunnel arrangements.

166. Was that a good reason why they should not be started?—He might have discovered something in England that would have greatly facilitated work; he waited until he had visited England.

167. What do you mean by saying he might have discovered something?—It was his first long tunnel, I suppose, and he went to some of the long tunnels of the world to see how the work was done.

168. Do you think the length of the tunnel affected the starting of the work at each end in any way?—I should have been inclined to do what Mr. McLean did. If I thought of going to England I should go there first and see what I could find out.

169. Have you not already told the Committee that there was no economy in using rock-drills in tunnels, except that the work was done faster?—I have.

170. Could not those headings have been driven, to the extent of, say, 20 chains at each end, by hand-drilling as cheaply as by rock-drills?—Yes, I should think so. I should think he could have gone on with hand labour.

171. Do you think there is any special reason, then, why the Bealey heading should not have been started till about two years after the contract was let?—That was largely on account of the want of men, I think. Men were not plentiful.

172. You say that you think so: do you know as a fact?—I do not know it for a fact, but I venture to say that that had a good deal to do with it.

173. Do you think this work could be done cheaper if the two lower headings were connected?—You could not wait to do that before you went on with the other work.

174. Could you not drive the heading from the Bealey end and let the rest of the work stand?—It would not pay you to drive the heading right through and not do the other work at the same time, because you have not got the time.

175. Do you know how much widening has been done at the Bealey end during the last five years?—I think the Bealey end has been left owing to shortage of men; they have concentrated them at the other end.

176. If they drove the heading through, would they not get rid of the expense of pumping air and water?—The heading is very small to drive through that distance.

177. They can make it any size they like, can they not?—Then why not drive the whole tunnel?

178. Would it not save them a good deal of money if they got rid of the pumping and forcing air into the tunnel?—My opinion is that you could not wait to drive a five-mile heading.

179. Do you know whether, when they are driving the heading at the Bealey end, they have to stop all other work there—concreting and widening?—I was not aware of it. I do not know much about it.

180. If that is the case, do you not think it would be better for them to drive the heading right through and let the other work stand?—I am not prepared to believe that they have to stop all other work while they drive the heading.

181. If I tell you that that is the statement that Mr. McLean put before the Committee, will you believe it?—I will if you say so. But I do not see the necessity for their doing so.

182. You referred to the tunnel on the Manawatu Gorge line, and said that that was let about 1890?—It would be before 1890—while the contract system prevailed.

183. It was under construction, was it, in 1890?—I think about that time.

184. Did you say that the cost of material and labour was much less than now?—Cement would not be any cheaper then. I said that labour was cheaper then.

185. Do you know the rates of wages that were paid by Palliser and Jones on that contract?—No; I was not there.

186. Then, how do you know that labour was cheaper?—Because it was cheaper all over the country.

187. Was cement cheaper or dearer then than it is now?—It would be about the same. If you bought whole cargoes at that time you could get it at a reasonable price.

188. Do you think the cost of shingle for the Manawatu Gorge tunnels was less or more than at Arthur's Pass?—I really do not know what they used for the Manawatu Tunnel—whether it was clay, slate, or gravel from the river.

189. Suppose they used gravel from the river?—It should not have been any dearer than at the Bealey.

190. Do you know how they had to get it up?—I suppose they used a winding-engine.

191. You know the conditions at the Bealey and at Otira?—Yes.

192. The gravel is practically alongside?—Yes.

193. Do you know whether the rate of wages for miners on the West Coast has gone up since 1908, the year the tunnel was started?—Yes, it has gone up.

194. Can you tell us how much?—Men are a shilling or so dearer now than they were.

195. You are satisfied on that point, are you?—Well, we have had to pay more.

196. This is a return of wages that was handed in by Mr. McLean [document handed to witness]: you see the wages that are paid?—Yes.

197. The ordinary rate for most of the men employed in this tunnel was 10s. 6d. a day?—Yes, in the tunnel.

198. And outside?—10s.

199. Do you think those are any higher than the rates that were paid for similar work on the Coast in 1908?—There are two rates set down here, and there is 1s. 6d. difference.

200. The bulk of the men working on this job received 10s. and 10s. 6d., according to that statement?—That is when the contract started. The 10s. men are getting 11s. now, apparently.

201. Do you know whether the men working in the mines at Reefton were getting 11s. in 1908?—I do not.

202. Then, how do you know that wages have gone up?—I know that our men wanted another 1s. a day on the Coast—those on railway-work.

203. Did you give it to them?—They practically got it, I believe.

204. When?—About the time the other wages went up.

205. When was that?—A year ago, perhaps.

206. Is not the rate that you pay your wagesmen on railway-works on the Coast now 10s.?—I could not say.

207. Then how do you say it has gone up? Can you give us any expression of opinion as to whether the Government would be likely to carry this work out as cheaply as a contractor?—It would all depend on how the Government intended to carry it out.

208. In the same way, say, as you do other tunnels?—If the Government let the work in small contracts they could get along very well—so-much a yard for excavating, and so-much a yard for concreting, and so on.

209. That is the basis on which you carry on your co-operative tunnel contracts now, is it not?—That is the principle you would have to work on if we were to carry this work out.

210. Do you think the Department could do it in that way as cheaply as a contractor?—Not with a tunnel of this length. I think such a tunnel requires special management. You can work a small tunnel in that way, because you can isolate the men.

211. But do you not think it possible for the Department to get special managers just the same as a contractor?—I believe you could let a section of bricking-up at so-much a yard to one party, and concreting to another party, and so on. But it would be a very big job, and I do not want to have to undertake it. I would far rather you let a contract and have the contractor do the worrying.

212. Do you know what class of men the Government have employed for a few years back in tunnel-works throughout the country?—Yes, we have had good men.

213. Do you think they are as good as a contractor gets for this work?—They are sometimes the very same men.

214. You have had some very expert men?—Yes, very good men.

215. Men quite capable of taking charge of this work under the supervision of engineers?—They would be bosses of shifts, and that sort of thing, but they would not take charge of the tunnel from end to end. You would have to get some competent manager, as well as an engineer.

216. Admitting those conditions, do you think it possible for the Government to carry that work out as cheaply as a contractor?—I do not think there would be much difference in the cost. It all depends on what profit a contractor would want: that is the whole point.

217. Would not the interest he would have to pay for financing affect it?—Yes, that might affect it. The actual work itself, I suppose, is not going to cost more.

218. *Mr. Seddon.*] You referred to two tunnels on the Westport line that were done by contract, and said they were harder to drive than the Otira Tunnel?—Harder rock.

219. Did the contractors lose by those works?—Not that I am aware of.

220. And the contract prices were £40 and £45 per lineal yard?—Yes.

221. You referred to a long tunnel and said that a different feeling comes over you when you are a mile in?—Yes.

222. Do you mean that there is not sufficient fresh air for the workmen when you are a mile in? What is that different feeling?—You have that feeling.

223. If there is plenty of ventilation, that feeling would not come over the workmen?—Possibly not.

224. You have not been in the Otira Tunnel, have you?—Not lately. I was in when the heading was first started.

225. How far was it in then?—Ten chains, perhaps.

226. When you spoke about that different feeling, were you referring to the disinclination of men to go in any distance?—I have been into a good many tunnels being made, and they are in a dirty state, and you wonder where you are sometimes.

227. Did you mean to imply that there was a disinclination on the part of men to go in when the tunnel was in a distance?—They do not like long tunnels. They like to be near the outside, as a rule.

228. Regarding the works that have been carried on by your Department along the Cass and the Broken River, have you always been able to get a sufficient number of men on those works?—I am hardly in a position to say. I know that at times we have been short, and at times there have been too many. It varies according to what other work is going on.

229. Are the hands employed good workmen?—We have fair workmen there. The Canterbury men are very good men.

230. The Cass works now are quite near Bealey Flat, are they not?—Yes, they are getting right up.

231. Is there any difficulty in getting men to go up there?—They have not been so plentiful this winter: it has been too cold and wet.

232. Can you get plenty of men when the spring and summer come?—You get them in the spring, but harvesting comes on after Christmas, and you get short again.

233. The men that you get on those works are good enough to do tunnelling-work, are they not?—You want special hands for the actual drill-work, and so on, in a tunnel; but you can employ a lot of good labour in moving things about, and that sort of thing.

234. These men are good enough to do that, are they?—Yes, if they are worked in.

235. In your answers to Mr. McKenzie you did not tell the Committee whether the Department could carry on a big job like this and itself employ the special management that you say is needed?—Oh, yes, the Department are able to do that.

236. They could soon get a staff together?—I could not say soon, but they are able to do it.

237. Has it been brought under your notice that at the Bealey end and the Otira end there are plants for generating electricity?—Yes.

238. Have you any idea of the value of those plants, or what would be their value if the Government were to take them over?—They would only be suitable for what they are being used for now.

239. You could not, for instance, use them for electrifying the railway?—It is not proposed to use them; they are not permanent enough, either. I have not gone into the question. It is a matter that Mr. Parry, the Electrical Engineer, is taking up. He is connecting that with the Lake Coleridge scheme, which will be available, and no doubt will be used.

240. We want to get an assessment of the value of the plant at the time the contract will be finished. You have no idea what the value will be?—I do not think you can take in the value of the two plants there. We have looked at them. The Engineer-in-Chief has been getting information about a plant that could be got there from the Rolleston River, leading the water by a race over the Otira end of the tunnel and getting a power-station there. But he is not prepared to go on with these small arrangements that are there now, because they are subject to being frozen in winter and to drought in summer.

241. There is no system of storing electricity?—You cannot store electricity to pay.

242. *Mr. Davey.*] You agreed that if there was a shortage of labour it would add considerably to the expense of tunnelling?—I said so.

243. We have it in evidence that the contractors like to have nine men at the heading as a full complement?—Yes.

244. We have it, too, that they have had to work with one-half that number. What, approximately, do you think would be the loss to the contractors in efficiency from such a shortage of labour in this tunnel?—The contractor has all his management expenses, and all his outside arrangements got up to run nine men. If he is working with only half those men he is only getting half the result. He is limited to time, you see, and it takes nine men to get out the stuff which has to be got out if he is to get through with his contract in the time. If he has only got four men he is losing in both ways: he is not getting on at the pace he ought to get on at, and he has a penalty to look forward to.

245. *Mr. Okey.*] You want experienced men to run this machinery?—Yes, you want competent men.

246. *Hon. Mr. R. McKenzie.*] Is it not machinememen that you want to be experienced?—All the miners want to be experienced.

247. *Mr. Seddon.*] They soon acquire that experience, do they not?—Yes.

248. *Mr. Nosworthy.*] In these smaller tunnels that have been constructed by the Government on the co-operative system, has there been as good machinery used as McLean Bros. are using in the present tunnel?—I would not say it has been so good, but there was a very good drilling plant for the Midland Railway tunnels.

249. *Hon. Mr. R. McKenzie.*] Is it not the same class of machinery only on a smaller scale?—I think it is the same class—air-driven drills.

250. *Hon. Mr. Fraser.*] Were you at any time in charge of the works at the Otira Tunnel?—No.

251. Therefore, in your answers to Mr. McKenzie, you were not speaking from actual experience of that particular work, but from your general knowledge of what would be the case, and from your experience on other works?—Yes.

252. On questions of detail there are other officers who could give more precise information than you?—Certainly, regarding local details. My information is simply got in this way: I am in the Head Office, and I see what happens.

253. *The Chairman.*] Plant which has cost £73,000 Mr. McLean estimates to be worth £5,000 at the end of the job. Could you give us any information as to the depreciation of the plant to that extent?—Is that at the end of fifteen years? At the present time there is one-third of the tunnel done, and it has taken five years; so that would mean fifteen years for the whole job. At the end of fifteen years I should say the plant would be worn out.

254. *Hon. Mr. R. McKenzie.*] You examine the monthly reports that are sent in by the Resident Engineer in connection with this work?—I generally do.

255. So you are fairly familiar with the progress and the cost of everything as the work proceeds?—I am more familiar with the progress than with the cost. The money certificates do not come in to us, as a rule.

256. You mentioned something about the Makarau Tunnel?—Yes.

257. Will you explain the cause of the excessive cost of putting that tunnel through?—The tunnel was supposed to go through solid ground when the work was undertaken. We went on for about 8 chains in good hard sandstone and papa country, and then we struck a fault. It was like the face of a cliff on the sea-beach. We then ran into a deposit of mud. Apparently it was hard and required blasting out, but as soon as we opened it the air and the water made it run. We found then that the side walls were giving way, and we had to start and timber. It was a case of putting in a heavy invert and thickening the lining. We went on like that for some time, until one Christmas, when the tunnel was left for a week or two. This slackening process had evidently gone further than we expected, and there was a run, and it went right up to the surface.

258. There is no comparison between the conditions there and at Arthur's Pass?—None whatever.

259. Those tunnels that you referred to on the Westport-Inangahua section—can you tell us whether the contracts for those tunnels were taken at less than the Government Engineer's estimates or more?—More.

260. In every case?—Yes. The Government estimate was about £29 per lineal yard.

261. *Mr. McLean.*] Have you any knowledge of the cost of European tunnels, or Alpine tunnels, of the same length and dimensions as the Arthur's Pass Tunnel? You quoted the Mont Ceniz Tunnel, which I understand is nine miles long and is a double-track tunnel?—I have no particulars except those that I gave regarding Mont Ceniz, which is on this list of tunnels that I am handing in.

262. *The Chairman.*] You know of no five-mile single-line tunnels in Europe?—I do not.

263. *Hon. Mr. R. McKenzie.*] Do you know of any single-line tunnels in Australia?—I do not know the Australian tunnels.

264. *Mr. McLean.*] You were present at a conference that was held between myself and the men at the initiation of the work: do you remember a statement made by a man named Malloy that we had got £100,000 more than the Government estimate for this work, and that they were going to have it, or share in it?—I was at the Otira Tunnel—it was a Sunday, I think—and there was a special meeting got up amongst the men. They asked to meet Mr. McLean. This man Malloy—from the Reefton Miners' Union, I think it was—was there leading the men. He addressed you in the afternoon, and made a statement to this effect, following on from something else: "We have got a copy of the Government estimate from Wellington, and we know what they thought they could do the tunnel for, and we now see that you have got £100,000 over and above that estimate, which no doubt you look on as your profits; and we hope now to share with

you in those profits." He went on then to explain a lot of things that the men wanted. As you say, he deliberately came and made use of the information he had obtained to try to force you to raise the price of labour.

265. *Mr. Okey.*] Were these estimates made public?—I think it is the usual thing to make known the Government estimate.

266. *Hon. Mr. R. McKenzie.*] Is it a fact that Mr. Bogue's estimate and details of every estimate in connection with this work were published in a Public Works Statement some years ago, and are now on record in the Appendices to the Journals of the House?—I do not know. I know that Malloy told us he had written to Wellington and got the information. They had a copy of the specification as well, which I was rather surprised to see in their hands. It had come from Wellington.

267. *Right Hon. Sir J. G. Ward.*] They would not get that from the Department?—He said they had written up and got it from Wellington. I do not know from whom they had got it. There would have been no difficulty in getting the specification if he had applied for it, because it is a public document.

268. *The Chairman.*] You were not surprised that he had the information which he had?—I was surprised that he had the estimate for the tunnel, but not surprised to see the specification. It was more the use he made of it than anything else. [Witness handed in several statements.]

MURDOCH MCLEAN recalled. (No. 5.)

1. *Mr. Davey.*] A suggestion has been made that some undue delay took place in starting work at the tunnel, especially at the Bealey end. Can you give us any explanation of the statement that you did not commence the headings as soon as you could?—We started the work almost as early as it was possible to start it. In the first place, there was a fairly large cutting at the Otira end that required to be made. There was also a connection to be made between the bridge and the starting of the contract. A large bank had to be made. As soon as we were able to get right into the face we started with hammer and drills. But it was not for some four or five months that we were able to get the cutting out and start with the hammer and drills. When the then Premier, Sir Joseph Ward, went up to open the tunnel, the work was in some chain or chain and a half, and for the explosion that took place the hole was driven by an ordinary hammer and drill.

2. You did your best?—There was no undue delay in starting at either end of the tunnel. At the Bealey Flat end was a heavy rock cutting extending quite a long distance. Men were somewhat scarce at that time. There was no two years' delay or anything of that sort before the heading was started. I will give you the exact date of starting the Bealey end heading and the exact date of starting the Bealey end cutting, and the Otira end cutting and heading as well.

3. *Hon. Mr. R. McKenzie.*] Was the bridge over the Rolleston River at the Otira end of the tunnel built before you started?—It was completed.

4. There is an embankment between the tunnel and the end of the bridge, is there not?—Yes.

5. All the spoil that came out of the tunnel you put into this embankment?—That is right.

6. So there was nothing to delay starting the heading?—Not after the cutting was taken out.

7. What quantity of cutting was there at the Otira end?—A fair amount. I will give you the yardage at both ends.

8. You put a temporary bridge over the Bealey, did you not?—Yes.

MARK FAGAN, Secretary and Workmen's Inspector for the Inangahua Miners' Union, examined. (No. 6.)

1. *The Chairman.*] Have you any statement that you wish to make?—I have no statement to make. I have not been in touch with Mr. McLean for something like three years. We are the only union that has ever had an agreement with Mr. McLean—that is, a collective agreement concerning those in the tunnel—and I thought I was called to-day probably to answer questions in connection with that agreement. I am prepared to answer questions, but I have no statement about Mr. McLean or his tunnel. I have not been in the tunnel for about three years. [Copies of agreement produced.]

2. *Mr. Seddon.*] Did you at any time have a conference with Mr. McLean?—Yes.

3. What was the reason for it?—It was because of the strike that took place there. The men were out fourteen or sixteen days. They were members of our union.

4. You went up to represent the union?—I went up and met Mr. McLean, and we succeeded in fixing the matter up, and I went back to work again.

5. How long did this conference take?—We may have been about three or three hours and a half at Mr. McLean's place conferring.

6. Mr. McLean agreed to your request, did he?—We had Mr. Halley, the Conciliation Commissioner, assisting us, and a compromise was effected, which was satisfactory to both parties.

7. How long ago was that?—About three years ago last month.

8. Was there any other conference between you and Mr. McLean?—That was the only occasion, I believe, on which I met him. It was shortly after that that we disbanded our branch of the Miners' Union at Otira.

9. And afterwards the workers at Otira came under another branch: did they form a union of their own?—After that they joined what is known as the West Coast Workers' Union, and the men working in the tunnel for Mr. McLean have belonged ever since to that union.

10. While you were connected with them did the men at Otira complain about any of the conditions?—Yes. All the time I was connected with the Otira branch there were complaints—chiefly through men working more than six hours in wet places. That seemed to be the chief point in dispute. And the sanitary arrangements in the tunnel did not seem to suit the men; they were continually complaining about them.

11. When you brought these matters under the notice of Mr. McLean he immediately gave them attention?—I never brought them under his notice.

12. What were you speaking from, then?—Just what took place at the meetings. This strike took place two days after I was elected secretary of the union, and I attended a couple of meetings at Otira afterwards, and we decided to disband our branch there; so I only met Mr. McLean once. I heard many complaints at the union meetings while I was going to Otira. I was there three times altogether, and the chief causes of complaint seemed to be the sanitary arrangements in the tunnel, the fact that men were working too long in wet places, and the ventilation—the dynamite-smoke hanging too long.

13. Have these things been rectified since you brought them under the notice of Mr. McLean?—I never brought them under his notice.

14. But when they were brought under his notice?—I cannot speak with any knowledge of that, because I never brought them under Mr. McLean's notice. The trouble was that this work was under the Public Contracts Act and not under the Mining Act, and we realized that we could not get any redress.

15. You have asked to have this work brought under the Mining Act?—Yes.

16. How did you endeavour to get it brought under the Mining Act?—By deputations to Parliament. We have mentioned it several times in deputations.

17. What representations were made? Were they deputations to Ministers?—Yes. I believe we went to Mr. McKenzie on one occasion when he was Minister of Mines.

18. The object you had would be to get the bank-to-bank privilege, would it not?—That was one reason why. Another was in connection with the sanitary arrangements and the ventilation of the tunnel. If an Inspector of Mines were going there and inspecting, we should be able to have the same conditions there as at mines.

19. What was the complaint about the ventilation—that there was not sufficient ventilation?—About the dynamite-smoke hanging.

20. How could that be avoided?—We suggested a suction fan. In justice to Mr. McLean I should say that I have heard that that has been rectified since. At the time I was there those were the complaints that were coming in.

21. What about the sanitary arrangements—are they better?—I am given to understand that they are as they were before, with this exception, that there is more water in the tunnel and the refuse is washed out. But, to the best of my belief, there is not a sanitary convenience in the tunnel to-day.

22. *The Chairman.*] You worked in the tunnel up to what time?—I never worked there. I have been in the tunnel only once.

23. Can you say whether the men do not give the same amount of work as they get farther into the hill, because of the length of the tunnel and the general conditions: I am speaking of tunnel-work?—Speaking as a miner—and I have been about seventeen years underground altogether—I should say that that would not make any difference, provided the conditions were made good. There is no reason why a man should not do just as much work three miles in as near the open air—that is, if the conditions are good.

24. *Mr. McLean.*] Why did you disband the union at Otira?—The chief reason was that it was a hundred miles from Reefton, and at that distance we could not manage the branch with that satisfaction we should desire. Linked with that reason was the number of accidents in the tunnel, which were a drain upon our funds. At that time we used to pay £1 a week out of the funds to a member who got injured at his employment, and the accidents at Otira were so frequent that we were very nearly going bankrupt. For £4, £5, or £6 coming from Otira fortnightly, we were sometimes sending £35 and £40 back.

25. Did you discover that the accidents were always genuine—that the money paid was genuinely due?—On all but one occasion I had not any reason to doubt. There was one occasion when a claim was made and the man was not entitled to anything.

26. Did you have any suspicion that claims should not be paid?—Yes, I did.

27. Was not that the chief reason that you disbanded?—I said at the opening that we were a hundred miles away and could not give the branch that attention we should have liked to give it.

28. You were in the tunnel yourself, were you?—I was there once.

29. What were the sanitary arrangements when you were there?—There were none at all.

30. What length of tunnel was driven then?—I should say, something over half a mile.

31. In your experience of underground work, do you not find it always the case that there is—and must be—a certain amount of inconvenience from the fumes of explosives?—A certain amount, but that certain amount could be greatly minimized by adequate ventilation.

32. Is not there a certain amount of inconvenience in every mine where explosives are used on account of the fumes?—It always takes some time for the smoke to clear away.

33. Is there not a considerable amount of inconvenience after an explosion in any mine?—The inconvenience depends upon the ventilation. There will always be some, but in a place that is adequately ventilated the fumes will not hang so long.

34. How long, in your experience, is it, after an explosion of a dozen holes or more, before you can get back to work in the face?—I have worked in places where you could get back in five minutes, and others where you could not get back for two hours.

35. I mean, with ten or twelve holes exploded?—I have known places where the smoke would clear away in a few minutes, and other places where you could not get back for two hours.

36. Take the Otira Tunnel: the heaviest explosions are in the heading. Have you worked under conditions of that kind, where there is 50 lb. of gelignite exploded in one charge?—I have worked in railway tunnels.

37. Where 50 lb. is exploded at one charge?—That makes a lot of fracture round the holes, and I want to say that it frequently happens that from lack of supervision, or want of method, or from having an inexperienced workman or inexperienced foreman, heaps of dynamite is burnt that should not be used at all, and fumes caused unnecessarily. It frequently happened in the Otira Tunnel that more dynamite was used than should have been. It is possible for a fracture to burn if too much dynamite is used.

38. Where the exigencies of the case actually required the explosion and there were experienced men in charge of the work, would it be possible to get back to the face in anything like five or ten minutes?—I would not say that it would in a bottom heading.

39. No matter what the ventilation was?—It would take five or ten minutes in any place. If the ventilation was not adequate it might take an hour or an hour and a half.

40. In your opinion, as far as the actual burning of gelignite or dynamite goes, it all depends on the experience of the men in charge, and then the amount of fumes depends on the quantity of explosive that is used?—Yes, and the ventilation.

41. Is it possible, in your opinion, to ventilate the heading at the Otira Tunnel so as to clear away the fumes of an explosion of the kind I have mentioned in five or ten minutes?—I do not see any reason why the smoke should not be cleared away in ten minutes.

42. *Hon. Mr. R. McKenzie.*] Will you tell us the volume of air per man per minute that you would consider adequate ventilation for the number of men working in the tunnel, and to clear the air of fumes in ten minutes or a quarter of an hour at the face?—I should want to go into figures. I should want to know the number of men and the quantity of smoke.

43. What is the allowance under the Mining Act?—100 ft. per man per minute.

44. Is that sufficient to supply the men reasonably?—No. 100 ft. per man per minute passing through a place is a very small volume indeed. It should be the minimum always.

45. You cannot give us any idea of the quantity that is required in the Otira Tunnel?—In measurement, no; but I would say that a powerful exhaust fan might be installed that could be used only for that purpose in the bottom heading every time a shot was fired and there was an immense amount of smoke. The fan should be set in motion at such times, and by sucking the smoke up quickly it would cause a circuit, and cause an immense amount more air to come in at the inlet.

46. Are the men working in the tunnel at present connected with the Miners' Federation?—They are a unit of the Federation. About four men working there now are still members of our union. We disbanded the branch there.

47. But not as a body?—No.

48. Do you know whether they have a union there of their own—a branch of any union?—I would not call it a branch.

49. Is there a union of any kind?—Yes, there is a West Coast Workers' Union. It spreads over an area of probably 150 miles, from the Cass right round the coast.

50. Can you tell us what the rate of wages is that is paid for underground work in mines and tunnels on the West Coast as a rule?—Yes. The Reefton wage is 10s. 6d., and 11s. for machine work. At No. 2 State mine it is about 11s. and 11s. 6d. a shift.

51. What is the wage for men working outside doing such work as shovelling gravel?—10s. a day is considered the regular wage. You never hear of a man being paid less.

52. Do you know whether the men working in the tunnel at present work the full eight hours a shift in dry places?—I should say that is quite possible, because they have not got the bank-to-bank clause.

53. You cannot say definitely?—No. They are in further now than they were when I was there.

54. Can you tell us whether they go to their work and back in their own time or in the contractor's time?—They do it in their own time one way, I believe.

55. *Right Hon. Sir J. G. Ward.*] Is this agreement, dated the 19th December, 1908, and signed by Judge Sim, the agreement that is in existence now between the miners working at Otira and the contractors?—No. There is no agreement now. That agreement expired, and Mr. McLean has since been making his own arrangements.

56. Are the wages paid higher than those set out in that award?—Mr. McLean is paying higher wages now than he was paying at that time.

57. *Hon. Mr. R. McKenzie.*] Do you think it possible to get a sufficient number of men to man that work fully, at a fair and reasonable rate of wages?—Yes, if the conditions are made good in the tunnel I do not see any reason why there should not always be plenty of men there to do the work. My reason for saying that is that at the Reefton mines, just a few miles away, there is never any scarcity of labour. Such mines as the Big River and the Blackwater, situated in almost inaccessible places, pay lower wages than Mr. McLean, and they can always get men to do the work.

58. *Hon. Mr. Fraser.*] Can you speak from your own knowledge as to whether the ventilation is good or not at the Otira Tunnel, and as to the other conditions that you refer to?—No; I am basing my statement on this: that there are hundreds of Mr. McLean's ex-employees passing through my hands.

59. You are not speaking from your own knowledge, either as to the conditions or as to the air: it is merely from what you have heard rumoured?—It amounts to more than rumour when you are handling hundreds of men each year who have left there and tell you why they have left.

60. On the question of wages, do you mean to infer that the wages Mr. McLean gives are not good enough to induce men to go to work there?—I say that if the conditions were made good they are.

61. I am talking about wages only just now?—At that place now, under present conditions, he will never get men to stop. Some of the men will tell you, as the reason why they left, that the acetylene light affected their eyes; some that working eight hours a day in a wet place was too much; others that there was too much dynamite-smoke; others, too much water. But this seems to be the chief ground of complaint—that it is a bleak, cold place to live in, and they have to work seven days a week, because it takes them all day on Sunday to get sufficient wood to keep them warm. It is not a cheerful place to live in. I say that if the conditions were made good and cheerful there is no reason why Mr. McLean should not get plenty of men.

62. It is the conditions of life there and the conditions under which the men work, rather than the question of wages, that induces men to leave and go elsewhere: is that what you mean?—That is it. I believe it is the conditions rather than the wages.

63. *Hon. Mr. R. McKenzie.*] You are a member of the executive of the Miners' Federation, are you not?—Yes.

64. Did you get this information in connection with the Arthur's Pass Tunnel contract in your official capacity either as a member of that executive or as a member of the executive of the Reefton Miners' Union—I mean, the complaints from the men?—In my capacity as secretary of the Reefton Miners' Union, not as a member of the executive of the Federation. I have had no official communication from the Federation in connection with the Otira Tunnel at all.

65. Those complaints, therefore, have been made to you officially as secretary of the Miners' Union at Reefton?—Yes.

66. So it was not hearsay?—No. I have been urged at meetings to assist the West Coast Workers' Union to endeavour to better the conditions there—urged by men who have been at the tunnel and have come to Reefton to work.

67. *The Chairman.*] Do I understand you to say that the men leave Otira and work for a less wage than is paid at the tunnel?—Yes, they willingly work for less wages under better conditions. The mines at Reefton are better to work in than the Otira Tunnel.

68. *Mr. Veitch.*] I understood you to say that the men working in the Otira Tunnel do not work under the provisions of the Mining Act: is that so?—They work under the provisions of the Public Contracts Act.

69. If this work were brought under the provisions of the Mining Act would that have the effect of bettering the conditions of the men?—Undoubtedly, in my opinion.

70. Would you give it as your opinion that that is probably one of the reasons why the men prefer to work in other places?—Yes.

71. What do you call adequate ventilation?—When I say that a place is inadequately ventilated I mean that there are dynamite-fumes hanging about too long after an explosion.

72. You are working up a grade, are you not, in taking stuff out of the tunnel?—Yes.

73. Would that be a reason why extra ventilating facilities should be provided?—I should say that if you had a suction fan powerful enough, it would not matter if you were going up-grade.

74. Mr. McLean has given it as his opinion that certain trades-union officers in that district have done what they could to prevent men coming to work for him: do you know anything of that?—To the best of my belief that is incorrect, because if any step like that were taken the first place at which it would be put into operation would be Reefton, where there are miners about, coming and going to Otira. As far as I am concerned we know nothing at all about that in Reefton, and as far as I know it is untrue.

75. *The Chairman.* I will read you what Mr. McLean said. He was asked, "Could you give us these conferences in order of date?" and he replied, "The first one was with Mr. Malloy and a man named Kennedy. Then we had difficulty over lamps, and the men struck work because I insisted that they should be responsible for the destruction of these lamps, on account of which I had a conference with a man named Betts and the secretary of the Miners' Union there—a man named Fagan." Then he was asked if they were private conferences, and he replied, "This last one was a private conference, but at the previous one all the men were there. The next one was through another strike, and then I met Messrs. Semple, Webb, and Armstrong. This strike was called because we would not recognize the union connected with the Labour Federation while we were still bound by an award of the Arbitration Court to another union. That was also in the presence of the men. The next one was after the award had expired. They met me with a request to increase wages and improve conditions generally, and then it was Messrs. Webb and Armstrong—not in the presence of the men. I am not altogether finding fault with the men. It appears to me that labour is not available in sufficient quantity for a huge work like that at the present moment." And at another place he referred to a threat: "Then the president of the union stated openly to my brother and myself that they would send word round to the various unions under their jurisdiction, as well as to Australia, that Otira was not a place they would favour for workmen to come to"—Since I have been an officer of the Miners' Union in Reefton we have never made any attempt to prevent Mr. McLean from getting labour, and we never made an attack of that description. I have never been a party to an attack of that description upon Mr. McLean. Mr. Malloy's name has been mentioned. I think it must have been fully three years and a half since Mr. Malloy and Mr. McLean met officially. Mr. Malloy has not been connected with the union at Reefton for fully three years and a half.

76. *Mr. Seddon.*] Have you ever heard of such a suggestion as that there was a grudge against the tunnel?—I know that men have not been satisfied there, but I never heard of an imputation of that description.

77. There was nothing organized?—No.

78. *Mr. Reed.*] You have no unemployed to any extent down the Coast, have you?—Any surplus labour?

79. Yes?—We have 146 men out of work now in Reefton.

80. You said that plenty of labour could be got for the Otira Tunnel if the conditions were better. What passed through my mind was, where you anticipated the labour would come from?—It comes principally from Australia. There are men on the Coast from all over the world. When I said that I had in my mind that you can tell in Reefton by the number of men hanging about looking for a job at a certain mine—you can tell where the best conditions are. There you will always find plenty of labour.

81. How would you suggest that the conditions should be made more attractive at Otira so as to make the tunnel among the first of the works that the men would seek?—There should be better accommodation. It should be possible to obtain a supply of coal there, so that the men would not have to get wood on Sunday. There should be facilities for the men coming away from their work within the eight hours, or a minute or two thereof. At present the men are working, I think, just on nine hours a day instead of eight. I say that if a bank-to-bank clause were put into operation, or means were devised whereby men could get from work quickly and not have to be so long in wet clothes, it would have a tendency to bring labour to the tunnel.

82. When you use the word "accommodation" you mean housing?—Yes.

83. You put first, then, I take it, better housing and better facilities for getting fuel?—Yes.

84. The climatic conditions there, I suppose, will always be a drawback?—It is not a nice place to live in.

85. Regarding wages, has there been any very great increase in miners' wages since 1907?—Absolutely none, except at Otira. Miners' wages are the same now in the quartz-mines round about Reefton as they were eight or ten years ago. The only place where there has been an alteration is Otira.

86. Do you contend that at Otira the wages at the first were less than the recognized union wages on the Coast?—I think that whereas the wages at the beginning may have been considered acceptable by the men, when they got in and had further to walk and the hours became longer in consequence and the tunnel became wetter, Mr. McLean would have to pay more money to get men. When they were near the mouth of the tunnel the men could go right home in a very short time. They are in now two miles, and the men are working nine hours a day, and naturally the conditions are not so good as when the work was started.

87. It was suggested to us that the work was going to cost half as much again as the original estimate on account of the altered conditions of labour—first, that the wages had increased as against those obtaining in 1907, and, secondly, that the result of the labour was not so good as in 1907—in other words, that there was not so much work done in a given time now as was done in 1907; it was stated that the altered conditions that I have mentioned have caused the increase in the cost of the tunnel by half as much again: what do you think of that proposition?—I would not say that it is correct. I do not believe that that is entirely responsible. I should say that, as with any other badly ventilated mine where the conditions are not good, Mr. McLean will get a worse class of labour than a well-ventilated mine.

88. Do I understand you to say that if labour at the tunnel is not giving the result it should, it is because the conditions are not such as to attract the best men?—The good conditions are not there to draw the best class. The better-ventilated mines around, where the conditions are good, draw the best class of labour. A vacancy in a good mine is always in demand.

89. *Mr. Veitch.*] Assuming that a man is a really good man and he goes into a badly-ventilated mine, will he not deteriorate in health and in that way become inefficient?—He will not stop long enough for that. He will go to a better place.

90. *Mr. Reed.*] You made the remark that if tunnels were brought under the Mining Act instead of being under the Public Contracts Act the conditions would be bettered. In what way would they be bettered?—I think good would come from the fact that an Inspector would go there in his official capacity, with power to enforce better ventilation. We should get the bank-to-bank clause too. We should also get time and a half for Sunday work.

91. *Mr. Nosworthy.*] If this work had been undertaken by the Government on the co-operative labour system, instead of a contract being let to the present firm of contractors, do you think they would have been any further through with the tunnel?—I believe they would.

92. Why do you think so?—If the bottom heading were taken on the co-operative system, and the men had the right to pick their mates, and there were good engineers there from the Government and the rest of the work was done by day-labour, I see no reason why there should not be every satisfaction given and the tunnel be as far forward as it is now.

93. You reckon that under the co-operative system the country would have done just as well—got just as far on with the work as the contractor?—I believe there would have been better men there as the result of better conditions, and better men would mean more speed.

94. It would have required more outlay if they had wanted all the conveniences that you suggest are necessary now, would it not?—Not necessarily. If a contractor intends to make money out of a job he will allow for it in his tender, and that surplus might well be used in housing the workmen and making the conditions good.

95. Then you think that under more favourable conditions there is plenty of first-class labour available to complete the work?—I do not think there would be any dearth of labour if the conditions were made good.

96. *Hon. Mr. Fraser.*] Have you had any experience of co-operative work?—Yes, I have worked on the co-operative system.

97. You made a remark just now about the men having the right, under the co-operative system, to pick their mates: is that so under the co-operative system?—It is more so now than formerly. They have not that right now altogether.

98. Do you think it would be a good thing if they had that right?—Undoubtedly; you would get better results than now.

99. There is a system of working called the co-operative system which is after all not a true co-operative system, because the men are not allowed to choose their mates; their mates are chosen for them: is that not so?—Under the present co-operative system men do not always get what they earn. Too much is left to the Engineer. The Engineer frequently does not like a party, or his estimate has been made to look foolish, and he pulls back a good party to 8s. or 9s. a day when they would actually on the prices have earned 15s.

100. Is it not also a fact that in the majority of cases the gangs that are working are not such as they would be if the men had the opportunity of choosing their own mates? Are there not a considerable proportion of men in each gang who are not as efficient workers as the others?—That does not work out down our way. There is very general satisfaction given by the co-operative system down there.

101. But you admitted just now——?—I say that if I had the power to amend the co-operative system that is one of the innovations I would bring about—to allow the head of the party, or the party, to choose their own mates, or ballot a man out of the party who was not giving satisfaction.

102. *Right Hon. Sir J. G. Ward.*] Do I understand by that that if there were half a dozen comparatively weak but willing men they would be sent out and set aside by themselves, and be paid at the same rate as the strong men?—Yes, it would work out in that way.

103. Do you approve of a system that would give the comparatively weak but willing men less than a living-wage, because they would not be associated with strong men, and thus get the benefit of a living-wage?—There is not that great difference.

104. *Hon. Mr. R. McKenzie.*] You said that the men now working on the co-operative system have not got the right to select their own mates?—They have on the Inangahua line.

105. Can you tell me any other place where they have not got the right to select their mates?—On the Main Trunk line, I understand, they had to take the men the Engineer put in.

106. Can you give me anywhere in New Zealand a case where the co-operative workers have not that right?—I have not heard as many complaints latterly, but I understand that even now they had not got that right.

107. Do you of your own knowledge know that they have not the right to select their own mates?—If they have the right I am now made aware of the fact. I was under the impression they had not.

108. You do not know of any case within recent years?—On the West Coast, no. The co-operative system is giving satisfaction there.

109. Do you know that as a matter of fact they have the right to vote a man out of the party who is not giving satisfaction to that party?—I did not know that.

110. Was it not always the system that they could vote a man out if he was not giving satisfaction?—I did not know of their having that right.

111. Did you ever see any of the conditions for carrying on the co-operative system?—I have seen the specifications that exist as between the Engineer and the workers.

112. But you did not see the conditions?—No.

113. You said that the men are not paid for the quantity they put out: what do you base that statement on?—On actual experience of co-operative work.

114. Where?—On the Inangahua line.

115. When?—On two or three occasions.

116. How many years ago?—On one occasion not twelve months ago.

117. Did the men not get a plan showing the quantity of earthwork and the number of yards of cutting they have to do?—Yes, but repeatedly it happens in this way: the men, over the work they have done that month, have not actually earned more than 5s. or 6s. a day, but on pay-day they get 10s. They get into better ground the next month, and know that they are earning about 12s. or 13s., but get paid only 9s.

118. But every co-operative party when they take a certain piece of work get a plan showing the quantity of earth in the cutting before they start?—They should get the plan.

119. But is it not a fact that they do get it?—Co-operative workers know more about a shovel than a plan.

120. You are assuming that those quantities are taken out by the local engineer, are you not?—I know of cases where, I believe, the Engineer was wrong, and the men did not get what they should have got.

121. Can you tell me of any other class of work where some parties make 12s. and 14s. a day and other parties 5s.?—There have been wide discrepancies like that on the Inangahua line. I have known men to come out with 3s. 6d. a day.

122. Is it not a fact that it is their own fault, because they evidently do not want to work, and are away from the work a good deal?—Frequently it is the Engineer's fault.

123. How?—Because sometimes the estimate gives the men too little for the work.

124. If the price is too high or too low the Engineer has the right to vary it, so as to allow the men to earn the ruling rate of wages in the district?—He has that power.

125. Coming back to the Otira Tunnel, you have been advocating that this work should be carried out under the Mining Act?—Yes.

126. Is there any other advantage than the bank-to-bank clause that would be gained by the men if the work were carried out under the Mining Act instead of under the Public Works Act?—Yes, in respect to sanitary conditions. The Mining Act makes provision for that.

127. Do not the conditions of contract make provision for that?—I do not know, but the fact remains that supervision on the part of the Inspector may be more lax under the Public Works Act than under the Mining Act. My experience of Mining Inspectors is that they do their duty.

•128. Do you mean to infer that the Inspectors of the Arthur's Pass Tunnel contract do not do their duty?—When the tunnel was in half a mile there was not a sanitary convenience, and that state of things would not be permitted in a mine where an Inspector came round.

129. Have you ever seen the conditions of the Arthur's Pass Tunnel contract?—I have seen them, but it was a long time ago. I have not been in touch with that place for three years.

130. Do you know whether there is full provision made in those conditions for satisfactory sanitary conditions?—Well, if the provision is there it has not been complied with.

131. Do you know whether it is an invariable practice of the Government Engineer or Inspectors to take samples of the air in the tunnel and have it analysed?—I have no faith in air-tests of that sort. The man who is working in the air is the best judge.

132. Is not this the same system that you have in the mines—this system of air-analysis?—The air is tested now and again, but no reliance is placed on the test.

133. The Inspector of Mines takes a sample of air from the mine and has it analysed?—If he has reason to think the air is bad he takes a sample. But I have seen a sample of air taken out of a place that you could not live in, and the bottle was corked up and the sample analysed, and it was said to be the best air the analyst had analysed in his life. I do not place any reliance on that test at all.

134. But is not this one of the regulations under the Mining Act?—Yes.

135. Are there not invariably a number of men in Greymouth and Reefton looking for employment?—Yes. Before the lockout the mining companies were never short of men.

136. Have you not on your books at Reefton always got a number of qualified men out of employment?—I would not say "always."

137. Invariably?—They are going in and out all the time. There are always men waiting for a vacancy at a good mine.

138. Do you know whether the same thing applies to coal-miners in Greymouth and Westport?—I could not speak as to that.

139. *Mr. Seddon.*] Summing up the objections that the men have made to you against working at the tunnel, I presume they are these: they want the tunnel worked under the Mining Act; they object to acetylene-lamps, dynamite-fumes being allowed to hang about, working six days a week, and having to get fuel on Sundays, and the accommodation at Otira. Do you think the McLeans are in any way responsible for these conditions?—I do. They are the employers.

140. Can you suggest in any way where these conditions that you allege to exist could be altered in any way by the contractors?—McLean Bros. might have contemplated that when they took the contract.

141. You spoke about the accommodation at Otira: all the men get their food at the boarding-houses, do they not?—Yes, a great number of them.

142. They spend most of their time at the boardinghouses, do they not?—No; they have their meals there and go back to their camp.

143. You suggest that if fuel could be got there cheaper it would make less work on Sunday?—Yes.

144. With your knowledge of Otira and the distance it is away from the coal-mines, do you think it is possible to get coal there cheaply?—That is a matter I have not gone into.

145. *Mr. McLean.*] You referred to a mine where the ventilation is bad: what mine was that?—The Globe.

146. Have you a Mining Inspector?—Yes.

147. How do you account for the ventilation being bad?—It is a very deep mine, and very difficult to ventilate.

148. Have any efforts been made to bring about better ventilation?—Yes; we have had the company before the Warden twice. The Inspector of Mines has sued the company.

149. What has happened?—The Inspector has ordered certain steps to be taken, with the result that we got some benefit.

150. And has there been an improvement?—Yes, a slight improvement. It is still the worst mine on the field to work in.

151. Do you think it is possible to ventilate the Otira Tunnel better than it is ventilated now? We are at present driving in or drawing out 4,000 cubic feet of air a minute. Can you suggest any method by which air could be drawn from the headings by fans? When the heading is timbered it is about 5 ft. 6 in. by about 5 ft. 6 in. wide. We are continuously running debris out; we are widening out the tunnel, and we are working along in the tunnel the whole time. I want to know if you can suggest any method by which we could convey air into the headings or drive the exhausted air out of the headings of the tunnel?—There is not room in the heading—on the side—for a small electric fan for the purpose. I should say it would be possible to instal a small fan that would work if the tunnel were wider and would drive the smoke out.

152. How are you going to get the power in?—Convey it in the same way as electricity is conveyed.

153. While the tunnel is being widened out and footings taken out, and all that sort of thing going on?—I should say the power might be conveyed in a pipe.

154. If you were to work that tunnel on the eight hours from bank-to-bank principle, how long would the men actually work in the faces, taking into consideration the half-hour they have for crib?—It would depend on the means that you had for conveying the workmen to and from their work. If the means were rapid they would have much more time.

155. I suppose you know that we take them in now on trains drawn by electric motors?—I have heard that.

156. You said just now that it takes a man an hour extra to go to the face and back again. How do you know that?—It is hearsay evidence from the men. They tell me the time is just on nine hours.

157. That means that it takes half an hour to go in and half an hour to go out. They would then be working in the face—how long?—The men say they have to walk out: they do not always have the opportunity of riding. They have frequently to walk two miles to get out.

158. If it takes them an hour to come in and go out, and they have half an hour crib-time, it follows that they would work at the face six hours and a half for an eight-hours day: is that not so?—I would not admit that, because with an electric motor running the men in a couple of miles, there is no reason why they should not go in in a few minutes.

159. *Mr. Reed.*] In speaking of the climatic and other conditions, were you referring to both ends of the tunnel or only Otira? Do the same conditions prevail at Bealey as at Otira?—About the same.

160. *Mr. Okey.*] What is the objection to the housing-accommodation: are there not the same conveniences as on most of these works?—They tell me that they are not comfortable.

161. In what way?—They say that the huts are not comfortable.

162. On the co-operative works they have only tents: I should think a hut would be more comfortable than a tent?—It is a wild, windy place, and the wind blows through cracks, perhaps, and the huts are draughty.

163. You admit that there are improved wages at Otira?—Slightly, I believe.

164. Is there any complaint about the wages?—I hear more complaints about the conditions prevailing at Otira than I do about wages.

165. You think the difficulty in getting sufficient men is on account of the conditions?—I should say that that is the chief reason why men are scarce.

166. There is no difficulty about the wages, but about the accommodation and the conveniences?—That is what I find.

167. *Hon. Mr. R. McKenzie.*] What you stated about the weather-conditions at Otira and Bealey is only applicable to the winter months, is it not?—The winter there, from my experience, extends over nine or ten months of the year.

168. Do you know that men working for the Government in the Bealey Valley have had as good a time in the summer as they have anywhere else on co-operative works?—I could not tell you.

169. *Mr. Seddon.*] What is the measurement of these huts at Otira?—They are small huts.

170. They are in a gorge—the wind comes right down on them?—Yes. It is a most bleak, inhospitable place.

171. Are the huts lined?—I have not been there lately.

FRIDAY, 6TH SEPTEMBER, 1912.

WILLIAM HAY GAVIN examined. (No. 7.)

1. *The Chairman.*] What are you?—I am a civil engineer on the Otira Tunnel works, employed by Messrs. John McLean and Sons (Limited).

2. *Mr. McLean.*] You have had considerable experience in tunnelling, have you not?—Yes.

3. Will you give the Committee just a short *résumé* of your experience in regard to tunnelling in New Zealand and in other parts of the world?—With the exception of the first one, I completed the first six tunnels on the Midland Railway from Springfield. I was in charge there for the Public Works Department when the Government reopened the works. I also had experience in partly building two or three tunnels beyond there. In the United States I had charge of the Flower Pass Tunnel for the railway company, and that was a mile and a quarter long. With regard to the tunnels I built on the Midland Railway for the Public Works Department, I constructed those on the co-operative system, so that I was both contractor and engineer. The Arthur's Pass Tunnel makes about the tenth or eleventh tunnel I have been connected with.

4. Will you give the Committee some idea of the difference in the cost of the tunnels, comparing the material in the Otira Tunnel with that in the Midland Railway tunnels?—I have a record with me of the longest tunnel that was built on the Midland Railway. It was 26 chains long. There was very little blasting done in the tunnel, on the first 2 chains only 27 lb. of explosives being used.

5. And have you the records of the cost of that tunnel?—Yes. The cost was about £27-odd per running yard, and the tunnel was in area only about two-thirds the area of the Otira Tunnel.

6. So that there could be no comparison between those two tunnels at all?—No, except by making comparative allowances.

7. Would you give to the Committee an idea of the cost of tunnels somewhat similar to the Otira Tunnel—tunnels in the Alps and other parts of the world—as compared with the Otira Tunnel?—The contract rate for the Otira Tunnel is £61 per running yard, the length being five miles and a quarter. The cost of the Mosse Tunnel, seven miles and a half, was £213 per running yard, and the St. Gothard, nine miles, £142 per running yard. I have not got the particulars of the cost of the Loetschberg Tunnel, and I do not know that anybody has.

8. *Hon. Mr. R. McKenzie.*] Can you give us the quantity of excavation, lining, and timbering per lineal yard in those tunnels?—Yes, there were 72 yards of excavation per lineal yard. In the Otira Tunnel there are 34 yards. The Mont Cenis and St. Gothard tunnels are very old, the Mont Cenis being constructed in 1875 and the St. Gothard in 1881. I have no information as to when the Arlberg was built, but it was considerably later.

9. Have you details of the lining per lineal yard in those two?—No, I have not exactly. It varied in places, but in those two tunnels I think it was about 16 yards.

10. And how much in Arthur's Pass Tunnel?—5·7.

11. Can you give us an idea of the quantity of timber used for lining those tunnels?—No. The later tunnels that have been built in the Austrian Alps are the Woonheim Tunnel, 3·9 miles in length, at a cost of £115 per running yard; the Karawhankan, 4·9 miles, £170 per running yard; the Tauern, 5·3 miles, £140 per running yard. The next tunnel is the Bosruck, 3 miles long, and costing about £73 per running yard. This was a single-track tunnel, but the others were all double-track tunnels, and the last four are all in the Austrian Alps, being built between the years 1901 and 1910. There are two other Alpine tunnels, the Reckon and the Albula, and that covers the lot which at all resemble the Otira Tunnel. There is one in the United States, the Hoosac Tunnel, 4·7 miles long, and costing £239 per running yard. The Lyttelton Tunnel is given by my authority as costing £68 per running yard, and the length is 1·6 miles. Now, those tunnels not being of the same area as the Otira Tunnel, I made a reduction to bring them to about the same thing. I made a calculation of the bottom heading and the top heading, and then the amount after you have driven the two headings—

12. Would not the St. Gothard be driven with a double-bottom heading?—I could not say for certain about the Mont Cenis and St. Gothard. I think the greater part of the St. Gothard was driven with a top heading. The later practice has been simply with the bottom heading and the top heading following it. The result I arrived at was that I could take the cost of excavation per running yard as being directly proportional to the area, plus 25 per cent., when reducing the 72-yard tunnel to the size of the Otira 34-yard. That came out at £275 for the Mont Cenis Tunnel, and for the St. Gothard £152. I omitted to say that I also made a calculation in regard to wages. The price for ordinary labour in the Mont Cenis Tunnel was 2s. a day, and the St. Gothard Tunnel came midway between the Mont Cenis and the other tunnels, and I put it at 2s. 6d. In the case of the Loetschberg it was 3s. 4d. per day. These are not for skilled labour.

13. *The Chairman.*] You have made all the necessary adjustments for the purpose of comparison?—Yes. That gave the Mont Cenis £275 per running yard, the St. Gothard £152, and the Arlberg £80. The Alberg is noted as the cheapest of all those tunnels.

14. *Hon. Mr. Fraser.*] I do not understand your calculation: what is the £275 as against the £152?—That means the price per running yard of the length of the tunnel. You measure the length of the tunnel, and one yard length of this tunnel would be £275 and the other £152.

15. Have you any evidence as to the rate of wages paid in those tunnels in the Austrian Alps?—No, I have not precisely, but the price would be very much the same as in the Loetschberg Tunnel, and the wage there was 3s. 4d. per day.

16. *Mr. Reed.*] Was that the actual cost for the Bosruck Tunnel?—No, that was making an estimate on parallel lines to the Otira.

17. Was the Bosruck Tunnel the same size?—No, a little bigger; and I made a very small reduction there of 5 per cent.

18. Can you tell us the gauge of the line that runs through it?—I think, 4·8½ ft.

19. You said that you added 25 per cent.: did you include wages in that?—No.

20. Well, what were you covering?—I was simply covering the extra cost of dealing with a similar quantity of material. A certain amount of the work that you do is only preparation, and then the more work you have to do and the more stuff you have to shift for that expenditure in proportion the cheaper it comes out.

21. *Hon. Mr. Fraser.*] Were those tunnels worked from both ends?—Yes.

22. And what grades were they?—Low grades. There is only one tunnel of which I know the grade the Hauenstein, and that is 1 in 23.

23. Were these tunnels driven equally from both ends?—Approximately from both ends.

24. *Mr. Seddon.*] In regard to wages, you say that 3s. 4d. per day was the wage paid: does that apply to all the tunnels you mentioned or only to the particular one?—To several of them. On the older tunnels it was 2s., on the intermediate tunnels 2s. 6d., and on the last five 3s. 4d. per day.

25. That is just rough labouring-work?—Yes, you can reckon that the lowest rate paid.

26. You were talking of the Midland Railway tunnels of which you had charge, and you say they were cheaply driven. Was that on account of the material?—Yes, the nature of the ground made it easy.

27. It is quite different country to that of the Otira country?—Yes, there is a good deal of very hard rock in the Otira.

28. What was the tunnel in the United States that you were connected with?—The Flower Pass Tunnel, in Nevada.

29. Was it similar to the Otira Tunnel?—No, not particularly similar. I mentioned it in regard to the experience I have had in dealing with tunnels. It was driven on the American system, which is different, and it was only one mile long as compared with five miles in the case of the Otira, and the material was dry and the weather favourable.

30. What is the American system?—They drive the upper part of the tunnel to the full size, and then take out the bottom part to the full length behind. That is a cheaper way.

31. Could that system be introduced to Otira?—I do not know. The rock is hardly good enough. It could not be used with advantage at the Bealey end, but it could perhaps at the Otira end.

32. *Mr. Reed.*] You think 25 per cent. additional is sufficient to make up the difference between a single-track tunnel and a double-track tunnel?—Yes, I think so. What I mean to say is that per unit of excavation it would be 25 per cent. more expensive to drive the Otira Tunnel than to drive a 72-yard double-track tunnel, apart from the difference in the rate of wages.

33. That is as compared with the convenience of a double-track and a single-track tunnel?—Yes.

34. You think 25 per cent. is sufficient?—Yes. I have not exaggerated it.

35. *Hon. Mr. R. McKenzie.*] Can you tell us the total expenditure on the Arthur's Pass Tunnel to date?—No, I cannot.

36. *Mr. Reed.*] From the experience you have had, what do you estimate would be the cost per lineal yard to complete the Otira Tunnel?—About £77.

37. You look upon it then that the Otira Tunnel, comparatively speaking, would be a cheaper tunnel than the Bosruck Tunnel?—Yes.

38. And cheaper than most of the tunnels mentioned?—Yes, cheaper than any of them.

39. *Mr. Davey.*] Following on your answer that it would cost £77 per lineal yard to complete the Otira Tunnel, is it your opinion that the contract was taken at too low a price?—Yes, it is.

40. That it could not be done fairly at the price it was taken at?—Yes.

41. *Hon. Mr. R. McKenzie.*] You referred to the Lyttelton Tunnel?—Yes.

42. You put the cost of that down at £68 per lineal yard?—Yes.

43. Can you give us the quantity on which you base that?—I cannot give you any particulars at present.

44. How did you arrive at the cost of £68?—I have a number of records compiled by a man who wrote a book on the subject. It is too voluminous to carry about, and I extracted the amount of £68 from the items he gave.

45. Will you give us your authority?—Drinker.

46. Do you consider him a competent authority?—I suppose he is as good as any other authority. I suppose he got his information from the then Engineer in Chief.

47. From your own knowledge you do not know the quantity of excavation and lining?—No, I do not. I should say the quantity of excavation of the Lyttelton Tunnel will not greatly exceed the Otira Tunnel. The Otira Tunnel is larger than the New Zealand tunnels have been.

48. *Mr. McLean.*] To what do you attribute the main causes of our not getting along as fast with the work of the tunnel as was anticipated—our not making sufficient progress to bring it to a payable state?—I think the principal reason is the shortage of labour. We have never had since I have been there so many men that we could not put more on advantageously. Of course, the shortage of labour acts in two or three ways. You do not get the work done because the men are not there, and you cannot have discipline to the same extent as if you had plenty of men.

49. You mean to say the shortage of labour reduces the efficiency?—Yes, it does.

50. That is, the efficiency of the men you have at the work?—Yes.

51. Because you cannot discharge or dismiss a man when he is not doing a fair day's work?—Exactly.

52. Do you think if we had the required number of men there right from the start that we could have carried out the work and finished it for the amount of the tender?—No, I do not think so.

53. But it would have considerably reduced our loss?—Oh, yes, decidedly.

54. Would you describe to the Committee the efforts that were made by us in providing bonuses and increased wages in order to obtain men?—Yes. The first bonus that was given was a bonus on the driving of the bottom heading, a bonus per foot run of £1 a foot over a chain a week, or for all over 2 chains a fortnight. That bonus was given in the first place to encourage the best and get the men to move along, in order to get a little more money out of it for themselves and every one else. It would encourage the men to go along, because there was a chance of making more money. Later on that bonus was altered to a more liberal scale. The bonus that is now paid in the bottom heading commences after they have driven 100 ft. in a fortnight. For 100 ft. nothing extra is paid; for 110 ft. every man gets 3d. per day extra for the period in addition to his wages: for 120 ft., 6d.; 130 ft., 10d.; 140 ft., 1s. 3d.; 150 ft., 1s. 9d.; 160 ft., 2s. 4d.; 170 ft., 3s.; 180 ft., 3s. 9d.; and 200 ft., 5s. 6d. a day extra. The rate increases as the number increases. When they have driven a total of 100 ft. in two weeks their bonus is zero, but when they have driven a total of 110 ft. in two weeks the bonus is 3d. per day for each man. The scale is so arranged that the cost to the contractor or the man who is paying them remains the same—it does not increase or decrease. He assumes he is going to pay so-much for this heading, and everything above that the men get.

55. *Mr. Okey.*] It is based on the estimate of driving the 100 ft.?—Yes, it is based on our previous cost. The 200 ft. has never been driven in our tunnel, but we have driven 164 ft. The 200 ft. has been doubled and trebled in the American tunnels. In the Elizabeth Tunnel they drove between 300 ft. and 400 ft. in a month, and in the Simplon Tunnel they drove for

a considerable period over 30 ft. per day. With regard to the rest of the men not working in the bottom heading, we allowed a bonus of 6d. per cubic yard for all that was put out, and it amounted to about 6d. per day increase in the wage.

56. *Mr. McLean.*] Did that increase the output?—It is rather hard to say. I do not think it did.

57. In your opinion it did not, notwithstanding that the wages were increased?—I have an open mind on the subject. I cannot say it did increase the output. There was a similar sort of bonus given to the men doing the lining-work, a bonus which would enable them to earn about 8d. a day additional.

58. *Mr. Blow.*] Did any of the men earn it?—Everybody in the tunnel earned those last two bonuses I have mentioned.

59. *Mr. McLean.*] It has been said here on one occasion, at any rate, that the sanitary arrangements in the tunnel are defective, and also that the air that the men are working in is bad. Will you describe to the Committee what effort has been made in regard to both those matters?—With regard to the sanitary arrangements, we first of all made a sort of wooden seat for the men to sit on in conjunction with kerosene-tins. Certain men were detailed to shift those kerosene-tins every day, which they did by putting the tins with their contents into a truck, and it was run outside and tipped over the dump. That was more or less satisfactory, but some took to stealing the kerosene-tins for washing previous to their use, and there was some difficulty in getting the men to attend to them. A lot of them thought they were rather above that sort of thing, and thought they ought to leave it to somebody else. Then we came to the end of our supply of kerosene-tins. We then got good large iron buckets and put them in different parts of the tunnel, and we have been doing that even since, except that in the lower part of the tunnel where the drain is the men now use the drain, and it is all washed away in a moment. There is a good flow of water there, and there is no trouble to anybody whatever. Further up the tunnel one bucket is kept now, and the men in the forward part of the tunnel use that. It is very difficult to provide anything that is comfortable in the head of the tunnel, because everything is being pushed along and shifted as the work goes ahead, and you cannot have anything of a permanent nature there. We are keeping on with the bucket business, but there is the trouble about the men not wanting to empty it. I think the most satisfactory way would be not to have buckets but to let the men do it in a shovel and put it into the truck, when it will be taken away. With regard to the ventilation, that is entirely satisfactory as far as it goes. As long as everything goes on satisfactorily in the tunnel and there are no hitches, the ventilation is altogether satisfactory. The way we have it arranged is that there is a 16 in. pipe leading from a Roots' blower, which is outside the tunnel, and that admits fresh air into the tunnel and sometimes exhausts the foul air, but you cannot take a 16 in. pipe in through the bottom heading. There is blasting going on there all the time, and we simply had pipe cut to pieces. We are in pretty nearly two miles at the Otira end now, and the end of the ventilation-pipe will be in a mile and a half. Through that mile and a half and a little bit further up the ventilation is all that can be desired: At the other face, where they are shooting, immediately after firing the smoke hangs a little bit, and they turn on the air-cocks and the ventilation is done by means of compressed air. In the heading the ventilation is again satisfactory, because the air-cocks are turned on and the air blows down the tunnel.

60. How many cubic feet of air are admitted per minute?—Roughly, 300 or 400 cubic feet per minute.

61. *Hon. Mr. R. McKenzie.*] Have you got a gauge there to test the quantity of air that goes into the tunnel?—No.

62. *Mr. McLean.*] You are speaking of the compressed air?—Yes.

63. As soon as they have finished the boring and fired they turn on the compressed air from the compressors?—Yes, that is right.

64. And how long does it take to get the smoke away and the men back?—Twenty minutes.

65. And then they are working in clear air?—Yes, the air is absolutely good in twenty minutes.

66. *The Chairman.*] And recognized to be good by the men?—Yes.

67. *Mr. McLean.*] You have had no complaints made to you?—No.

68. Have you had any complaints made as to the housing of the men?—No.

69. No complaints about firewood?—No.

70. No request that the contractors should obtain coal and sell it to the men?—Not to me personally. I believe something of that sort was mooted some time ago.

71. It would be a violation of the Truck Act if the contractors were to sell coal to the men?—I do not know if they sold it for cash whether it would be, but I am not a lawyer. I might say that in regard to the scarcity of labour, in addition to the bonuses, the wages were raised about February. A considerable increase was made in the wages solely for the purpose of attracting more men.

72. Did you not insert advertisements in the papers all over the Australian Colonies?—Yes, we advertised in the Australian Colonies and in New Zealand for men. We advertised on several occasions from time to time.

73. Have you had any complaints made in regard to working in the tunnel?—No.

74. Have you found the men making complaints in regard to the bad conditions in the tunnel?—No. There have been no complaints made at all that I know of. Occasionally a small thing is complained of, but it is always fixed up.

75. In regard to wet places in the tunnel. I suppose you get complaints occasionally that it is disagreeable to work in?—I have had complaints of very wet places, but as far as I am aware the men there now are quite satisfied, and have no complaints to make whatever.

76. You are the judge of a wet place?—That is so.
77. You are fairly liberal in regard to giving the men six hours' work?—Yes, I am.
78. And when there is anything which is really a wet place you do not hesitate in giving them six hours' work?—No, I gave it to them.
79. You have not been found fault with by the contractors in regard to that?—No.
80. They have always backed up your action in a matter of that kind?—Yes.
81. And are there not some men working in the tunnel who have been there quite from the start?—Yes, quite a long time.
82. You have never heard any complaints from them?—No, no serious complaint—no complaint as to the conditions.
83. *Mr. Nosworthy.*] Will you state whether the tunnel is considered to be a wet tunnel to work in or not?—Yes, it is.
84. Wetter than any tunnel you have had anything to do with?—Yes.
85. That must naturally retard the work in the tunnel?—Yes, it does.
86. *Mr. Seddon.*] In regard to the bonuses, have the men got any bonuses lately?—No. When the last increase was made in the wages the ordinary sixpenny bonuses were stopped.
87. When was the last increase of wages made?—About February or March.
88. And there have been no bonuses since?—Not straight-out bonuses of 6d. per yard. The bonus in the heading was continued.
89. Every fortnight do they get any bonus now?—No, they have not got any for some time. They have not driven over 100 ft. for some time.
90. Is that on account of the hard rock they had struck?—No, I think it is on account of the dry weather not giving them sufficient air for the drills. We are dependent on the wet weather to a large extent, and if we get dry weather the machines are worked at a lower pressure.
91. It is not on account of the slackness of the men themselves?—No, I do not think so.
92. In regard to the question of sanitary arrangements, have the other tunnels any better sanitary arrangements?—No, they had no arrangements whatever. There was only one tunnel where arrangements would be necessary.
93. Who decides what is a wet place in the tunnel?—I do.
94. You have never had any trouble with the men in regard to what is a wet place and what is not?—Sometimes we have a little argument.
95. What would you define as a wet place at Otira?—I should have to take you into my confidence. It is a very difficult thing to say. I just go and look at the place, and if I think it is a wet place I declare it so; but I make it a rule that if there is any doubt about it the men get the benefit of the doubt.
96. In some parts of the tunnel the water gushes out like a fountain?—Yes, there have been places like that.
97. That would be a wet place?—Yes, decidedly.
98. And if you decide it is a wet place what happens?—The men are allowed to go out after six hours' work. They work straight on without stopping for meals, and go out two hours before the ordinary time.
99. *Mr. Okey.*] Do they get the full day's pay for the six hours' work?—Yes, a full day's pay.
100. *Hon. Mr. R. McKenzie.*] Were you connected with Messrs. McLean and Sons before the contract was entered into?—No.
101. Did you give them any assistance in preparing the contract price?—No, I was in America at that time.
102. Do you know the system of sanitary arrangements in mines?—No.
103. Can you tell us the quantity of air put into the tunnel per man per minute?—3,000 cubic feet is the total—that is from the ventilating system alone; but then there are the machines, which double that.
104. How many men would be working in the tunnel when you are putting in 3,000 cubic feet per minute?—About thirty or forty men.
105. If this tunnel was being carried out under the Mining Regulations you would have to put more air in than that?—I do not know.
106. In regard to the housing of the men, are the houses lined inside?—Yes.
107. Are they fairly airtight?—Yes, I think so. No man has ever drawn my attention to any hut that was unsatisfactory.
108. Now, how do you define a wet place?—Well, I will tell you exactly. The first thing I did when I went to the tunnel and came across a wet place was to send for the Government Engineer. At that time he acted as referee in the case of any dispute. He came up and looked at a wet place and said, "If it was a little bit drier I would not give it as a wet place, but as it is I will let it go as a wet place"; and I made a mental note of that to go on as an instance in future.
109. Is it wet underfoot as well as overhead?—Yes.
110. Do the men have to wear oilskin coats?—They generally do, but I do not insist on it.
111. It may be dry overhead and wet underfoot: do you allow a wet place for that?—No.
112. Only when it is wet overhead?—Yes.
113. Now, coming to the cost of the tunnel, will you give us the actual cost of the works that have been finished exclusive of plant and outside work?—The actual cost of the work that has been done?
114. Yes, excluding the plant, but including building huts, and so forth, such as buildings, workshops, and offices?—Probably I had better say I cannot give the information as asked for.

115. After firing, how long does it take for the fumes to get outside the lower heading down the tunnel?—I could not say exactly—not very long.

116. Well, what distance do the men retire out of the heading when firing?—About 8 chains.

117. And you cannot tell us how long it takes for the fumes to go out the 8 chains?—Perhaps half an hour. It varies in different grounds and different times. If the ground is wet it will take very much longer, and if the ground is dry it will clear very much quicker.

118. How far is the heading from the widening?—20 chains.

119. If it takes half an hour to go the 8 chains, how long does it take to go out to the tunnel-entrance?—I could not say. We usually exhaust it through the pipe. It does not go through the tunnel at all.

120. How far back does the exhaust-pipe start?—About 40 chains.

121. And nobody can work in that half-mile until the fumes enter the exhaust-pipe?—Oh, yes.

122. After it passes the 8 chains from the heading the men can go into the tunnel?—There is no inconvenience from the heading smoke.

123. Not in the top heading?—Yes, that is a different thing. I am referring to the bottom heading. In the top heading, before they fire they do down and go ahead of it to wait. Usually we make every effort to arrange that the firing will be done before knocking-off time—a change of shift—and that gives time for the smoke to clear away. If the men fire half an hour before the end of a shift I do not send the men back at all.

124. *Hon. Mr. Fraser.*] How do the men get up to the face from the entrance of the tunnel—do they walk up?—No, they go up by a train, which takes them up about a mile and a half.

125. And then they have half a mile to walk?—Yes, some of them, but some are pretty near the place of working.

126. And it is the same for returning?—Yes, practically the same thing. They run out on trollies.

127. Supposing a man is working on the face, how long does it take for a man to go from the entrance of the tunnel to the face?—About twenty minutes.

128. Has there been any increase of wages given to the men since the beginning of the contract?—Yes.

129. Can you state of your own knowledge what the increase has been?—Yes, I can state what the increase has been. For common labour the increase has been 6d.; to machinememen, from 1s. to 1s. 6d.; and the shift bosses—men looking after seven or eight men working in different parts of the tunnel—1s. 6d.

130. When did this increase commence?—This particular increase commenced in February or March last.

131. Had there been any increase from the beginning up to February or March last?—Yes, but not a general increase.

132. Have you received any complaints from the men as to the terms on which they were working?—They put in a general claim some time towards the end of last year. The various items of the claim were taken up in February last, and one of the claims was a general rise in wages.

133. *Mr. Seddon.*] You spoke of the slackness on account of the creeks drying up: will the tunnel be driven much quicker when they get the auxiliary electrical plant put in position?—Yes, it will be better, on account of the better continuity of the works.

134. There will be no slackness on account of the creeks drying up then?—No.

135. Have you got the plant erected there yet?—No.

136. What prospect is there of your striking better country than you have struck already?—None.

137. You think it will be the same all through?—Yes.

138. *Mr. Okey.*] On the average, how often during the day do you carry out blasting?—I should say, probably four times. It depends on the different parts of the tunnel.

139. You allow from twenty minutes to half an hour after blasting for all the men to return: they lose that time?—Yes.

140. *Hon. Mr. R. McKenzie.*] The blasting in the widening of the tunnel does not affect the men working in the bottom heading?—No, not in the least.

141. Does blasting in the top heading affect the men working in the bottom?—The bottom-heading smoke does not seem to affect anybody with the exception of one man who works a winch 10 or 12 chains behind. That man might possibly be affected if he happens to be at his winch.

142. In that case the men in the widening and top heading can continue work when there is blasting in the bottom heading?—Yes, they do.

143. Do you use electric light in the tunnel?—Yes, in the completed portion.

144. But not in the widening?—No.

145. Do you expect you will get the same quantity, or probably more, water from the roof than you do now?—I think it will remain pretty much the same.

146. How is the quantity of water in the Bealey end?—I am not very familiar with that. I do not think there is very much from the top. They have more from the bottom, and have to keep pumping all the time.

147. Where do they pump the water from—from the face of the heading, or is there an arrangement to receive the water?—They have a sump a little way behind the face of the heading, and they move that forward from time to time and use the auxiliary pump from there forward.

148. Have you charge of the Bealey end also?—No, not at present.

149. *Hon. Mr. Fraser.*] You say you have not charge of the Bealey end of the tunnel, but have you been into it?—Yes.

150. I understand from that portion of the evidence which has been given that the amount of work done at the Bealey end is small as compared with that done at the Otira end?—That is right.

151. Are you able to state from your knowledge of the tunnel as a whole whether it would be advisable in future operations to do any of the work at the Bealey end, or will the greater portion of the work have to be done from the Otira end?—The greater portion of the work will have to be done at the Otira end. I do not think there is any getting out of that at all. There are other reasons, but the principal reason is the pumping of the water back and keeping it back. It has to be kept back continuously, or you have to pump out some time before you go to work.

152. Was it anticipated when the contract was commenced that you could only work from the one end?—I do not know. I was not with the firm at that time.

153. *Hon. Mr. R. McKenzie.*] Does the contract require that the tunnel should be worked at both ends?—I do not remember.

154. Was it not anticipated that the contractors would work at the Bealey end?—Yes.

155. *The Chairman.*] How far do you think they would work from the Otira end?—They would have to do about four miles and a quarter.

156. Have you anything to say about driving the heading through before the work is completed from Otira to Bealey?—Before I could say anything on that, what would be the object?

157. As to that method of completing the tunnel which has been suggested?—It is not any quicker. In that system you can always keep up with the work if you have the men.

158. *Hon. Mr. R. McKenzie.*] Are you aware that when they start at the Bealey end they must stop the heading and the widening—Mr. McLean told us so?—No.

THOMAS KENNEDY, Machineman, Otira Tunnel, examined. (No. 8.)

1. *Mr. Seddon.*] You are working at the tunnel?—Yes.

2. What are you working as?—At present as a machineman.

3. How long have you been working there?—Since last January.

4. You are secretary of the union at Otira, are you not?—Yes.

5. How long have you been secretary?—For about four months.

6. How many men are there in the union at Otira?—I could not answer that offhand. There are men coming and going.

7. Nearly every one working in the tunnel is a member?—Yes, most of those in the tunnel.

8. With regard to the conditions of work in the tunnel: is the tunnel pretty wet in places?—Yes, very wet in places.

9. You might describe to the Committee the conditions in the tunnel—I mean, regarding the wet?—In some places it is dry and you can work without oilskins, but these places are not very numerous. In some places it is exceptionally wet: you can get wet through even if you have oilskins on. There are parts that are very wet indeed—it is just as though taps were pouring water down on you.

10. How are you dressed when you go to work in the tunnel?—We have just an ordinary suit of working-clothes on—oilskin leggings and oilskin coat and oilskin hat.

11. You do not always wear your oilskin coats, except in wet places?—Oh, yes, nearly everybody takes an oilskin coat in.

12. When it comes to a question as to whether a place is a wet place or not, how is that settled—is it left to the union, or is it left entirely to Mr. Gavin?—Seeing that there had been disputes with Mr. McLean, the union passed a resolution that it should be sole judge of wet places.

13. Has it ever done that?—No. Since Mr. Gavin has been there we have always been able to come to some arrangement as to what is a wet place.

14. And that has always been satisfactory to the men and to the contractors?—I would not say it has been satisfactory to all the men.

15. But, generally speaking?—Generally speaking, Mr. Gavin has satisfied us.

16. With regard to the bonus system, have you heard anything about that amongst the men?—The bonus system was in vogue when I went there first. A lot of the men did not like the idea of it at all, and Mr. McLean has done away with it, except in one part of the tunnel.

17. What objection had the men to the bonus system?—They seemed to think it was a coercion wage—that if he could afford to pay a bonus he could afford the wages. They seemed to think it was practically a sweating system.

18. *Right Hon. Sir J. G. Ward.*] When you say a “coercion wage” you mean an exertion wage?—Yes.

19. *Mr. Seddon.*] There is a desire amongst the men, is there not, that the tunnel should be worked under the Mining Act?—Yes.

20. You might tell the Committee your reasons for that?—Personally I have not worked in mines, but I believe there is a Mining Inspector.

21. That is one reason: what are the others?—He would perhaps be judge of wet places, and so forth.

22. Is not the other reason that you want the bank-to-bank clause?—Yes, we want that, certainly.

23. Have you made representations to Mr. McLean about that?—Yes, we have asked for it. We have asked for a scale of wages, and so forth, but we have not got them.

24. Is it not a fact that you get higher wages at Otira than are paid in the mines on the West Coast?—Yes, I believe it is.

25. Can you account for the fact that the contractors cannot get as many men as they can employ?—The conditions are so bad that you cannot get them. Mr. McLean has refused to give what we asked, and the men will not stop.

26. What conditions do you refer to?—We have asked for the bank-to-bank clause and for six hours in wet places.

27. But you get the six hours in wet places if Mr. Gavin judges that a place is wet, do you not?—Yes.

28. What are the other conditions?—We want to be paid full time for short shifts; we want forty-six hours to be full time for a week.

29. Have you met Mr. McLean about that?—No, I was not secretary of the union then.

30. With regard to housing, you might tell the Committee what the houses are like—the house where you live, for instance. How big are they?—About 12 by 12, I should say. They have one window, one door, and a chimney-place.

31. Have you heard any complaints from the men about the houses?—Yes.

32. What is the complaint they make?—That the houses are draughty—a lot of them are not lined inside.

33. Have you lived in any of the houses about other mines?—No.

34. Have you heard the men complain that on Sunday they have to go and get wood to keep them warm for the rest of the week?—Yes. We all go to get wood on Sunday, as a rule.

35. The men do not stay much in the houses, do they? Are they not mostly in the boarding-houses and the billiard-room—away from their huts?—They do not stay at the huts much of an evening; they generally go out.

36. Have you got anything to say about the sanitary arrangements?—Yes. A notice has been up outside the tunnel that any man committing a nuisance in the tunnel is liable to dismissal, as sanitary arrangements have been provided; but I have not seen any sanitary arrangements there for some time.

37. Do they not simply use the main drain there?—That is so.

38. Is that sufficient sanitary arrangement, in your opinion?—No, I do not think it is.

39. *Mr. McLean.*] You say that some of the huts are draughty, and so on. Have the union ever made any complaints to the management in connection with any of the huts, or has any individual ever made a complaint?—Yes.

40. To whom?—I do not know whether they made a complaint, but I believe that Mr. Archie McLean has informed the men that the timber is on the road with which to fix the huts up.

41. Do you know of any one that has ever made any complaint to the management in connection with the draughtiness of the huts, or anything wrong with them at all?—It was brought up at a union meeting that I should ask about the huts.

42. Did you do it?—No, because this explanation was offered about the timber coming, otherwise I should.

43. It is quite evident, then, that the management had the matter in hand and was going on with it: is that so?—Yes.

44. Is it a fact within your knowledge that some of the men destroy the huts—cut them up, break the windows, &c.?—Yes, it is a fact.

45. They do not look after the huts in any way?—That is so.

46. Some men go into the huts and wreck them, and go away, and the management does not know of it until they have gone: is that not so?—Yes.

47. *The Chairman.*] With regard to the ventilation of the tunnel, is there any general complaint?—No, I have not heard any general complaint about the ventilation.

48. Have you any suggestion as to what should be done in the way of improving sanitary conditions in the tunnel?—No, I do not know exactly what should be done.

49. You say the sanitary arrangements are not altogether satisfactory?—No, I do not think they are.

50. What do you think could be done to improve matters at all? Or is it that there are bound to be difficulties with sanitary arrangements in a tunnel of this kind?—I do not know what to say, exactly.

51. No decision has been come to by the union as to any further requirements?—No.

52. *Hon. Mr. Fraser.*] You said that the men did not approve of the bonus system because they looked upon it as a kind of "coercion wage." Is there any compulsion for a man to earn a bonus?—No.

53. He need not earn it unless he likes, need he?—If the gang with which he is working earns it, I suppose he takes it as well as the others.

54. I mean, working extra hard: I suppose that is what the bonus system meant, did it not—by working harder the men could earn more money?—Yes.

55. But unless they choose to do so they need not?—I do not think there was any complaint about trying to make the men work hard.

56. It is your own remark that I refer to—that the bonus system was objectionable to some of the men—that they looked upon it as sweating, as a coercion wage. Did you mean that?—They looked upon it as that, but I do not think any one has complained of the shift-boss trying to make them work hard in order to earn this extra bonus.

57. I did not mean that. There was no compulsion upon a man to exert himself in order to win this bonus—he could do it or not as he pleased—or, rather, the whole gang: if they did not choose to work harder than formerly it simply meant that they would not get the bonus?—That is so.

58. Then, did I understand you to say that the men wanted the extra wage without it being in the form of a bonus?—That is so.

59. Did they get that extra wage when the bonuses were done away with?—We got a slight increase.

60. That is since you have been there, is it not?—Yes.

61. With regard to sanitary arrangements, I suppose the men realize that in such a tunnel, with work like that going on, it is impossible to have any fixed conveniences?—Sanitary arrangements would perhaps be in the road in some cases.

62. You have never really thought the matter out beyond this: that you felt the sanitary arrangements in force were not satisfactory, and you did not exactly know how they could be improved?—No.

63. *Mr. Davey.*] Your union is affiliated to the Federation of Labour, is it not?—Yes.

64. You stated just now that you could not get redress from the contractors?—No, we have not been able to succeed.

65. You also stated that Mr. Gavin was satisfying the men in judging what a wet place was. You are fairly satisfied with his decisions?—Yes, he has been very fair to us.

66. Then, what is the real cause that affects the men—is it really the bank-to-bank clause?—We want the bank-to-bank clause, the increase in wages we asked for, and to be paid for short shifts on Saturday and Sunday night.

67. Have you intimated to the contractors at all that if you do not get those concessions you will go out?—No, we have not intimated that to the contractors, but it is all I can see left for it: that is all the Federation Executive see left for it.

68. I see that you were interviewed in Christchurch. Is the report in the *Lyttelton Times* of what you said a correct report?—All of it is not correct; it is not exactly to the letter.

69. You are reported as having said, "Some time ago we placed our demands before the contractors for the tunnel, just after we cancelled our registration with the Arbitration Court, but we were not met, and we got nothing." Is that true?—It is not quite true; we got a slight increase.

70. Then it goes on, "We did not want to go out then, because the men out at Reefton, Kaitangata, and Waihi made a big drain on our fellows; and so, although the Federation offered to support us, we decided to wait. But as soon as the men at Reefton and Kaitangata resume we will come out." Is that a correct transcript of what you told the reporter?—When they are finished I dare say we shall approach Mr. McLean again with the same demands, and if we do not get any more granted I should think we will strike, because there is a general feeling there that we should—in fact, we have been on the verge of striking on two or three different occasions. The men are absolutely disgusted with the conditions. We think that what we ask Mr. McLean for is only fair and just, and we are not satisfied at all.

71. You go on to state, according to this report, "Work at both ends of the tunnel will be stopped, and we do not care for any employer or any Government, we will not continue working under our present conditions. We have made fair demands, and we can get no redress." Is that a fair report of what you said?—Yes, that is about correct.

72. Do you not think, under the circumstances, knowing you were coming here to give evidence, it would have been better not to have made these remarks to the newspaper reporter? Would it not have been better for the union to have made its application to Mr. McLean, rather than for you to make this statement in a newspaper?—We have already made application to Mr. McLean.

73. But you stated that you would make a further one?—Perhaps I was indiscreet in saying what I did, but the position is this: As far as I am concerned, and the rest of the men there, we have nothing to fear; we are not particular who knows the facts of the case. Outsiders do not know the facts.

74. What amount would you say it would cost the workers for oilskins, say, in wet places?—I can only speak from my own personal experience, and it has cost me £8 in the time I have been there—since the 13th January.

75. Do the men find it very cold working in the tunnel?—Yes, especially if you get wet through.

76. Would the men be so cold that they would be unable to hold a pencil when they came out of the tunnel?—That was one particular case—that was the time they struck. They asked for four hours.

77. The water was so cold?—Yes.

78. Was that reported to the engineer or the contractors? Was any privilege asked for the workers under those conditions?—Yes, they asked for four hours, and they were refused.

79. Four-hour shifts?—Yes.

80. Would a four-hour shift, under those circumstances, constitute a day's work?—Yes, that is what we asked, I believe. I was not secretary at that time.

81. *Mr. Seddon.*] Did you seek this interview with the *Lyttelton Times* reporter?—No, I did not.

82. How did it come about?—A man came to the Queen's Hotel and asked for me.

83. Was he a reporter?—I did not know what he was.

84. Did you just talk on like that, and he take it down?—He asked me about Otira, and I told him what I knew.

85. You did not realize the responsibility attached to what you were saying when you were talking to the Pressman?—No; and for that matter I am not particular whether I did realize it or not. I do not care whether the Press knows it or not.

86. What about the statement that the men were coming out: did you make that statement on the authority of the union, or was that your own statement?—That is my own view. That is all I can see left for it.

87. You just gave that as your opinion?—Yes, that is all I can see left for it.

88. Was it the intention of the union, do you think, to approach Mr. McLean first and ask for these conditions before you came out?—The matter was handed to the Federation to deal with in any way they considered best. Perhaps the Federation Executive would have approached Mr. McLean again; two of the members did. I think they would have gone to him again.

89. *Right Hon. Sir J. G. Ward.*] Is it a fact that the wages paid to the men at the Otira Tunnel are higher than those that were fixed by the last award of the Arbitration Court?—I do not know what wages were fixed, but I believe they are a little higher now.

90. *Mr. Reed.*] What wages are you yourself earning?—12s. 6d. a shift at present.

91. You say that you have certain demands, and that if they are not satisfied the only thing for it is to go out: what are those demands?—We ask for full time on short shifts. I am sorry I have not got a copy of the demands here.

92. Full time on short shifts?—Yes. The night shift lose an hour on Sunday night; they do not start till twenty minutes to 1, and they lose an hour there. And the afternoon shift knock off at 11 o'clock on Saturday night: so they lose an hour.

93. So that on each of those shifts they are an hour short?—Yes.

94. What is your next demand?—For a forty-six-hour week.

95. Would not that include the short shift?—That is less the short shift.

96. Next?—The bank-to-bank clause.

97. Next?—That the Government Inspector should be arbitrator, and his decision final.

98. Next?—We put in a scale of wages for different parts.

99. That means an increase of wages all round?—Yes.

100. Upon any basis or percentage?—We just stated what we asked for each man in the different parts of the tunnel.

101. A general increase, then?—Yes.

102. Is it generally an increase that you want, or have you specified any increase?—We specified what we should like the wages raised to.

103. How many classes are there?—Four or five.

104. Can you remember the classes?—I may make a mistake if I attempt to from memory.

105. Take machinists: you will remember what you asked for them?—I was not working a machine at the time the increase was asked for.

106. What work were you doing?—Shovelling concrete.

107. What was the next demand?—We asked for a preference clause to unionists.

108. Next?—That is about all as I remember them.

109. How many of these items have you brought before the contractors up to the present time?—All of them.

110. What was the reply?—The delegates that we sent up reported to the union that Mr. McLean was unable to comply with them.

111. Have you before asked for increases of wages?—We have only asked for one increase during my time there, I think.

112. What justification do you think you have for asking for a general increase of wages?—The conditions are so bad.

113. Worse than in mining?—I cannot draw a comparison. I have never worked in a mine.

114. You know that the wages at Otira are higher than in mining?—Yes, I believe they are.

115. You consider that the justification lies in the worse conditions?—Yes.

116. Has your union decided that unless you get a satisfactory reply to each of these demands you are going out?—Our union cannot decide to go out. We have given our case to the Federation of Labour, and we can only do as they tell us, practically.

117. Have they consented to your going out?—They have promised us their support.

118. To go out?—Yes. They said that was practically all they could see for it.

119. So practically you have decided that unless you get a satisfactory reply to each of these demands you are going out?—Yes, practically so.

120. *Hon. Mr. R. McKenzie.*] Regarding this interview in Christchurch, did you think you were doing any harm, as far as any evidence you were going to give here was concerned, when you gave that interview?—No, I did not think it would do any harm at all.

121. You look upon yourself as a free man, to do and say what you consider right, as long as you do not injure anybody else?—That is the position.

122. You asked Mr. McLean for a higher rate of wages and better conditions in the tunnel?—Yes.

123. What were the conditions that you wanted improved? Did you want the ventilation improved?—I do not think ventilation was mentioned.

124. Did you want the sanitary conditions improved?—I do not think they were mentioned either.

125. Are the men satisfied with the present sanitary conditions, then?—It is a matter the union has never taken up. I hear odd ones speaking about it.

126. There is really no general complaint about the present sanitary conditions?—The matter has not been brought before the union.

127. And there is no general complaint about the ventilation at present?—No.

128. You cannot tell us how the rates of wages compare with the rates of wages in the quartz and coal mines on the West Coast, can you?—No.

129. Has there been a scarcity of qualified labourers since you have been there?—No, I do not think there has been. There are a lot of men coming and going: they will not stay very long.

130. Are there many men dismissed?—No, not a great number.

131. Are there any dismissed?—Yes, I have known of men getting the "sack."

132. You want the bank-to-bank clause: how long does it take you to go to your working-places after you leave the trucks?—The men on the concreting have not very far to go. The

men in the bottom heading have a good distance to go. And it takes a good bit longer to go right to the head of the tunnel.

133. So that some men are at a disadvantage as compared with others?—Yes.

134. How long does it take you to go from the tunnel-entrance to where you get off the trucks?—About fifteen or twenty minutes, I should think, perhaps fifteen minutes.

135. You want preference to unionists?—Yes.

136. You have told us the demands that you made on Mr. McLean. If all those demands were granted, we will say, with the exception of preference to unionists, do you think that your union, or the Federation of Labour, could supply Mr. McLean with a sufficient number of competent men—say, up to about four hundred—to fully man the works?—Yes, I think so. I think he would get plenty of men to work there.

137. But do you think the Federation of Labour would undertake to provide competent men for him?—We could not guarantee to supply men.

138. The Federation of Labour operates pretty well all over New Zealand?—Yes.

139. Could you not communicate with the other branches of the Federation and ascertain what men were available?—Yes.

140. And you would advise them to go to Otira if the conditions were made fairly satisfactory?—Yes, I think they would.

141. Under those circumstances, do you think the Federation or your union would be able to supply skilled work for the contractors up to about four hundred men?—Yes, I think they would get the men.

142. Where is the machine that you are working located—in the heading or outside?—My machine is at the top heading.

143. How long does it take the fumes to get out of the top heading after the firing?—We generally go down below and up the drive a bit, and wait for about twenty or twenty-five minutes.

144. I suppose you do not know how long it takes in the bottom heading, do you?—No. I have only worked a few shifts there.

145. Would the demands that you are making on the contractors very materially increase the cost of the work?—No, I do not think they would.

146. Do you know what percentage the increase would be?—No.

147. I mean as far as the working-wages are concerned?—I could not tell you exactly the percentage.

148. Do you know whether it was the practice formerly for the Government Engineer to define what was a wet place?—I do not know. I do not think it was.

149. Is it very wet where your machine is located?—We are driving along, and we shift our machines after every firing, and sometimes it is wet and sometimes we strike it dry.

150. It is necessary to widen the heading where you have the machine located—I mean, for the trucks to get past it?—We are above the trucks—right above them.

151. If the contractors were to meet you in what you considered a fair and reasonable way, do you think there would be any trouble with the men at the tunnel?—No, I do not think there would be any trouble at all.

152. *Hon. Mr. Fraser.*] Mr. McKenzie asked you just now whether, if the contractors conceded what you asked in regard to wages and other conditions, it would materially increase the cost of the work, and you said you did not think so. Did I understand you correctly?—It would increase the cost, I believe. I said I would not care to pass an opinion as to how far. We should be working rather shorter hours, and it would cost a little more.

153. I suppose that if wages are increased it must increase the cost of the work, must it not?—That is so.

154. *Hon. Mr. R. McKenzie.*] If the conditions were improved and the wages increased to what you consider fair wages, do you think the men would do more work than they are doing now?—Yes; I think they would do a little more and be more contented.

155. Did you have that in your mind when you said you did not think it would materially increase the cost of the work?—No, I did not think of that at the time.

156. If the conditions were improved and the men paid what you consider fair wages, do you think they would give a return for the extra cost by doing extra work?—Yes, I believe they would.

157. *Mr. Nosworthy.*] If these concessions that have been asked for were granted, do you think the Federation of Labour would guarantee the country that they would see the work through, or would there be any chance of another strike in another six months' time, or another appeal for an increase?—I do not think they would appeal for a further increase. But I am not one of the executive of the Federation of Labour, and cannot answer for it.

158. It is reported that you said to the newspaper reporter that you did not care for anybody or any Government—if you did not get what you wanted you were going to stop work. Has it struck you that what we are to take out of your statement is that this tunnel might be stopped?—No, not at all.

159. There is a danger of that, if the Federation of Labour is going to dictate too much—there is a danger of it, seeing that the contractors have lost money over the job. You are quite prepared to face that alternative? If it comes to stopping the tunnel the Federation of Labour will be responsible, if they take up the attitude which you say they are going to take up?—Yes, we are quite prepared to abide by what the Federation of Labour say.

160. You are quite prepared, if you do not get the increased wages that you are asking for, to see the tunnel stopped?—Yes.

161. *Mr. Seddon.*] You did not mean that as a threat?—No. I just stated the position as it was. In fact, there was a motion at one time to strike, and it was only by a little persuasion that we managed to stop it.

162. Since you have been secretary of the union, can you tell us how many men have come to Otira and gone away?—No. Many come, and we ask them to join the union, and they say

they will in a short time, but they go away without having their names in the books at all—I should say hundreds.

163. Could you tell me how many workers per month go to Otira and leave, approximately?—I should say, twenty or thirty a month.

164. Where do they come from, as a rule?—Reefton, and Christchurch, and Australia—from all over the place.

165. The reason principally given for their departure is—what?—That the job is too wet and they are tired of it.

166. Are these people miners who have stayed long in other mines?—Yes, there are many miners there who have stayed in other mines a good while.

167. The wetness is the principal thing, is it?—Yes, that seems to be the trouble.

168. Do the men compare the mines at all with the Otira Tunnel?—Yes. I have heard a lot say that as soon as the Reefton mines start again they will go back.

169. In the mines there is a certain amount of dust at the face?—Yes.

170. They prefer that to Otira?—Yes.

171. *Mr. McLean.*] Have you known men leave the work at Otira and then come back again?—Yes.

172. You know Nicholls, do you?—Yes.

173. He was secretary prior to you?—Yes.

174. He was really the agitator in connection with the four-hours shift?—I would not say that.

175. He was the man, at any rate, that made the demand and knocked off, was he not?—Yes.

176. He was in the shift?—Yes.

177. Is he working there now?—Yes.

178. Do you know whether the management refused to give him employment to start with when he came back? He was there for some days before they would take him on?—Yes, I believe that is so.

179. He is a good workman, is he not?—Yes.

180. So, notwithstanding the bad conditions, he comes back and works again?—Yes.

181. And he is working there now contentedly?—Yes.

182. Do you know a man named Dan McKenna?—Yes.

183. Do you know how long he has been on the work?—I could not tell you exactly.

184. He has been there a long time?—Yes.

185. Have you ever heard any complaints from him?—He is one of our unionists.

186. You have not heard any complaints from him about the bad conditions, have you?—He was quite in accord with our asking for these other conditions.

187. Is not the general principle underlying these claims as to bad conditions a general rise in wages? You make use of these statements to get a rise in wages?—You mean that we want more wages because the job is so wet?

188. No; I mean to say that you are exaggerating the conditions for the purpose of getting higher wages?—I do not think I have exaggerated them at all.

189. How is it, then, that men are continually being discharged for drunkenness, and that kind of thing, and yet they come back time after time: can you account for that?—It seems to me it is usually the case that a man can get a job at Otira. A man perhaps having no money comes there to get one.

190. *Mr. Reed.*] What percentage of the men working at Otira are unionists?—Speaking offhand, I should say nearly all the men there are in the union, or have promised to become financial unionists. I have only met with one or two direct refusals.

191. Why do you say that you must have preference when they are nearly all unionists already?—We want every one to join the union. We do not like working with any one who is not a unionist.

192. How many are there who are not—half a dozen?—Yes, about that number.

193. Would you strike for the purpose of forcing those half-dozen into the union?—Yes, we would; but I think we should get them into the union without striking.

194. Why make that a demand the non-fulfilment of which would cause a strike? From what you say it appears to be quite a minor issue?—I believe we would strike in the finish if we could not get them to join. We object to working with any non-unionist. I do not think it is right that we should have to battle with the contractor for their benefit when they will not support us.

195. *Hon. Mr. Fraser.*] Is there only one union which you recognize when demanding preference for unionists?—Our union—that is all.

196. That is the Federation: you belong to the Federation?—We are a branch of the Federation.

197. You would not recognize a member of any other union as being a unionist, would you?—Yes, we do; but we ask a man who comes from another union to get a clearance from that union and join us.

198. Suppose he does not: would you object to working with him?—Well, no; I do not think we should object to him so strongly as if he were not a unionist at all.

199. When you ask for preference to unionists, do you mean that a man must join your union or that he must be a member of some union—which?—We want him in our union.

200. That is to say, you think that the contractor should not be allowed to employ anybody who did not belong to your union, although he might be a member of another union?—Yes, we think a man should be in the union where he is working.

201. *Hon. Mr. R. McKenzie.*] Supposing Parliament amends the Conciliation and Arbitration Act in the direction that the law will not recognize any union unless it is registered under that Act: would your union be prepared to register then?—I can only speak for myself: I will never work under a union that is registered under the Arbitration Act. I will leave the union first.

TUESDAY, 10TH SEPTEMBER, 1912.

The Chairman: There is a point regarding which I understand Mr. McLean would like to make an explanation.

Mr. McLean: Yes, sir. I stated in my evidence that Mr. Gavin was employed in 1910. That statement was made hurriedly. It was in 1909 that he was first employed.

HUBERT THOMAS ARMSTRONG examined. (No. 9.)

1. *The Chairman.*] What are you?—General secretary of the West Coast Workers' Union.
2. Are you working at the Otira Tunnel?—No. I visit there at times. The union there is a branch of our organization.
3. Have you worked there at all?—I have never worked in the tunnel.
4. *Mr. Seddon.*] What association were you connected with when you went to Otira to consult Mr. McLean?—The West Coast Workers' Union. I was acting under instructions from the Otira branch.
5. Was there a union at Otira then?—Yes.
6. What year was this?—It was in January of last year.
7. Did you go to Otira prior to that?—I had been there a few times prior to that.
8. Will you give us in their order the times you went there?—I went there first in September of 1910, and I have visited there at least fortnightly—sometimes weekly—ever since.
9. *The Chairman.*] Up to now?—Yes.
10. *Mr. Seddon.*] When you went there you went to represent the men's claims to Mr. McLean, did you?—Yes. In the first place I was summoned to attend a meeting at Otira. The men were discussing the conditions that prevailed. They were very dissatisfied with them, and they arrived at the conclusion that the best thing to do would be to set up a deputation, seek an interview with the contractors, and see if a peaceful solution could not be arrived at. When it came to selecting the deputation I was appointed one of them. The branch secretary was sent to Mr. McLean the next morning to ask if he would meet the deputation, and he informed him that he would meet a deputation of his own men, but he would meet no deputation of which Armstrong was a member, nor would he have anything to do with him.
11. Mr. McLean heard you afterwards, though, did he not?—After the men in the tunnel had been idle a couple of days.
12. Did the men strike?—Yes.
13. For what reason?—They struck for the recognition of their organization.
14. Because Mr. McLean would not hear you?—That is so.
15. Mr. McLean heard you afterwards, though?—Yes, after four days' idleness Mr. McLean agreed that in future he would answer correspondence from me and do business with me as the representative of the men, if I was instructed by them to do so.
16. He recognized that you were the accredited representative of the men, and he then heard you?—Yes.
17. What did you see Mr. McLean about on that first occasion?—It was in regard to wet places—six hours for wet places (as was customary in underground work)—time and a half for Sunday work, the bank-to-bank clause, and different grievances that the men had: I cannot recollect them all now.
18. Did the question of wages come up?—Not at that particular time.
19. How did Mr. McLean meet you: did he concede you any points?—Perhaps it would be better for me to make a statement, and I could explain better. I understand that the contractors have petitioned to be released from their contract. I do not want to say anything that is likely to interfere with them in any shape or form; I just want to say a word or two in regard to the labour-conditions, and to justify the stand the men have taken when there has been any labour trouble. I cannot go further back than June of 1910, when a branch of our organization was first formed there. Mr. Hickey was then general secretary of the union. He resigned in September, and I was elected to the position, and took up my duties at Otira. Mr. McLean in his statement to the House has complained—according to the newspaper reports—of being hampered by labour troubles, and says that it is impossible to get sufficient suitable labour. In regard to the labour troubles that have taken place at Otira since my time, I think I can justify the stand the men have taken. They have been actually forced as unionists to take up the stand that they have. I referred before to the deputation that was set up. Never before, I think, in the history of unionism—or, rather, as far back as my memory goes—has an employer of labour refused to meet in conference an accredited representative of the men. Some of the men on that occasion had an idea that Mr. McLean would not meet me, and I advised them to leave me off the deputation altogether; and, when they were discussing with the contractor the differences, to discuss also with him the reason why he would not meet me or do business with me, and perhaps the difficulty would be got over in that way. However, it was decided that I had to be a member of that deputation. When Mr. McLean had refused to meet it another meeting of the men was called, and Mr. McLean was invited to attend the meeting. He did so, and he put the case from his point of view, and then retired. The meeting decided unanimously that none of them would return to work until such time as the contractor had agreed to meet their representative. When our union started at Otira they were working under an award of the Arbitration Court that had been entered into between the contractor and the Inangahua Miners' Union. The conditions of labour were not provided for in that award at all; the rates of wages were not fixed, nor were the hours of labour, or anything else. The only thing that award did was to tie them up for a period of two years, and if they rebelled against the conditions they would be fined for doing so. The award actually provided for nothing. If I understand the

Act, the Arbitration Court in any case—even if it desired to do so—could not fix a rate of wages or alter the conditions in a manner contrary to the Public Contracts Act, because the Arbitration Court cannot make an award contrary to an Act of Parliament, and it was foolish for the men to go to the Arbitration Court at all. At that time a number of men were working at both ends of the tunnel on Sundays at the ordinary rate of pay, and that was a grievance, because in no industrial agreement in New Zealand was it provided that men should work on Sundays at less than time and a half, and under many industrial agreements double time was paid for the work. It was quite a common thing at Otira to see twenty or thirty men or more going to work on Sunday and working at the ordinary rate. There was another grievance that the men had. In the mines of this country where a place is wet six hours constitute a day's work, and the men thought they were entitled to that. Mr. McLean agreed to that, but he was going to be the arbitrator as to what constituted a wet place. That, in our opinion, was a very unreasonable position to take up, and we suggested as a solution the only thing that we could think of. There were three Government Inspectors, one on each shift. They were neither employed by the contractor nor did they have anything to do with the union, and we were quite willing that where we failed to agree as to what was a wet place one of the Government Inspectors should act as arbitrator, whose decision should be final. Mr. McLean has always refused to recognize arbitration there, taking up the attitude that he himself was going to be the arbitrator, which was very unsatisfactory. The reason why, in my opinion, it is hard to get suitable labour at Otira is that the conditions do not compare favourably with those of underground works in any other part of this country. The conditions are worse than in any mine that I know of. The hours of labour are the longest, and the rates of wages, when you take into consideration the hours that they work at Otira, are little, if at all, higher than are paid to miners in other parts of New Zealand. They work at Otira forty-eight hours a week. In the North Island the miners have been working forty-six hours a week for the last twenty years, and the hours in the North Island are counted from bank to bank. At the Otira Tunnel the eight hours are worked at the face, and it is something like eight hours and forty minutes from the time the men go into the tunnel until they come out again. When we take into consideration the fact that they work forty minutes longer per day than the men do in any mine in New Zealand, and also that they work two hours longer on Saturday, we see that that amounts to six hours per week; and, although the wages are slightly higher at Otira than in the mines, if you put that six hours down at overtime rates you will find that some of the workers employed underground at Otira are being paid actually less for the hours that they work than the men are in the mines at Reefton. We have had deputations to the Minister of Mines—to Mr. McGowan when he was Minister, to Mr. McKenzie, and to Mr. Colvin—asking that the Otira Tunnel be brought under the provisions of the Mining Act. If that were done I believe it would prove a solution of the difficulty: far better conditions would prevail, and there would be little or no difficulty in getting suitable labour. I have seen as many as five hundred men thrown out of work at Reefton; these men were running round all over the coast looking for work, yet there was a scarcity of labour at Otira. If you speak to any of those men and ask them why they do not go to Otira, they will tell you they would not work under the conditions prevailing at Otira for less than £1 a day. Nearly all those miners have been at Otira and have left again. I believe that Otira has been better supplied with labour than any mine in New Zealand. I do not know the number of men that have been there, but I think that if returns were given showing the number of men that have been engaged and have left the Otira Tunnel it would be startling. Nearly every miner that you drop across in New Zealand has been at Otira at some time or other, and given it up and gone to look for work somewhere else. They have had at Otira, to my knowledge, some of the best men in New Zealand; and if the conditions were anything like reasonable to work under, I am perfectly satisfied they would have stopped there. There are hundreds of good miners in New Zealand who would gladly go to Otira and make their homes there, where there is five or six years' steady work, if the conditions were anything like reasonable. Now, if this tunnel were brought under the provisions of the Mining Act, or the conditions that are enjoyed by the miners of this country were enjoyed also by the tunnel-workers at Otira, things would be greatly improved. For instance, we should have a Mining Inspector, who would visit there from time to time. He would see that the place was properly timbered and properly ventilated, and that they were more careful in the use of explosives and different things. I believe that in the mines of New Zealand, if it were not for the Mining Inspectors keeping them up to the mark, the number of accidents would be a hundred per cent. more than at the present; and the same thing must apply to the Otira Tunnel. They are very nearly two miles in now from the mouth of the tunnel, and it requires miners for the work. If the tunnel is not a mine within the meaning of the Act, then it should be, because the men are doing underground work, and they are further underground than in any mine in New Zealand. I desire only to add this: I do not think it is fair for the contractors to allege labour trouble, because they have not had much of that; any labour trouble they have had since my time has been brought about by the unreasonable tactics of the employers. I can quite understand their making a mistake in forming their estimates of what it would cost to carry out a large undertaking of that kind. I believe that if the work were taken over by the Department and carried out either by day-labour or under the co-operative system the work could be done cheaper and quicker, and would be more satisfactory to all concerned.

20. *Mr. McLean.*] What reason did we advance for not meeting you as a representative of the workers?—The reason advanced was, if I remember aright, that I was not employed by you; that you would do business with your own men, individually or collectively, but that you objected to outside interference.

21. Are you quite certain that that was the reason given?—That was one of the reasons given at the meeting.

22. Do you remember my meeting the men in conference in the hall? What was the reason I gave then?—That was one of the reasons. I think one reason was that you had been libelled from one end of the country to the other by outsiders.

23. Let me refresh your memory. Did I not state to the deputation and to you and the representatives of the Labour Federation that it was impossible for us to recognize a union while we were still bound by an award of the Arbitration Court to another union?—Yes, but I think—

24. Did I not make that statement?—I would not be sure of that. I would not say you did not. I do not remember. But I did hear that you stated that you always looked upon the award as a farce.

25. We were bound by the award, as the men were. Did I not make that statement, that I could not recognize the official of one union while we were still bound to another by an award of the Arbitration Court?—I do not remember that statement.

26. If I said I did make it you would not deny it?—No.

27. Have you ever known as many as twenty or thirty men go into the tunnel on a Sunday?—Yes, quite that number, when I went there first.

28. You are positive about that?—Yes, I think there would be that number.

29. Can you tell us when it was, or under what conditions it was done?—I never took any dates. I think they would be shifting roads and doing different things.

30. You have no idea what they were doing at that particular time?—Only that you have told me at different times that you only employed men to do work on Sunday that would stop the progress of the work during the rest of the week. So I do not know really what they would be doing.

31. You spoke about "the tactics of the contractors": what do you mean by that?—I believe that the contractors were unreasonable, in the first place, in not meeting a deputation of the men, and unreasonable in demanding that the employer should be the arbitrator.

32. If the statement I make is correct, was it unreasonable for us on that particular occasion to refuse to meet representatives of another union?—Yes.

33. Notwithstanding that we were bound to another union by an award of the Court?—Yes. It was unreasonable, because the position that would be taken up by a reasonable man would be that he would meet the deputation and explain that to them.

34. I am informing you now that it was explained to the men that it was impossible for us to meet representatives of another union. That being so, was it unreasonable?—Yes. There was no union in existence as far as Otira was concerned—only the West Coast Workers' Union.

35. But the tunnel was bound by an award of the Court, notwithstanding that there might not have been a branch there at the time?—Yes, but the award bound the employers to nothing: it only bound the workers.

36. Did we ever refuse to meet you on any occasion after that?—No.

37. We have discussed matters quite amicably: you have never found us unreasonable in regard to discussing matters?—No.

38. We did not belittle you or in any way insult you, did we?—The last conference was in a very friendly spirit.

39. Have you ever known any tunnel in New Zealand that has been worked under the Mining Act?—No.

40. Supposing that the contractors tendered for this work knowing that the Mining Act did not apply, was it unreasonable then for them to refuse to concede all the requirements of the Mining Act?—Whether you knew it was under the Mining Act or not, I say it is unreasonable to ask men to work under conditions that do not prevail at any of the other underground works. It would be unreasonable, I think, for the contractors to tender at a price that would not allow of their compensating the men for it.

41. What are these special conditions? The bank-to-bank clause is one?—Yes.

42. Forty-six hours a week another?—Yes.

43. And six hours wet time another?—Yes.

44. Those are the main conditions?—Yes.

45. The six-hours condition has been given, has it not?—In some cases.

46. In all cases in really wet ground?—It is given in some cases where the men have to walk out and say they will not work any longer than six hours.

47. Are those all the conditions that are different from those in mines?—Of course, the mines would have the Mining Inspector.

48. Do you know that under the Arbitration Court award the Resident Engineer, or Assistant Engineer, was made arbitrator as to a wet place?—Yes.

49. Those are the only conditions, then, obtaining at Otira that are objectionable, are they?—Yes, the hours of labour.

50. Do you remember a conference at which your president, Mr. Webb, yourself, Mr. Gavin, and myself were present—a conference held recently in reference to this question?—Yes.

51. Do you remember a statement being made by Mr. Webb that as we had not conceded all you required he would have to send intimation to the various unions to say that Otira was not a fit place to work in?—No, not because you had not conceded all that we required, but because you absolutely refused to make an agreement at all with us.

52. Under your conditions; but that was stated by Mr. Webb?—Mr. Webb stated that he would not advise men to go to Otira unless he was satisfied to sign his name to the conditions they were going to work under.

53. He said that he would really send word to the various unions under the jurisdiction of the Federation to say that Otira was not a place to advise members of the Federation to work in: is that right?—Yes.

54. Do you know if that ever has been done?—No notice has ever been sent to the union. A notice appeared in the *Maoriland Worker*, I think, at one time, stating that there was trouble pending at Otira: in fact, there is no necessity to send any notice to the miners' unions—they all know Otira too well.

55. Do you know of men working there any considerable time?—Yes, there are men there who were there before my time.

56. They are still there, are they?—Yes.

57. Are there many of them?—Not a great many.

58. Are they good men, do you know?—I believe they are.

59. They seem to be satisfied with the conditions?—I have never met one man who was satisfied.

60. They seem to be by remaining there?—Oh, well, economic necessity compels a man to remain in some very funny places.

61. You say it takes forty minutes to go in and come out. How long does it take the men to get to the faces, do you know?—Somewhere about twenty minutes.

62. How long does it take them to get out again?—Somewhere about that.

63. Have you ever seen any of them about at 4 o'clock?—You might find a few that walk out.

64. How do the men come out?—On trains.

65. How long does it take for the train to come from the lined part?—Not very long. I timed them on two occasions: once they were thirty-five minutes, and another time forty minutes.

66. *Hon. Mr. R. McKenzie.*] Each way?—No, both ways.

67. *Mr. McLean.*] There is a mile and a half of finished tunnel, is there not?—Yes.

68. What is the idea of claiming for time to count from the mouth of the tunnel right through the finished work—right to the work?—Because, in the first place, eight hours is quite long enough for any man to remain underground.

69. Whether the men are working or not working, it does not matter, as long as they go underground at all you claim they ought to be paid for the time?—Yes, and I do not think you will ever get a suitable class of men unless they are paid for it. They would be foolish to work there under worse conditions than prevail elsewhere.

70. *Hon. Mr. Fraser.*] You said that if the Government were to carry on this work under the conditions that you suggest the work could be done more expeditiously and more cheaply than at present: did I understand you to say that?—Yes, that is my opinion.

71. How do you arrive at that conclusion as far as less expense is concerned, seeing that you all through your evidence allege that the wages paid are inadequate for the work done under the conditions you refer to?—I believe that under altered conditions the best of men could be obtained, and in work of that description one good man might be as good as two poor ones. The only way in which you can get a suitable class of men for that particular kind of work is to give them the same conditions that prevail in other underground works. If you do not do that they will not stop there. And it is a serious thing to have a scarcity of underground workers, because when you are short-handed underground it is a dead loss, for you have to keep the whole staff and all the machinery going outside.

72. Did I understand you to say that the rate of wages paid by the contractors is still slightly in excess of that paid in any of the mines, notwithstanding the excessive hours that you refer to?—Slightly in excess of what is paid in some mines—not all mines. For instance, in Waihi, working for a contractor you get 11s. a day for forty-six hours a week, bank to bank. That is considerably more than is paid at Otira Tunnel.

73. Is the question of wage, then, the one that has entered into the minds of the workers very greatly with regard to disinclination to work at Otira?—The question of wages is not so much in dispute now as the general conditions under which the men work.

74. The question of wage is not one of the factors that have prevented men from working there, is it?—No. Of course, when we asked the contractor last year for an agreement, we asked that the minimum wage should be 10s. 6d. per day. 10s. a day has been the recognized wage on the West Coast for twenty years or more, and we contend that if a man is entitled to 10s. a day for working at a mine in the Greymouth or Hokitika district, surely he is entitled to another 6d. who will go and live in those mountains! So we were reasonable in our request.

75. Is the wage paid at Otira 6d. a day extra?—No. The minimum wage for labourers at Otira is just the same as has been paid on the West Coast for twenty years.

76. You said just now that the wage paid to the men there was slightly in excess of that paid in mines?—In some cases it is, to the underground workers.

77. What number of men are working outside the tunnel?—Quite a number.

78. I mean, relative to the number working inside?—There are more inside, considerably.

79. What proportion of the men are working outside?—At the Bealey end there are more outside than inside.

80. I mean at the Otira end?—It varies.

81. However, you do not allege that the question of wages has been an important factor in preventing the contractor from getting the men, but it is the conditions under which they work?—That is so.

82. What are the grievances of the men, would you mind repeating them?—That they work six hours a week longer than they do in other underground works; that they are continually quarrelling about wet places, which should be decided immediately by an arbitrator on the work; and that Sunday work is not paid for at the rate of double time or time and a half, as provided for in the Mining Act.

83. Is Mr. McLean the sole arbiter as to what is a wet place and what is not?—Yes.

84. Notwithstanding the fact that in the award it has been left to the Assistant Engineer?—That award has run out.

85. What is the practice just now, when a man disputes Mr. McLean's decision? Is any reference made to the Assistant Engineer?—No. In some cases they get the six hours when they ask for it; in others they do not. The men tell me that in some cases they have simply got to walk out.

86. Leave the work themselves at the end of six hours?—Yes.

87. Have the men complained that they have been compelled to work more than six hours in what they believed to be wet places?—Yes, at one time they did, but they have not so much lately.

88. What do you mean by "lately"?—Within the last few months.

89. The witness we examined before you—the secretary of the union there—was asked about wet places, and replied as follows: "Q. Has that always been satisfactory to the men? A. I would not say it has been satisfactory to all the men. Q. But, generally speaking? A. Generally speaking, Mr. Gavin has satisfied us."—Mr. Kennedy would be speaking from his own knowledge. He has only been there a few months. That bears out what I said—that it has been better recently.

90. Your remarks apply to prior to that date?—Yes. Of course, the contractors are beginning to find out that it does not pay them to treat men in that way.

91. *Mr. Nosworthy.*] You know what the amount of the contract was for the tunnel?—I have seen it in the paper lately.

92. Have you any idea how much more the tunnel will cost to complete under the new conditions that you have suggested—or, rather, the conditions which the Federation of Labour ask to have the tunnel completed under? How much more to the Dominion is it going to be than the original contract?—It would be impossible for me to form an estimate of what it would cost to complete the tunnel. I should say, considerably more than the contract price.

93. Did you ever have the idea that the contractors, when they undertook to make the tunnel, were receiving more for it than the work was worth, or that they were getting full value for the work?—Oh, no. I have always thought, from my experience of underground work, that when the contractors were asked or supposed to complete the work in five years the Government were a party to an impossible agreement.

94. You think that McLean Bros. have done well in getting as far through with the tunnel as they have under the conditions they have had to work under?—I think they would have got on much better if they had paid a little better and been more reasonable with the men and made the conditions more comfortable. I believe they would have been further ahead.

95. Under the conditions that you name do you think the tunnel would have been completed within the contract time?—No, I do not think it would have been possible.

96. *Mr. Davey.*] How often to your knowledge have men had to walk out of the tunnel before six hours' work in a wet place was conceded?—Several times. Men have left the tunnel altogether and have gone away. Others have come out and have been told it was all right, perhaps because Mr. Gavin or some one else could not be got hold of at the time. Any number of men have left because they would not work more than six hours—in fact, some men refused to work six hours in some places.

97. You can quite see the suggestion you have made—that until Mr. McLean was driven to give eight hours' pay for six hours' work in wet places he would not do it? That is the suggestion, is it not?—Yes.

98. How often has that occurred? A man might walk out in order to see Mr. Gavin, but that would not be walking out because he had refused. How often have men been refused, and walked out?—I could not say.

99. You said something to this effect: that if the tunnel were brought under the Mining Act it is possible the timbering would be attended to, and also that explosives would be more carefully handled. Have you any reason to suggest that there has been carelessness in the past in respect of either?—I have seen gelignite lying about. You will see a certain amount of it in any underground work. The average man is careless in the use of the stuff, if he is not afraid of the Mining Inspector. I have been mining for nearly fifteen years, and I know what it is. I was at one time a check inspector for the men, and I was continually quarrelling with the men themselves, more so than with the employer. I have seen them in the Otira Tunnel charging holes and tamping them with pieces of cement-bag, a thing that would not be tolerated in any mine in New Zealand.

100. What would be about the time this occurred?—It is a common practice now.

101. About timbering: do you know of any particular instance where that was carelessly done?—No. I recognize that work in a tunnel is a dangerous occupation, and with the most careful management there will be accidents; but I believe there would be fewer under the Mining Act.

102. This working on Sunday at ordinary pay, is it going on now, or has it recently?—There is nothing like the amount of Sunday work that there used to be, and I think the men get time and a quarter now.

103. Were you present in the Arbitration Court in Greymouth when this case was heard between the contractors and the men?—That was before my time on the Coast.

104. *Mr. Seddon.*] You have had some experience as a miner?—Yes.

105. Have you been underground much?—I was underground between fourteen and fifteen years.

106. You have been through the Otira Tunnel frequently, have you?—Yes.

107. What kind of country is it?—It is good average country to drive in.

108. Can you suggest any way of hurrying the work along?—It cannot go any faster than the heading, and there is only a limited number of men that have room to work there, and it

is now worked the full twenty-four hours. The only thing that I could suggest would be to have the best machinery and the best men that you have got kept at work in the bottom heading, because the further you send that head the better—the further you go and the more room you are making for men to do the finishing-work further back.

109. What wage do the men get who are working at the face?—They are paid better at the face than anywhere else—11s., 11s. 6d., and 12s. 6d., and the shift-boss gets 13s. 6d.

110. What do the men get who are doing similar work in mines?—I could not say.

111. You do not know what they get at Reefton, do you?—I have worked in the Waihi Mine, doing contracting myself and being paid wages. The lowest wage we paid would be 11s.; 12s. and 13s. to machinememen.

112. You spoke about men working outside the tunnel: were you referring to the men preparing the concrete, and so on?—Yes, men working in the river-bed shovelling—general labourers.

113. How often since that first interview have you seen Mr. McLean?—We often have a pitched fight when I come along.

114. I mean, officially: have you had any more conferences with him?—Oh, yes; two or three little matters.

115. You mentioned having seen Mr. McLean and Mr. Gavin together?—Yes.

116. There has been no difficulty since the first misunderstanding?—They are always approachable, and they treat me well enough—talk to me in a friendly way, and reply to anything that I send them.

117. You said that at one time there were five hundred men idle at Reefton, and they could not be got to go to Otira: was that immediately after the strike at Reefton?—Yes.

118. What was the reason—just because Otira had got a bad name?—Yes.

119. They knew about the conditions?—Yes.

120. Had many of those men been to Otira?—Oh, yes. You will find, in any mine a lot of men who have been to Otira—in fact, they say at Otira there are only four more to come and they will have had all New Zealand.

121. You said that Otira was better supplied with labour than any mine: do you mean the class of labour that goes there?—Yes, good and bad. They have any number. Considering that they have had as many men, perhaps, as all the mines in the Reefton district put together, they ought surely to have got a good team.

122. Have the men ever made complaints to you about the ventilation?—No, they have not complained much about that.

123. Speaking from your own experience of the ventilation, is it good?—It is not too good, and it is not going to be very good, either. Of course, just where the machines are working it will be right enough. If you have got sufficient air to drive a machine, or two machines, or three, there is any amount of air just there; but the smoke is blown out of the faces and it goes further back and dies there, and the men further back are continually in this bad air.

124. *The Chairman.*] Is it going to be worse as you get in?—I do not think so. I think it is as bad as it will be.

125. *Mr. Seddon.*] Do you think that if an Inspector were there it would be improved?—I believe in ventilation by the fan.

126. The question of timbering does not come in very much, does it?—There is a good deal of the tunnel with no timber at all. In some places it does not require it.

127. I mentioned it because you said that if an Inspector of Mines was there he would see to the timbering?—He would see that timber is put in where it is required.

128. Do you think there are places where it is required and is not put in?—I can only go by hearsay. I have not been called into the Otira Tunnel at any time to inspect a face because it was not timbered well enough. I have heard any number of men say they worked in dangerous places and ought to have some timber, and so on; but that is only hearsay.

129. Since you have been visiting the tunnel you have heard of accidents there from one cause and another, have you not?—Yes.

130. You do not think the number of accidents is in excess of the usual number in mines?—I do not think the accidents are anything like so numerous as they used to be.

131. Can you give any reason for that?—No, I cannot.

132. Has the bonus system come under your notice at all?—Yes.

133. Will you tell us briefly what you think of it?—I think the only place at the present time where a bonus is paid is in the bottom heading. I do not believe in the bonus system. I do not believe in the principle of the thing. A man should either be paid wages or he should work under co-operative contract.

134. Can you tell me if the men are in favour of it at all?—I have not heard the men working in the face complain of the bonus.

135. With regard to wet places, for the last three or four months you have heard no complaints at all, have you, as to the definition of what is a wet place? The men are satisfied with Mr. Gavin's decisions?—I have heard that Mr. Gavin is giving them a better spin now than they used to get. I think that Mr. McLean had to decide it at one time, and any man at Otira will say that they get on better with Mr. Gavin than with Mr. McLean.

136. You spoke of some men having simply to walk out: was that on account of wet places?—Yes.

137. How long ago was that—some considerable time?—Some months ago; I could not say definitely.

138. Will you tell us briefly why you say that you would prefer this work to be done by co-operative labour or by day-labour?—I believe the Public Works Department have men com-

petent to supervise that work and carry it out just as cheaply and more satisfactorily than any contractor. As far as that goes, Mr. McLean had to go to the Public Works Department to get his engineer. A contractor is not going to undertake a work of that kind except for profit. If you have to engage a competent engineer to carry on the work, I fail to see why a contractor is necessary at all.

139. You have not worked on co-operative works, have you?—Yes.

140. Where?—On the West Coast, at Coal Creek, and in the North Island many years ago.

141. Do you think the co-operative system would be cheaper than the other system?—Yes, properly managed the co-operative system must be the best system under the sun. It must be cheaper, and must be better for the workers and for the Government.

142. Do you think they get more work out of the men on the co-operative system?—The man who does nothing does not get anything out of it.

143. You mean that the man who does not do his share of the work does not get paid?—No. As far as the co-operative system in this country is concerned, I believe it has been abused to a great extent. Men have in some cases lost the incentive to work hard, because they believe they are going to be paid a certain amount irrespective of whether they work hard or not. That is the idea they have in some cases. If you pay a man by results—according to what his labour produces—there are very few loafers. The coal-mines in this country are worked under this system, and there are no loafers in the coal-mines; the difficulty is to get them to knock off at the right time.

144. *Hon. Mr. Fraser.*] That is not the co-operative system?—It is the co-operative system as it should be.

145. *Mr. Seddon.*] Your reason for suggesting that this tunnel should be worked under the Mines Act is that the conditions are exactly the same as prevail in a mine?—Yes.

146. Has this request—that the tunnel should be worked under the Mining Act—been made for a long time?—Since ever it was a tunnel. I heard the complaint before I saw Otira at all.

147. Is it a fact that amongst the miners throughout the West Coast and elsewhere there is a prejudice set up against this Otira Tunnel?—Oh, no; no more than there is a prejudice against any mine that is unhealthy to work in or dangerous. A man prefers to work in a good one.

148. That prejudice is not maliciously circulated, is it?—No.

149. *The Chairman.*] Do I understand you to say that the prejudice is against the work and not against the contractors?—Yes. I have absolutely no quarrel with the contractors.

150. *Mr. Okey.*] You say that you are the general secretary of the West Coast Workers' Union: do you not know the general rate of wages that is being paid for similar work?—The minimum at Otira is 10s. a day—the same as is paid all over the Coast.

151. But what is the wage that is being paid on the Coast?—10s. a day, and it is 10s. at Otira—that is, for labourers.

152. At Otira they are paying 11s., 11s. 6d., and 12s. 6d.?—Yes, for underground workers.

153. For work that in other places is paid at the rate of 10s. a day?—Oh, no; it is paid more than that in other places—10s. 6d. and 11s.

154. The wages are really higher at Otira than the general rate?—Yes, they are higher, but not in proportion to the hours the men work.

155. With regard to the bank-to-bank clause: suppose they fired a shot at half past 4 o'clock, the men would not start working again, would they—they would come out?—Very likely.

156. That would mean they would be out by 5 o'clock?—Yes.

157. So that many times, I suppose, they would really get the benefit of the bank-to-bank clause?—In some such cases you do not come out; you simply come out of the face where you are firing, and you have to wait then for the trains.

158. But if it does happen like that the men do not do any more work that night—and, no doubt, the contractors arrange to fire shots just about knocking-off time, or half an hour before?—It is not so much the work, as far as that goes: the men want to get out of the smoke—they want to get out in the fresh air and get their wet clothes off. You can make men stop the full eight hours at the face, but it does not follow that you will get any more work out of them. A man can work himself to death in six hours. I think the contractor would get more work under the bank-to-bank clause than under the present system; he would get more work done for the money.

159. But in work like this do you not think there must be a certain amount of give-and-take between the contractor and the men?—Yes.

160. Are the men asking for this bank-to-bank clause?—Yes.

161. Is it the usual thing in work of that kind?—Yes.

162. That the men should come in and go out in the contractor's time?—Yes, it is the law under the Mining Act.

163. It is not usual with general work: the general thing is for the contractor to pay one way?—That is outside; this is underground.

164. In the country you pay from the time the man starts from his place of business—you pay one way?—The miner is worse off than that, because he does not get paid either way. It is only the time he is actually in the mine that he is paid for—not while he is walking to the mine.

165. The rate of wages cannot have anything to do with the contractors not being able to get sufficient labour there?—The wages and the conditions.

166. But you have admitted that the wages are better than are paid for similar work in other places?—No; per hour they are not.

167. You are not going to put all tunnels under the Mining Act, surely?—A tunnel of that description should be. There is just as much reason why such a tunnel should be under the Mining Act as any mine I know of. When we have interviewed Ministers about it they have all

agreed as to that; but they have explained that a contract has been entered into, and it would alter the conditions of the contract to bring the tunnel under the Mining Act now.

168. The contractor tendered under the conditions then prevailing—there was no Stone-quarries Act, even, at that time?—The contractor could not be brought under the Mining Act for that reason, but he could be brought under the Quarries Act. I could never understand that.

169. With regard to this Sunday work that you complain about, I suppose it is some necessary work that must be done on Sunday: is that so?—That is so. There will always have to be a certain amount of Sunday work—for instance, putting in a lay-by, or doing something to the road that might have the effect of blocking the whole tunnel on Monday if it were not done on Sunday.

170. You are the first that has made any complaint about Sunday work?—If you search the industrial agreements in New Zealand, whether under the Arbitration Act or mutually entered into, you will not find one under which men are paid less than time and a half for Sunday work.

171. *Hon. Mr. R. McKenzie.*] And that is the law, is it not?—Yes, under the Mining Act.

172. *Mr. Okey.*] As far as wet places are concerned, I suppose you come on them suddenly? A spring may break out at any time?—The ground may be perfectly dry one shift, and very wet the next, and perhaps the one after that dry again.

173. The engineer is not always there waiting about. A man may leave a wet place and come out: the engineer does not complain if the man gives a satisfactory explanation?—No. There is a foreman always in the tunnel. In that case the foreman would have a look at the place, I suppose.

174. Is there very much to complain of about these wet places?—For the employer to say he is going to be the sole arbitrator is altogether unreasonable.

175. We have had evidence that the Government Engineer on the ground has been called in to decide a dispute if there is one: is that evidence wrong?—It may have been done years ago—before my time there—but never since, and Mr. McLean has refused to arbitrate at all.

176. In connection with co-operative work you said that the man who did nothing would get nothing: to whom were you referring?—If the system were properly carried out the loafer would get nothing—the man who did nothing would get nothing.

177. Who is the man that does not work?—Any man that does not do useful work.

178. Were you referring to the contractor?—I contend that a contractor on public works serves no useful purpose at all.

179. You put down the contractor as a drone?—I do not like to call any one a drone. If I saw an opportunity of getting a contract and I could make a few thousands out of it, I would do it; but I do not think I should be necessary. Somebody else could be put on to manage the thing, and would do it just as well as I could.

180. The Government, I suppose—or somebody, whoever it was—would need to have an expert there to oversee the work, would they not?—Yes, and they should be better able to manage it than a contractor.

181. You consider the contractor a drone: do you not consider the secretary of a workers' union a drone?—He would not be necessary either under a sane system. Unfortunately, he is to-day.

182. You do not believe in the bonus system—something to encourage a man to do a little more work and get paid for it?—I would either put him on piecework or on wages.

183. If a man can earn a pound a day you do not believe in his having it?—Yes, I do, and I have always believed in the co-operative system.

184. In co-operative work you believe in choosing your own mates, do you not?—Yes.

185. You would not indorse a system under which you would have your mates sent to you and must admit them to your party?—No; it does not work out satisfactorily. There is only one way, I think, to classify the men, and that is to let them do it themselves.

186. But men, as a rule, do not like to vote out a man?—No. The voting should take place when men are coming in.

187. Here we have a contract taken by a contractor, and if he pays a fair price for any work that is done, can you see anything wrong with his giving a bonus?—It is a good thing for the contractor.

188. But does it not encourage the men?—Yes. If a man has a contract he should pay the proper wages, and if he pays a bonus to the man working for him he is making a subcontractor of his employee, and it is altogether wrong. If you are going to put the worker himself on piecework or on contract, there should be no other contractor between him and the employer.

189. Is not this bonus system, under which each man is paid more money to keep the pace, a better system than giving one man an extra shilling a day to make the pace for the rest?—Yes.

190. You know that this latter system has occurred in the past?—Yes; I have had to "pace it" in my time.

191. You spoke about the carelessness of the men regarding explosives. I suppose the contractors have some system by which they have one man in charge of the explosives?—We will try to get that evidence?—I fancy I have seen notices put up giving instructions to keep the caps and gelignite separate and in tins.

192. That could not be improved very much with the Mining Inspector, because he would not be always there?—The Mining Inspector can take legal proceedings, whether it be employer or employee, and he does so, and for that reason they are a good deal more careful under a Mining Inspector.

193. I take it that the books of the company will show the number of men that have been taken on and the number that have left the job?—Yes. I go a good deal by our union books. We put through a great number of men. We never know how many members we have at Otira. We may have two hundred members on our books, and perhaps only about a hundred of them can be found when you come to look round; the other hundred have gone.

194. With regard to ventilation, you have borne out what we have been told—that there is not much complaint about it?—I have not heard a great deal of complaint, but I contend that the ventilation should be improved.

195. How?—It could be improved by blowers, or by fans, or in some other way. I notice that in the tunnel where the machines are working the smoke is blown back and there it dies. Some of the men are working in an almost continual fog of smoke.

196. You think the conditions can be improved, then, as far as ventilation is concerned?—Yes, I think so.

197. *Hon. Mr. R. McKenzie*] With regard to the old award, do you think it could be enforced either on Mr. McLean or on the men?—I do not think it could.

198. Did your union ever take legal advice on the point?—No. There was nothing provided for, as far as we were concerned, so we did not bother.

199. Putting all past differences between your union and the contractors on one side and dealing only with the conditions existing at the present time, your principal complaint appears to me to be that the men are working six hours a week more at Otira than are worked in the ordinary mines of the country?—Yes.

200. If any one carrying on this work were to concede this six hours a week, do you think that would give the men entire satisfaction?—Not that alone.

201. I will add to the question, “and double time for Sunday work”: do you think that would give the men satisfaction?—Yes. I will briefly recapitulate what we asked for: in regard to hours of labour, forty-six hours a week; time to count from bank to bank; time and a half on Sunday; a Government official to arbitrate regarding wet places; and the ordinary preference clause. We did not ask for anything that had not been conceded in every mine in New Zealand.

202. Have you got preference to unionists?—In all the mines we have.

203. That is under the awards, is it?—Yes.

204. If those conditions were granted do you think it would give full satisfaction?—Yes.

205. Do you think it would give full satisfaction if preference to unionists was not granted?—I do not think there would ever be industrial peace.

206. Can you give the Committee any idea how much extra in wages it would cost per week or per day to grant the six hours that you ask for?—There would be more men, and you would get a better class of men. When the bank-to-bank clause was introduced into this country the same argument was raised, but we found in practice that the output of the men from the mines was just as high as before.

207. You will admit there is a certain amount of lassitude comes over a man after he has been at work certain hours underground?—Yes.

208. It has been held that a man can do practically as much work in six hours underground as he can in eight?—Yes; I believe that a man working underground can do all the work that is in him in six hours. No man is fit to work eight hours. If he is there eight hours he is not working hard, because it would be impossible.

209. The men at the tunnel have on several occasions asked to have this tunnel brought under the Mining Act?—Yes.

210. And the answer you got was that it would be impossible to do that because it would be a breach of the contract?—Yes.

211. You said that you could not understand why the tunnel was brought under the Quarries Act?—Yes.

212. Do you know that any contractor engaged on any work that is let by the Government or anybody else comes under any law that is passed by Parliament subsequent to the contract being let as far as that law affects him?—The Quarry Act was a new Act. Then I understand. I thought the tunnel had been brought under an old Act.

213. There are several Government Inspectors connected with the tunnel: do you know whether they have been appointed Quarry Inspectors as well?—I do not know.

214. Do you know whether the local engineer in charge of the tunnel-work is a Quarry Inspector?—No.

215. Do you know whether an Inspector under the Quarries Act has quite as much power, especially with respect to explosives, as an Inspector of Mines has?—We were not aware of those facts, and have never utilized the Inspectors.

216. You say you have seen gelignite lying about in the tunnel?—Yes. One man got blown up with gelignite while raking stuff down the tip-head.

217. Are percussion caps lying about also?—No, I never saw that.

218. Do you know what the Mining Regulations provide as far as explosives and percussion caps are concerned?—Yes. The caps must be kept separate and in airtight tins.

219. Are they not in charge of a qualified man?—They have to be kept in a magazine a certain distance from a travelling-road.

220. Is there not a limit to the quantity that can be brought into a mine each day?—Yes.

221. Do you know whether there is any limit to the quantity that can be brought into the tunnel each day?—I do not think there is any limit.

222. You said that you saw shots being tamped with old sacks?—Yes.

223. Does the contractor supply any material for tamping?—No.

224. Are you sure?—I have been so informed.

225. What is the material that the men usually tamp with?—Wet clay.

226. I want to find out if the contractor keeps the necessary supply of material handy for the men to use?—No, it is not there.

227. How often does the Inspector of Mines as a rule visit the various mines under his control—say, at Reefton or Waihi?—I have never worked in the mines at Reefton. In Waihi you might see the Inspector every week, perhaps oftener.

228. Sometimes not so often?—No.

229. How often do you think the Inspector of Mines visits the mines in Reefton?—I do not know.

230. Are the Government Inspectors at the Arthur's Pass Tunnel not invariably in the tunnel?—They are always there.

231. Under the terms of the contract is it not their duty—outside the Quarries Act altogether—to look after explosives if they see them lying about, or call attention to them?—I do not know if it is provided for in the terms of the contract.

232. If they are Inspectors under the Quarries Act, then they become responsible?—Yes.

233. You said that if the tunnel were brought under the Mining Act the timbering would be better?—I said it would be the duty of the Inspector of Mines to see that the places were properly timbered.

234. Is there any comparison at all between the timbering that is done in that tunnel and the timbering in a coal-mine or quartz-mine—are they at all alike?—No; it is a different class of work altogether as far as timbering is concerned.

235. Do you not think that Mr. Gavin, or the Government Inspector, who have had long experience of timbering, should be better authorities regarding it than any Inspector of Mines? Do you think they would know better whether the timbering was properly put in?—It is as likely as not that you would get a Mining Inspector who would know nothing about it.

236. Do you think there is an Inspector of Mines in New Zealand who ever saw any timber put in a railway tunnel, unless he happened to be there as a visitor?—Perhaps not. A Public Works Engineer would know more about timbering a tunnel than a Mining Inspector would.

237. You expressed the opinion that this tunnel could be done cheaper by co-operative contract than by a contractor?—Yes, that is my opinion.

238. Do you think there would be any difficulty in arranging the various sections or parts of this tunnel, such as the headings, the widening, or the concreting, in order to let the work on co-operative contract?—There might be in regard to the trucking. I do not know whether it would be possible to let the whole. Some of it would have to be done by day-labour, I fancy. The trucking would be the great difficulty, if there were too many parties.

239. Have you ever worked on a co-operative tunnel contract?—Yes, I worked in one for about twelve months.

240. Did you have any difficulty there?—None whatever; but there were only fifteen of us—a different thing altogether.

241. With the exception of the length of the tunnel, the principle would be just the same?—Yes. But you could not compare it with the Otira Tunnel.

242. The whole question with you resolved itself into this: that if the six hours a week that the men work now without being paid for, and the Sunday work, which only applies to a few men, were conceded, you would have no more serious trouble?—I am sorry I did not bring a copy of the proposed agreement. I will send one along. If what we ask is granted I am satisfied it will give satisfaction, and we are not asking for anything that has not been conceded right throughout the country.

243. If these six hours were conceded, it would make about 7s. 6d. a week increase in a man's wages, would it not?—It would not put it on to his wages.

244. You want to be paid for time from bank to bank, and you want two hours extra on Saturday, so that men receiving 10s. a day would receive about 8s. a week extra?—If they worked the time.

245. You want to be paid for time from bank to bank?—We want the hours to be from bank to bank. The men would prefer to have the time off than to get the extra money, even at double time.

246. *The Chairman.*] You want to be less time in at the work: that is it, is it not?—Yes.

247. *Hon. Mr. R. McKenzie.*] In any case it would cost the contractors more. You want to be paid for two hours on Saturday?—Yes, that is customary.

248. So that the actual increase to the contractor would be something like 8s. per man per week?—Yes.

249. Does this apply to the men working outside?—No. It would only be a matter of two hours a week to the men outside.

250. What percentage of the labour engaged in connection with the works is employed outside?—I could not say: it varies.

251. Suppose the tunnel took another five years to put through, do you think this increase would amount to £20,000 or £10,000?—In my opinion, if you have eight hours from bank to bank you will get more work from the men.

252. But, putting that phase of the question on one side for the time being?—I do not think it will increase the cost at all; it will have the opposite effect.

253. Taking the finished portion of the tunnel at Otira end, the conditions there are practically the same as outside, are they not, with the exception that you are out of the sunshine?—No.

254. Why?—The air is not the same; in the tunnel you are working in smoke and fumes.

255. I mean, in the finished portion of the tunnel?—There is no work there.

256. But when you are going in and out. The fumes are exhausted before they reach the finished portion, are they not?—Yes, they have died away before then.

257. So that practically, as far as air-conditions are concerned, it is something like it is outside, with the exception that there is no sunshine?—Yes.

258. If the conditions that the men are asking for were granted, do you think there would be any difficulty in Mr. McLean getting the number of men he requires to fully man the work?—None whatever. There is no scarcity of good miners.

259. Are there generally a number of miners and labourers about Reefton and Greymouth looking for work?—Yes, the last twelve months there have been.

260. You have no complaint against Mr. McLean now as far as coming to reasonable terms is concerned, except on the points I have mentioned, have you?—Mr. McLean told us at our last conference with him that if he could possibly afford it he would concede the terms, but he could not do so.

261. You know all the rates of wages paid by Mr. McLean at the present time?—Yes.

262. Are the rates outside higher than they are in Reefton?—I believe they are higher than the wages paid under the Reefton award. The Reefton award is the lowest on the West Coast. Mr. McLean pays for outside work the same wages that are paid on public works.

263. You said that under the co-operative system a man who does not work does not get any pay. Did you have the men on the works in your mind when you made that statement? Say a man goes off his work for a day or two or three days in a week, the rest of the co-operative gang deduct that from his share of the earnings, do they not?—Yes.

264. Those were really the men that you had in mind when you made that statement, were they?—Yes, simply the men that will not work. A certain number of men do not go to these places to work in any case: they are exceptions, of course.

265. Have you known men on the co-operative works who, as long as they were there, would not work any more than to earn just enough to live on?—I have found cases like that—men who, after they had got a few pounds, would go on the spree. There are not many like that. The average man goes into the backblocks to get all he can while he is there.

266. Do you know whether co-operative gangs are allowed to choose their own mates?—Not in all cases.

267. Do you mean recently?—Recently.

268. Can you give me any case in which they are not?—Yes. Men going on to the Midland line now are told what gang to go to.

269. But the gang need not take them in unless they like?—They are not consulted. The men are simply told to go there.

270. The gang have a right to object, have they not?—They are told they can put them out again.

271. You say that a contractor is not necessary, any more than a secretary of a union?—I fail to see, in carrying out a public work, that a contractor is necessary. If you have a contractor, to my mind it is a vote of censure on your Public Works Engineers: it is as much as saying that they are not capable of carrying out the work themselves.

272. Supposing that Mr. McLean has to find a large sum of money for financing this work—say, £50,000, or £75,000, or £100,000: do you think he would be necessary then?—The Government would be just as well able to finance the work as a contractor.

273. Do you think that Mr. McLean's previous experience is of no value?—Of course it is of value.

274. Suppose that Mr. McLean brought £20,000 worth of plant on to this work that he had had for previous works, would not that be saved to the Government?—No.

275. Why?—Because he will see that he puts in a price to cover it.

276. *Hon. Mr. Fraser.*] You were speaking about co-operative works: would you mind explaining what you meant by a co-operative work?—I take it that a co-operative work means that each shares in the contract. It prevents one man from employing another to make a profit out of his labour. It gives, or should give, to the worker himself the whole of that which his labour produces.

277. How were the gangs to be constituted under your idea of a co-operative work?—According to the nature of the work they were doing.

278. Let me put it in this way: under the co-operative system that you had in your mind when you spoke of it as being the best, would there be freedom to select your own mates in the gang?—Yes.

279. Would you consider the co-operative system a good one where there was no such freedom but where men were just taken by the Engineer and told to go into a particular gang, and, that gang being formed, they had to go to work on a certain basis?—No; I think the system would be improved by allowing the men to select their own parties.

280. You said that you have worked on co-operative systems?—Yes.

281. Was it underground in tunnels, or in open country?—Both.

282. Under the Public Works, I suppose?—Yes.

283. What was the system there in forming the gangs: was there absolute freedom in selecting your own mates?—Where I was working there was, and we did very well too.

284. Was that the invariable practice?—No. We were allowed to do so on account of our going to put through a tunnel, and afterwards the same gang went to cuttings.

285. *The Chairman.*] I understood you to say just now that you had approached Ministers, and they said they could not have this work conducted under the Mining Act, because there was a contract?—It would be a breach of the contract.

286. But, apart from that, were they of opinion that it ought to be under the Mining Act?—Yes. Mr. McKenzie promised that he would introduce legislation to bring any future work of that description under the Mining Act.

287. *Right Hon. Sir J. G. Ward.*] Did the Minister say he would make any such amendments retroactive?—Not to apply to the Otira Tunnel, but to future contracts.

288. *The Chairman.*] Is the bank-to-bank clause to apply to wet places?—No.

289. Generally speaking, is the bulk of the work in the tunnel in wet places or not?—Yes, they are all wet, more or less. Nearly every man that goes into the tunnel goes in with a suit of oilskins on him.

290. Will the bulk of the work be done under the wet-place conditions or not?—No; the bulk of the work will be under eight-hour conditions.

291. *Mr. McLean.*] How would you combine the wet-time and bank-to-bank conditions? You say the six hours would not apply to wet places: how would you overcome it?—They would change shifts at different times.

292. The men then would work six hours in the face for wet time?—As nearly as possible.

293. These requirements of yours—you remarked, I think, that they would be final as far as the men and your Federation are concerned, if they were granted?—I have no right to say what would be final, because I do not know what body of men will go there and work. I have absolutely nothing to do with fixing the conditions or what they ask for. I put in writing what I am told.

294. Do you yourself know that any of the Inspectors there are Inspectors under the Quarries Act?—I know it now, but I did not before.

295. You do not know who the Quarries Inspector is?—I did not know it.

296. So you really do not know whether the inspection of explosives and timber and that kind of thing is properly conducted or not?—It is not properly conducted, no matter who has the power.

297. *Mr. Nosworthy.*] What is your opinion with regard to the sanitary conditions of the tunnel at the Otira end?—I believe they could be improved in places. I fancy that if they had the airtight pans that they have in other places, and cuddies were driven for the purpose, it would be an improvement.

298. Are the sanitary arrangements in the tunnel as good as the sanitary arrangements in mines?—No.

299. I understand that the sanitary arrangements are carried out by surplus water in the channel?—Yes. There is a good stream of water running out of the tunnel.

300. That ought to be satisfactory, ought it not?—I have not heard any complaints about it recently.

301. Then you are inclined to think the sanitary arrangements are satisfactory? It is not a point that the men are complaining about?—It is only a small matter that could be seen to at any time.

302. *Mr. Okey.*] Under your system the bank-to-bank clause would place men in wet places in a worse position?—Not in a worse position. As far as the underground workers are concerned anywhere in New Zealand, they do not split straws like that. If a person is working in a wet place he may not work the full six hours at the face; but we do not demand that the six hours shall be from the time he leaves outside till he gets outside again. There is no mention of bank to bank in a six-hour clause.

303. Your suggestion is that the Quarry Inspector has not been doing his duty?—If it is his duty to look after the use of explosives, then certainly he is not doing his duty. Perhaps, like me, he has not read the Act, and does not know his duty.

304. Is it not impossible to have the same sanitary arrangements in a tunnel as in a mine—there is not the room?—Yes, there is more room. They have got to make the room in a mine. They could make it in the tunnel just the same. We have never approached Mr. McLean on that point.

305. *Hon. Mr. R. McKenzie.*] When you and others interviewed me as Minister of Mines about this tunnel, with a view to having it brought under the Mining Act, there was no legislation in New Zealand controlling tunnels at all?—No.

306. Did I express the opinion to you then that there ought to be some regulation?—Yes.

307. And did I say that I would recommend the Government to bring in legislation dealing with the question?—Yes.

308. Do you know whether that was before or after the Quarries Act was passed?—That would be before.

309. I took the earliest opportunity in dealing with quarries of defining all tunnels as quarries, so that they would be controlled by the Quarries Act?—Yes.

310. So that really the legislation I had in view then has been placed on the statute-book?—As far as inspecting tunnels is concerned, we know what to do now; we will stir up the Inspectors and see that they do it.

311. Mr. Fraser asked you if co-operative gangs had a right to select their own mates. Is it not a common practice on co-operative works for men to leave in order to go shearing and harvesting? Some men leave every gang?—Yes.

312. That is a common practice and always has been?—Yes.

313. The men who are left in the gang have a right to put on any one they can get to take the place of a man who leaves?—If they wanted to put anybody in I have never known it to be disputed; but sometimes men are put in whom they do not want, and they are not consulted.

314. It is necessary for the Government Engineers to have the work carried out with reasonable speed, and if the gangs fail to find men do they not apply to the Engineer to send them men?—Yes.

315. And if the men that the Engineer sends them turn out to be unsatisfactory, they have a perfect right to vote them out?—Yes, they have always been given that right, but it is a right that you do not like to enforce.

316. When different gangs are getting the same rate for work in cuttings or embankments, one will earn on an average 10s., or 11s., or 12s. a day per man, and another 4s. or 5s.?—There is a good deal of difference in men, but there have been times—and I have interviewed you before in regard to the matter—when it has been reported that men were working under similar conditions and one gang was making considerably more than another; but this was not exactly the

case—the conditions were not similar. In any case, however, there is a great difference in men. Where some will make 12s. a day others will make about 7s. on the same work.

317. That is really a matter that rests in the men's own hands?—Yes.

318. Under the way in which the gangs are arranged, is it not always the practice to allow the best men to get together and the inferior men to get together?—It is not the practice now, but it does work out in that way. In some cases there are parties of men who have had nothing to do with the picking or been consulted in any way.

319. The best men would naturally come together, and would not have the inferior men working with them?—Yes.

320. Do you think there is anything in the contention that the best men are exploited to the benefit of the inferior men?—There may be isolated cases.

321. Do you think the men would stand it for any length of time?—They would get out of it.

322. As a matter of fact, the men want fair play, do they not?—Yes.

323. And will see that they get it?—Yes. Before I go there is one point I want to raise in favour of the men at Otira. Of course, the contractor cannot help it, but every man on the works has to pay for oilskins. The men are taxed to the extent of about 3s. or 4s. a week for this—a tax that other miners have not got to pay.

324. *The Chairman.*] That was not included in the demands in any way?—No; we have not asked anything on account of that.

FRIDAY, 13TH SEPTEMBER, 1912.

THOMAS JOSEPH MALLOY examined. (No. 10.)

1. *The Chairman.*] What is your occupation?—At present I am doing nothing. I was at the time in question a boot-importer.

2. You have a statement to make?—I have briefly to state that in November, 1908, I had occasion to make a trip to Otira, as president of the Inangahua Miners' Union, to get evidence there to bring before the Arbitration Court sitting in Greymouth on the 19th of the same month. Certain facts were brought under my notice with regard to the conditions at Otira at the time. Evidence necessary to produce before the Arbitration Court was also brought under my notice, and other statements. At the sitting of the Arbitration Court in Greymouth, when Mr. McLean was being examined by myself, I touched upon the fringe of the present application. When referring to the financial part of his contract I asked him if he could state what the Government Engineer's estimate was for the piercing of this tunnel. He said he could not say. I asked him if £540,000 was correct. He said he did not know. I asked him then what was Mr. Bogue's estimate. His reply was that he did not know. I asked him if it was not a fact that he was receiving £600,000 for the completion of this tunnel. He admitted that to be approximately correct. I asked him if he did not anticipate receiving an additional £50,000 for the electrical plant and power-house.

3. Did he reply to that?—I think he said "No."

4. *Hon. Mr. R. McKenzie.*] Was this evidence taken down or printed?—Part of it. I have part of it now. I asked Mr. McLean if it was not a fact that he anticipated having this contract broken and receiving an additional £100,000. His reply to that was that it was preposterous. I could not touch upon the matter any further, for the reason that it did not bear upon the case. I contented myself by writing, in 1909 or the early part of 1910, to the secretary of the Trades and Labour Council, Wellington, bringing under his notice that sooner or later the contractor for the Otira Tunnel would be found making application for the cancellation of the contract. I urged him to bring this matter forcibly under the notice of the Wellington parliamentarians with a view to creating a very strong opposition to any such proposal. In the same years of 1909 or 1910 I brought the same matter under the notice of Sir Arthur Guinness as to what would eventuate with regard to the Otira Tunnel—that an application would be made for cancellation of the contract. I urged upon Sir Arthur Guinness to give it a very short shrift if it came before the House. In 1910 Mr. John Graham, late member for Nelson, was strolling down the street one day in company with Sir Arthur Guinness. I was introduced by Sir Arthur to Mr. Graham. I pointed out that in the course of time he would be confronted with an application from the contractor for the Otira Tunnel to have the original contract broken. I asked him, in the interests of the people of the Dominion and of his constituents, to oppose it for all he was worth. I pointed out that from statements that had come under my notice—that is to say, circumstantial evidence—there was a likelihood that the Government would be asked, in the event of the original contract being broken, to allow the contract to proceed from the Otira side only, for nature would there do the work that men and machinery are now called upon to do in the way of pumping. I asked him to oppose it, for the reason that in all probability it would take ten or fifteen years to complete the tunnel from the Otira side, and, further, that this Dominion might be landed in a cost of a million pounds before the tunnel was completed as an effect of the original contract being broken. He replied that he was surprised; however, he said, he would take a note of it. I urged him that day to take note of what I was bringing under his notice, in the interests of the people of the Dominion. That was my statement to Mr. Graham then. The letter that I wrote to the Trades and Labour Council in 1909 or the early part of 1910 runs in the same direction. It pointed out, in addition to what I have said, that the contractor anticipated receiving an additional £100,000 in the event of the contract being broken. I should like you gentlemen, if Mr. Graham is in Nelson, to subpoena him—

Hon. Mr. R. McKenzie: He is in England.

Witness: —to verify the statement I have made. The information was given to me in Otira. The plans of this application were practically laid, as far as I could understand, in 1908, for the reason that it was disclosed to me in November, 1908—on the 17th day of November, 1908.

5. *Mr. Seddon.*] What disclosure?—That this application would be made; and the fact of the application being now before Parliament is proof to a certain extent that the circumstantial evidence that was given to me at the time was running in the right direction. Before I used it I had it verified by a person occupying a position. In asking this gentleman with regard to the progress made at the Otira Tunnel, I said that it would be a very good thing for the contractor if the contractor could arrange to drive the tunnel from the Otira side; it would mean a considerable saving if he could abandon the Bealey end; he would have his own time, I said, to drive it, and probably would be able to get an additional amount on top of the £600,000. This gentleman asked me, "Have you been in conversation with Mr. McLean?" I said, "No, I had not"; but I had received—as I said before—an outline of the future programme of the contractor. Hence my moving in the matter, or, as I said before, writing to the secretary of the Trades and Labour Council with a request to oppose any alteration in the contract, and speaking to Sir Arthur Guinness and Mr. Graham. In proof of that I produce this paper [newspaper produced]. I could not get the whole of the papers touching upon this arbitration case.

6. *The Chairman.*] You produce the *Greymouth Evening Star* of the 20th November, 1908?—I have the *Star* of the 18th November in addition, but that of the 19th, unfortunately, I have lost.

7. You desire to refer the Committee to the *Greymouth Evening Star* of the 18th and 19th November, 1908?—Yes. I will read you from the *Star* of the 20th November one little paragraph in the report of the Arbitration Court proceedings, showing that I touched practically upon the present application. Mr. McLean in his evidence says, "The idea that he expected to make £100,000 through abandoning the contract was preposterous."

8. You have another paper?—I have the *Star* of the 18th, but not with me.

9. What do you draw attention to in the paper of the 18th?—Nothing; but you may be able to find something there bearing on this case.

10. You do not point to anything particular?—I have not looked over it. I knew that this paragraph here was in the paper, for the reason that I had referred to the contractor's future programme or plans sketched out in 1908. I think the real question was, "Did he not expect to make eventually £100,000 through the breaking of the contract?" I think those are the exact words put to Mr. McLean by myself in the Arbitration Court in Greymouth.

11. Have you anything further to say?—Nothing, except that I should like the letter that I wrote to the secretary of the Trades and Labour Council produced; and I should also like, if it is possible, to get Mr. Graham to verify what I have stated.

12. *Mr. McLean.*] Will you give your exact reasons for making such a statement?—

13. *The Chairman.*] At that time?—In 1909, when seeking information for the Arbitration Court, Mr. McLean's underground manager disclosed to me—

14. *Mr. McLean.*] What was his name?—Mr. H. Baghurst—disclosed to me a conversation that had taken place between Mr. McLean and himself.

15. *Hon. Mr. R. McKenzie.*] Where is he now?—I could not tell you. In all probability he would be on the Coast. If I had been asked at the time to suggest any witnesses I certainly might have been able to trace him. You will see his name in print as giving evidence at the time in the Arbitration Court. He was underground manager for Mr. McLean. He stated that they were constantly exchanging opinions, he and Mr. McLean, and when I was soliciting information on this particular occasion he brought this matter under my notice. He said that Mr. McLean had unfolded to him his future programme—that if he (Mr. McLean) encountered the same quantity of water at the Bealey side, necessitating expensive pumping machinery, and so forth, it would be grounds for making application for the cancellation of the original contract, with the right to drive from the Otira side only. That was Mr. H. Baghurst's own statement to me.

16. *Mr. McLean.*] Then all this statement that you make is merely hearsay?—I told the Committee before that it was circumstantial evidence.

17. You have no real solid facts to ground your statement on?—I have the fact before Parliament now—that you have made the application projected then.

18. I am going back to the time. I want to know whether you have any solid facts to warrant you in making that statement at the time?—I had the facts, as I said before, from your manager—the confidential plan disclosed by you to him, which I made reference to in the Arbitration Court, and you did not pull me up standing when I asked you the question; you said, "Preposterous." As I told you, I had the circumstantial evidence, which I did not use to any great extent in the Arbitration Court, and I was perfectly satisfied, for the reason that it was practically confirmed by another person occupying a high position, whose name I am not going to disclose, unless you gentlemen put me on oath and allow me to cross-examine Mr. McLean.

Mr. McLean: Mr. Chairman, there is some kind of reflection—if you do not mind my making a statement—evidently cast on me personally and on the firm generally, and it is absolutely necessary, I think, that this matter should be cleared up. If this is going to have a bearing on the case I would suggest that Mr. Baghurst be called and all the evidence that Mr. Malloy can bring forward, and I should like the evidence then taken on oath.

Hon. Mr. R. McKenzie: Mr. Malloy prefers to have his evidence taken on oath, and Mr. McLean asks for it, and I think it should be allowed.

Mr. McLean: I have no objection.

The Chairman: There is no objection.

Mr. McLean: I will ask Mr. Malloy, then, for any further information that he has had besides this from Mr. Baghurst.

The Chairman: That being so, and Mr. Malloy wishing it too, we will administer the oath to Mr. Malloy.

[At this stage Mr. Malloy was sworn, and the reporter read out the evidence already given by Mr. Malloy.]

19. *The Chairman.*] You have heard the evidence read over by the shorthand-writer before you were sworn, Mr. Malloy?—Yes.

20. Is that correct and true?—Quite true.

21. *Mr. McLean.*] Who was Henry Baghurst? What was his occupation at the time?—He was underground manager for McLean and Sons.

22. Do you know that he was underground manager?—I do, from his own statement.

23. You do not know yourself that he was underground manager?—From the fact of his admitting—

24. But you do not know yourself?—I only know from his own statement in the Arbitration Court.

25. Was he president of the local union at the time?—Yes, at one time he was. I would not say he was at this particular time.

26. He was a member of the union at the time?—Yes.

27. You yourself do not know whether he was underground manager or not?—No.

28. Who was the other gentleman that you refer to as confirming the statement?—John J. Jack.

29. What was he?—I could not tell you. He was in your employ.

30. Was he a member of the union?—Yes, he was.

31. You do not know what he was or anything about him?—I do not know what position he occupied in your employ.

32. You knew that he was in our employ?—I understood that he was. I knew that he was working somewhere in the tunnel.

33. Are these the only two sources that you obtained that information from?—Yes.

34. John J. Jack and Henry Baghurst?—Yes.

35. Will you tell the Committee just exactly what Baghurst said—his exact words?—When Mr. Baghurst was giving the information with regard to the wages question he mentioned to me a private conversation with Mr. McLean when they were exchanging opinions with regard to the tunnel. He said, “Mr. McLean has in view the question of approaching Parliament to have his contract cancelled in the event of his encountering the same quantity of water at the Bealey end as we are now encountering at the Otira side. He says that if he can succeed it will enable him to get an additional £100,000, and also the right to drive the tunnel from the Otira end, which will give him his own time in which to complete it.” Those were the exact words used to me.

36. Will you state exactly what Mr. J. J. Jack said?—He confirmed that.

37. In the same words?—Practically the same. I read it out to him.

38. *The Chairman.*] You say that you read it to him?—Yes. I had taken it down at the time for the purpose of picking out what I required in the Arbitration Court. I said, “Do you know anything about this, Mr. Jack?” And he said, “Yes, this is the plan disclosed by Mr. McLean.” Beyond that I know nothing.

39. *Mr. McLean.*] Disclosed by me to whom?—I could not tell you. He said, “This is the plan disclosed by Mr. McLean.” I presume he meant, disclosed to Mr. Baghurst.

40. Did he say, disclosed to himself?—Oh, no.

41. *The Chairman.*] From what Mr. Jack told you, he might have got his information from Mr. Baghurst?—I assumed at the time that it was a statement made by Baghurst outlining Mr. McLean's future plans, and that he could only confirm it from the fact of Baghurst stating it.

42. Do you know of any one else stating that Mr. McLean had disclosed his intentions—any one except Baghurst?—No, I do not. Those were the only ones I waited upon to get information from; and this, of course, did not bear on the question I had to deal with at the time, and so I did not follow it up.

43. *Mr. Nosworthy.*] You declined to give the name of your higher authority until you were put on oath. What reason have you to believe that Mr. Jack was a high authority? What was his position?—He was only a workman, but at the same time he was particularly honourable and straightforward.

44. I understood you to say that when you were put on oath you would quote some one in high authority in connection with the work at the tunnel?—Oh, no. The reason why I did not wish to disclose his name was that at the time he confirmed the statement he said, “Don't bring my name in,” for the reason that he was occupying, I believe, a fair position with Mr. McLean.

45. How do you confirm the statement, then?—He simply confirmed it by stating that it was an absolute fact.

46. But where is the confirmation?—That I could not tell you.

47. That is what the Committee would like to know?—As I said before, it was simply a statement that Mr. Baghurst had made to him disclosing Mr. McLean's plans, and he at the time was occupying a fair position with Mr. McLean. I am not in a position to say whether he had secured his information from Mr. Baghurst, or whether it was disclosed to him by Mr. McLean. I promised him at the time that I would not disclose his name in the Arbitration Court, for the reason that for his living he depended on what he was receiving from Mr. McLean.

48. Practically you are assuming the whole thing, seeing that you are not in a position to state accurately the position that Baghurst was in with regard to McLean Bros.: you are not able to say exactly what his position was with them?—I knew that he was an underground manager; that I knew.

49. You are quite positive of that?—Yes, positively sure—an underground manager or shift-boss. We term them “shift-bosses.”

50. What is the difference between a shift-boss and an underground manager?—They are practically the same on the Coast.

51. Are you prepared to swear that those were his duties?—His duties, as a matter of fact, were to supervise the working of the tunnel there underground, and for that he received a much higher rate of wages—in fact, the highest wage, I think, paid in Mr. McLean’s service at the time. He was a man Mr. McLean relied on as one possessing great capabilities with regard to tunnel-work.

52. How do you know that McLean Bros. relied upon him?—From the very fact that this man was placed in a position there in charge of men and was receiving a higher rate of wages, I believe, than most of the others. He was a man who was thoroughly conversant with tunnel-work—more so up to the time of my visits there than anybody that had been there.

53. You only are to be the judge of that question, then?—Mr. McLean was, for the reason that he “sacked” all the others, and kept this man steadily employed. I am only judging from Mr. McLean’s action with regard to the men. He dispensed with the services of all the underground managers up to this point, and kept on this man, and paid him the highest wages.

54. *Hon. Mr. Fraser.*] Do you consider, because Baghurst told you that Mr. McLean made a certain statement to him, that that is any proof that Mr. McLean did make that statement?—I had no reason to doubt it.

55. But do you consider that absolute proof?—I would accept it as proof, because he was a most reliable person.

56. And the fact of his having told Jack the same story that he told you, you would consider as corroboration of the proof?—I do not say that he told Jack.

57. From whom did Jack get his information?—I said I assumed it.

58. Well, if you assumed that he told Jack, would that be corroboration?—I should say so. It is circumstantial evidence. I should be inclined to think so.

59. *Mr. Nosworthy.*] What attitude do you take up if McLean Bros. deny it?—I should like them to deny it on oath. The fact of the application being before the House now shows that this was not a dream.

60. *Mr. Davey.*] Do you remember ever waiting on Mr. McLean, of McLean Bros., on behalf of labour, very shortly after the contract was taken?—I do.

61. Do you remember discussing with Mr. McLean the amount of money that he had taken the contract for?—Yes; only in the Arbitration Court.

62. Not at Otira?—No, not the financial part of it. I do not think that was ever touched upon at Otira, as far as I know. It may have been. I may have mentioned the sum of £600,000, but I would not swear to that. I recollect well dealing with the financial part of his contract in the Arbitration Court.

63. Do you remember attending a conference with Mr. McLean, accompanied by Mr. Kennedy, on behalf of the men?—I had no conference at all with Mr. McLean. He declined to sit in conference. We convened a meeting with Mr. McLean, together with all the workers, and it was proposed that Mr. McLean and I constitute a Conciliation Board at the time for the purpose of settling whatever little disputes there were between the contractor and the employees. Mr. McLean at that time declined to have anything to do with a conference for the settlement of any dispute; but finally he agreed to raise the wages in various departments, and that was satisfactory to the workers; the whole thing ended then. There was no stoppage of the works of any kind. Later on there was another dispute, and we then applied to the Arbitration Court for the purpose of fixing up an award.

64. During the course of that conference did you comment at all upon the amount of the contract and the Government estimate of the cost of the work?—I did in the Arbitration Court.

65. Not in the conference with Mr. McLean?—I may have done so. At that time it was an open discussion in a big shed. That would be in 1908, I think.

66. Did you say anything to Mr. McLean to this effect: You have approximately £100,000 more for this contract than the Crown estimated the cost of the tunnel to be?—Yes, I did.

67. Did you say anything to Mr. McLean as to what would become of that £100,000?—I said this: You have approximately £110,000—assuming you are receiving the £50,000—you have approximately £110,000 above the Government Engineers’ estimate for the completion of the tunnel. That was £50,000 that I reckoned he would have above the Engineers’ estimate, and £50,000 that I believed he was to receive for the electrical plant and power-house, making in all £110,000.

68. Did you suggest to Mr. McLean that as he was receiving £100,000 more than the estimated cost of the tunnel, that £100,000 should go to labour?—No.

69. Did you say to him, “You have got £100,000 more than the Crown says the tunnel will cost, and labour proposes to have that £100,000”?—No, certainly not.

70. You are quite sure?—Perfectly sure. I might mention this: the men were asking for a reduction in the number of hours in wet places to six hours—six hours to constitute an eight-hour shift—and Mr. McLean brought very forcibly under the notice of the Judge that if this were inflicted upon him it would put him to an additional cost of £60,000 per annum; and in another department where the men were asking for a rise he showed that it would increase his annual expenditure by £60,000, or £120,000 in all. The Judge doubted this, because in the award he stated that he thought Mr. McLean had overstated the amount. It was then that I asked Mr. McLean if he could not afford to recognize the six-hour shift, seeing that he was to receive so much more than the Government Engineers’ estimate, and they, when preparing the estimate, had no doubt taken into account all difficulties, foreseen and unforeseen. I said that they must have taken into account the ruling rate of wages and all the conditions to which Mr. McLean was asked to adhere to.

71. You absolutely deny, then, that you bluntly said to Mr. McLean, "You have got £100,000 more than the Crown's estimate, and labour is going to have it"?—I deny that straight out. I never made use of the words that labour must have it—never.

72. Do you remember any member of the conference that discussed the matter with Mr. McLean making use of those words?—I do not.

73. In the Arbitration Court at Greymouth was any opinion expressed by you or by others as to the general treatment the men had received from the contractor? What was the men's opinion as to the treatment meted out to them by the employer?—It was recognized by nearly every one of them that Mr. McLean was a good boss, to use their own word; as far as treatment was concerned, they could expect only fair treatment from Mr. McLean, and that the general run of them got. In the early stages of the tunnel contract the conditions were not too good, but after the complaints were made the conditions were improved, and the workers were thoroughly satisfied.

74. Do you remember any one representing the labour unions or the Federation of Labour writing to Australia and suggesting that men should not go to Otira—that the conditions were too bad to work under?—I cannot say that I know anything at all about that. But I can tell you this: Mr. McLean, in the Arbitration Court, said that too many men were applying for work, that he could not give employment to them.

75. You have been in pretty close touch with the workers, have you not?—Yes, for many years.

76. Can you tell us of any specific complaints made by workers regarding the tunnel, and what those complaints were?—Of late years I could not, but in the early stages there was a general complaint. Of late years I believe the conditions have been fairly satisfactory. During the latter part of my term as president of the Inangahua Miners' Union, when Mr. McLean had improved the tunnel and the conditions under which the workers were living in their cottages, and so forth, there were no complaints then whatever. They were all perfectly satisfied.

77. When did you sever your connection with the union?—In August—I think it was August—1909.

78. *The Chairman.*] Did you sever your connection with the union before you made the statement to Sir Arthur Guinness and Mr. Graham?—I think it was whilst I was a member.

79. *Right Hon. Sir J. G. Ward.*] What did you mean by the statement you made that if the cancellation of the contract was effected the cost of the tunnel would involve a million of money?—I said "probably." I said that if the contract was once broken we would not know where we should stand, and it might cost a million.

80. What did you base that assumed amount upon?—I assumed that if the contract were broken it would probably change hands to other contractors, who would take it at a very much higher rate; and before the work would be completed I thought there was a possibility of the whole thing costing a million or thereabouts.

81. But you have not any data upon which you could arrive at an estimate?—No.

82. It was assumption only?—That is all.

83. With regard to the suggestion you made to the Wellington Trades and Labour Council to keep their eye open for an application for the cancellation of the contract, on the ground that it would mean a further amount of £100,000 to McLean and Sons, did you mean that if the cancellation of the contract took place the Government was going to make them an additional payment of £100,000?—No. I advised them to oppose any application that might be made for the cancellation of the contract or the breaking of it in any shape or form, for the reason that that would be a ground for making application for an additional amount.

84. So you had no direct information from any one in a position of authority that would warrant any assumption that an additional £100,000 would be paid to any one?—Oh, no. It was only the statement made by Mr. Baghurst to myself, that it was Mr. McLean's confidential programme outlined to him, and that it would take place eventually.

85. Which implied in any case that the other party to the contract would have to agree?—That is so.

86. Supposing the present contractors are not able to carry on the contract, as they have declared here, in your opinion is it desirable to keep them to the contract?—Most decidedly.

87. Even though they cannot carry it on?—Yes.

88. For what reason?—I do not think it is right that an agreement should be broken. I believe that if a person takes a contract the whole of the money should be exhausted first, and he should show in that way that he is not able to complete it; and if there are bondsmen or sureties they, too, should be called upon to complete their part; and the Government should then finish the contract, charging them the difference for non-completion.

89. The contractors have stated in evidence that the whole of the £45,000 capital of a company that was created when they were in difficulties to enable them to carry on has been expended, and that the members of the company who provided the £45,000 will provide no more. What I want to ask you, as a representative worker, is, is it in the interests of the country that men who cannot carry out a contract should be kept hanging about for the next twelve months and the work in an important tunnel suspended?—Assuming that there is, say, £300,000 of unexpended capital, I am of opinion that it is in the interests of the country for the contractor to proceed with that work until that money has been expended, and then show, after the expenditure of that capital, that he is not in a position to go further. If labour troubles, as alleged, be the cause, the Government will have the same troubles and conditions to work under.

90. The contractor has stated here that the £45,000 has been expended, that the money advanced by the Government against the boring plant and machinery has been expended, and that the progress-payments made to date have been expended?—I presume there is an unexpended amount of approximately £300,000.

91. *The Chairman.*] Where is it? Where is the money—in the hands of the Government?—Yes.

92. *Right Hon. Sir J. G. Ward.*] Not in the hands of the contractor?—No, in the hands of the Government. I contend that any person having a contract and having the Government at the back of him with £300,000 can always finance against a sum of money like that to enable him to carry on.

93. If the Government do not get work done in return for the amount that is unexpended it is quite certain that no further progress-payments can be made. So in what way would that be of assistance to the present contractors?—The Government will find themselves in the same position, then.

94. I mean that the present contractors in that case could not carry on. You see the £300,000 is in the hands of the Government. The point we are inquiring into is whether the contractors should be compelled to carry on, or what the alternative is; and what I am asking you, as a representative worker, is whether in your opinion it is desirable to suspend the whole of these operations for a period in consequence of a deadlock which has arisen through the difficulties of the contractors?—I do not think it is.

95. Are the workers indifferent as to whether that work should be proceeded with or not?—No, as far as I know they are very strong on the point that it should be proceeded with, and that the original contract should be proceeded with without any deviation at all.

96. Even if the contractors cannot carry it on?—Just so.

97. *Mr. Reed.*] You say that it is incorrect that you told Mr. McLean at a meeting that labour intended to get the difference between the Government estimate for the work and the amount of the contract?—I never mentioned any such thing.

98. This is what Mr. McLean, in his evidence before the Committee, said: "I met this gentleman in conference with the men. He could not give any reasons why we should increase wages or make the conditions better, but he finished up with saying that he would call all the men out on the following day, and would set the telegraph to work to stop men coming altogether, and he completed his statement by saying that we had got £100,000 more than the Government estimate, and that they were going to have it"—That is incorrect. I should like Mr. McLean to be on his oath and made to swear to that. I can produce, then, before this inquiry closes a detailed published account of the conference or meeting, and you will find that this account runs in a different direction altogether.

99. *Mr. Davey.*] Were there reporters present?—There was a reporter from the *Canterbury* side, I believe, for the reason that there was a full detailed account published in the *Canterbury Times*. There was some person reporting it for the *Canterbury Times*, for a detailed account appeared in that paper.

100. *Mr. Reed.*] What date?—I could not tell you from memory.

101. Do you remember who were present at that meeting?—About eighty or ninety men, I think, were present, and a gentleman occupying a high position in connection with the railway—Mr. Vickerman.

102. Was he present?—Yes.

103. He would know what took place, would he not?—I do not know, for the reason that he had to be called to order.

104. Mr. Vickerman also gave evidence before us, and this is what he said, that you addressed Mr. McLean, and made a statement to this effect: "We have got a copy of the Government estimate from Wellington, and we know what they thought they could do the tunnel for, and we now see that you have got £100,000 over and above their estimate, which no doubt you look on as your profits, and we hope now to share with you in those profits"—That is positively a misleading statement, and I should like both gentlemen to swear on oath that those statements are correct.

105. Both of those statements were made to us?—Both are incorrect.

106. Mr. Vickerman has no interest in this matter?—He was a personal friend of Mr. McLean's at the time. There was a little difference between Mr. Vickerman and myself on this particular occasion.

107. You have no recollection of any such statement being made?—I swear positively on oath that it was never made.

108. What is the date of that *Canterbury Times*?—That I could not say. I saw the paragraph some time afterwards.

109. What date was it that you were there, when this interview took place?—That would be about August, I think, 1908.

110. *The Chairman.*] Mr. Vickerman said that it was a Sunday?—Yes, it was a Sunday.

111. *Mr. Reed.*] You stated, if I understood you correctly, that the underground manager, Baghurst, informed you that Mr. McLean was going to make an application for cancellation of the contract, and would thereby gain £100,000?—No.

112. I am wrong, am I?—In one part. I was told that Mr. McLean had stated to the underground manager that he would make application for the cancellation of the contract in the event of their encountering the same quantity of water on the Bealey side as they had so far met with, and when once the contract was broken he would be enabled to make application for an additional £100,000 for completion, and the right to drive from the Otira side. That is what I said.

113. It comes to this: that at that time you assumed it would mean a benefit of £100,000 to Mr. McLean?—Yes, assuming he could get the contract broken.

114. Was that the reason why you were anxious that the contract should not be broken, so as to prevent Mr. McLean from getting £100,000?—No. The reason I impressed on Sir Arthur Guinness was to see that the work was pushed on at a rapid rate without any violation at all of

the contract. It was not a question of the £100,000. It is immaterial to me whether the contract is broken or proceeded with, but at the time I was urging on Sir Arthur Guinness and Mr. Graham to oppose any application, for the reason that the people on the Coast wished to see the tunnel pierced within the contract time.

115. Then you were not concerned whether it was a matter of the contractors getting profit or suffering a financial loss, and thereby coming to a complete standstill? In both cases you were equally against their being relieved from the contract?—No, I am not, for the reason that I assume they have plenty of cash. There is the fact of their having £300,000 to draw.

116. *Hon. Mr. Fraser.*] But they have not got that?—They have to a certain extent; I assume they have to a certain extent.

117. *The Chairman.*] They have to give £300,000 worth of work for that before they get it?—Just so.

118. *Mr. Reed.*] Will the workmen wait for their wages until the completion of the contract and the whole of the money is paid?—I could not speak on behalf of the workmen, for the reason that I am not identified with them.

119. But can you not see that wages must be paid every fortnight?—That is so.

120. The wages-money has to be found, and no advance payments will be made by the Government until the work is done. Therefore they must have capital over and above what they expect from the Government, otherwise they cannot carry on?—I realize that Mr. McLean is a good financier, and I assume that he could finance as the work goes on by reason of this money coming to him eventually.

121. Were you opposing the breaking of the contract on account of the increased price that you thought Mr. McLean was going to get, or was it simply because you did not want to see the contract stopped?—Because I did not want to see the contract stopped. I am not opposed to Mr. McLean receiving a higher price—in fact, I should like to see him receive sufficient so that he can proceed with the tunnel; but in the interests of those coming behind us, I want to see the tunnel proceed as fast as possible. You asked me a question with regard to the published paragraph. In the same *Canterbury Times*, about twelve months after the conference, there appeared an interview between the editor or a reporter and Mr. John McLean, giving a detailed account of the progress made with the tunnel. It pointed out the good relations that then existed between the contractor and the employees, and the statement was made by Mr. McLean that he expected to have the contract well on the way within the contract time. I also desire to say this: that I would like you gentlemen, before you consider the evidence of Mr. McLean, to take it on oath. I would also ask you to call Mr. Vickerman, as I should like to put a few questions to him to refute the statements that he made.

122. *Mr. Seddon.*] When did you first meet Mr. McLean?—I think, about August, 1908.

123. Was that at a conference?—It was at a meeting, and we suggested a conference. It was proposed by one of the workers—I think it was Mr. McLean's shift-boss—that Mr. McLean and I constitute a conference to deal with the matters then in dispute. But Mr. McLean said, "I positively decline to sit on any conference at all. I will have nothing at all to do with it or with the Arbitration Court. I will not be bound in any shape or form by any Court." That was the statement. You will find it in the *Canterbury Times*.

124. Were you then at Otira?—Yes. We had a meeting in the cement-shed, when some eighty workers were present.

125. Did you afterwards meet Mr. McLean in conference?—No, I did not. He wrote me a short letter setting out what he was prepared to give—an increase to the shift-bosses and the machinememen.

126. He addressed you as president of the Miners' Union?—Yes.

127. Then the proceedings in the Arbitration Court followed?—They followed in November, 1908.

128. Had you any feeling against Mr. McLean?—None whatever. I have always respected Mr. McLean and held him in the highest esteem.

129. As to your conversation with Baghurst, how did it take place? Did he approach you about this matter?—No. As I said, I was soliciting information with regard to the conditions at Otira, for the purpose of using it in the Arbitration Court.

130. For what purpose?—For the purpose of building up an award; and this statement was made to me by Mr. Baghurst, he thinking that it would be of some use in the Arbitration Court.

131. Did you see Baghurst at Otira?—Yes.

132. Was it in the tunnel?—No, in the hall there.

133. You had a general talk about other matters before this particular question cropped up?—Yes; he and I looked about selecting people who might give evidence in the Court.

134. Was this the first occasion on which you heard of the alleged plans of Mr. McLean?—Yes.

135. How did you come across Mr. Jack's statement? Did he voluntarily give that to you?—At the same meeting—for the reason that I asked him.

136. Was it a meeting where other miners were present?—No.

137. Just the two of you?—That is all. We had a meeting in the afternoon. I asked the gentlemen present to pick out the best witnesses they could find. There were about half a dozen proposed, and Mr. Jack was one. After the meeting Mr. Baghurst came, and I said, "I will take each one's statement in order." I had taken their statements, and Mr. Baghurst made this statement to me, which he said was given to him by Mr. McLean at the time. He said, "Will this be of any use to you in the Arbitration Court?" I said, "No, but it will come in useful afterwards if there is an application made for the cancellation of the tunnel contract or the stoppage of the tunnel."

138. Was Mr. Jack then secretary of the Miners' Union? There was a union at Otira then, was there?—No, he was not secretary then.

139. He afterwards became secretary, did he not?—I think, about twelve months afterwards.

140. Do you know where Mr. Jack is at present?—I could not tell you. He may be in Mr. McLean's employ for all I know.

141. As soon as you got this information you wrote to the Trades and Labour Council of Wellington?—Some time afterwards.

142. Your motive was just to do a public service?—That was all.

143. There was nothing against Mr. McLean?—Nothing whatever.

144. Do you know Mr. Paddy Webb?—I know him by repute and that is all.

145. *Hon. Mr. R. McKenzie.*] You say that Baghurst was manager for McLean and Sons?—Underground manager.

146. According to the Press report that you put in, Mr. Pryor conducted Mr. McLean's case in the Arbitration Court at Greymouth?—Yes.

147. Did you see in this paper of the 20th November, 1908, Mr. Pryor's statement that Baghurst had authority to dismiss men?—Yes.

148. Would that convey the impression that Baghurst was in some position of authority for Mr. McLean?—I should think so.

149. Was he in Mr. McLean's employ when he gave you this information?—Yes, he was working there.

150. You asked him when he was Mr. McLean's manager, and he was giving you this information to work up a case against Mr. McLean?—He gave it to me thinking it might be of some use in the Arbitration Court.

151. You also assumed—or Baghurst gave you to understand, evidently—that if they met with as much water at the Bealey end as at Otira, this application would be made: this application would be contingent on the quantity of water met with at the Bealey end?—That is practically the statement.

152. Was the Bealey end of the tunnel started at that time?—They had started; the preliminary works were going on. I think they were about to start and break out.

153. You do not know whether the heading was started?—I do not think it was. I think they were then about to start it.

154. Are you a miner?—No.

155. Consequently you would not be in a position to say whether it would be an advantage or a disadvantage to Mr. McLean to drive the whole tunnel from the Otira end, or drive a portion of it from the Bealey end?—It would be an advantage to the contractor to drive from the Otira end only, for the reason that nature would do the work that human beings would otherwise be called upon to do, and with machinery. You could dispense with all that.

156. What could you dispense with?—Pumping-machinery, and so forth, if there is any necessary, and the number of hands employed in connection with it.

157. Supposing you had to drive five miles of tunnel from one end, would it not cost you a great deal more for ventilation than if you had to drive only three miles?—I do not know that it would.

158. Would it not cost you a great deal more to run your spoil out five miles than three miles?—I do not know that it would. It is a down grade.

159. Do you know what progress-payments are made to the contractors on the work?—No, I do not.

160. So that your contention that there is £300,000 of contract money still available as far as the contractors are concerned does not carry much weight?—No; I only assume there is about half the money spent.

161. You said in the Arbitration Court, I think, that they had received £50,000 extra for the water-power plant: where did you get that information from?—I said I assumed they were going to receive an additional £50,000, for the reason that I had a faint recollection of its having appeared in *Hansard* when the contract was let that the Government would take over the electrical plant and power-house at that figure.

162. Do you know as a matter of fact whether they have received anything at all for it?—I am sure they have not, for the reason that the work is not finished.

163. You do not know whether they are likely to receive any?—If they abandon the contract, naturally they will not.

164. So that you are not in a position to say anything definite as to this application for an additional £100,000, except what you have on hearsay?—I did not say there was going to be an application for £100,000. I said there would be an application made for the cancellation of the contract, and that the £100,000 application would follow. That was the statement made to me by the underground manager, alleged to have been given to him by Mr. McLean.

165. That was at the latter end of 1909 or early in 1910?—About then.

166. The date of your letter to the Trades and Labour Council here will give us the date?—Yes, if they have the letter still.

167. *The Chairman.*] In the Arbitration Court, when Mr. McLean said it was preposterous that he intended to throw up the contract, why did you not follow up the question and ask him if he had so arranged or so intimated his intention to Baghurst?—Because it did not bear on the case before the Court.

168. But you began it?—I simply referred to the financial part of it. He made the statement that if he were saddled with the £60,000 the contract would not stand it.

169. He denied that he intended to throw up the contract?—Yes.

170. And you did not pursue it any further?—No.

171. Were you stopped by the Court?—No. Well, I have a faint recollection now—I do not know whether it was at that stage—the Judge remarked that it had no bearing on the case.

172. *Hon. Mr. Fraser.*] How long had you known Mr. Baghurst before he gave the information to you?—About twelve months, I think.

173. You thoroughly believed his statement?—I had no doubt about it. I knew him to be honourable, as far as his statements were concerned.

174. I think you mentioned that he stated that Mr. McLean had told him this in confidence?—Yes, he had a confidential chat with Mr. McLean; they were exchanging opinions from time to time with regard to the working of the tunnel, and so forth.

175. And you think it is a characteristic of an honourable man to repeat a confidential conversation to another, in order to work up a case against him?—No.

176. Then, does that change your opinion about his being an honourable man?—I said that with regard to his statements he was honourable. And it was not with a view to working up a case against Mr. McLean. He simply asked me if I thought there was anything in that that would be of advantage in the Arbitration Court.

177. Do you think he was at liberty to repeat a confidential conversation, supposing it had occurred?—I cannot say that it was confidential, beyond the fact that he said he was accustomed to chat confidentially with Mr. McLean.

178. *Mr. Nosworthy.*] When you were told that that was confidential information, did you not think it the right thing for you to go and ask Mr. McLean whether it was true or not before you made it public?—It was not given to me in confidence.

179. He told you that it was given to him confidentially?—Yes—that he was chatting confidentially with Mr. McLean—I do not know if it was on this particular occasion that he was chatting confidentially, but that he was accustomed to chat confidentially with Mr. McLean and that Mr. McLean had disclosed to him his future programme. He gave me the right to use that information in the Arbitration Court if I found there was anything in it of any value.

180. *Hon. Mr. R. McKenzie.*] Did you make inquiries with a view to seeing Mr. McLean before you came to this Committee?—No.

181. Did you make inquiries as to where he was staying, or express any desire to see him?—No, I did not know that Mr. McLean was in Wellington.

TUESDAY, 17TH SEPTEMBER, 1912.

ROBERT WEST HOLMES, Engineer-in-Chief, Public Works Department, examined. (No. 11.)

1. *Hon. Mr. Fraser.*] You made an estimate of the cost of constructing the Otira Tunnel, did you not?—Mr. Hay, my predecessor, did.

2. Did you look through the figures at all and check them in any way?—I have looked through them since. I did not at the time the estimate was prepared.

3. What is your opinion as to the basis of that estimate, judging by what you have seen of the tunnel since the work was started? I presume you have examined the tunnel?—Yes. At the time the estimate was prepared I judged that the figures were reasonable, and that under ordinary circumstances the work could be carried out for the estimate; but from experience gained since I have every reason to change that opinion.

4. What was the original estimate?—£500,000.

5. You now believe that the estimate was founded upon data which experience has proved to have been incorrect—data as to the character of the work: is that what you mean?—No. The difficulties that have occurred have been principally in that there is not sufficient labour to man the works properly. If there had been sufficient labour to properly man the works I think the basis on which the estimate was prepared would have proved correct and reliable.

6. You mean that, as regards the character of the country to be tunnelled through and the quantity of water to be dealt with, experience has not shown them to be greater than was supposed to be the case when the estimate was made?—That is so.

7. But the factor of not being able to get sufficient labour was not sufficiently taken into consideration when the first estimate was made?—That is so.

8. To what extent do you think the alteration in that factor has affected the cost of the work so far?—I am hardly prepared to answer that question.

9. Have you been examining the tunnel at all, or is it simply that you have taken the reports of your subordinates?—I have been down there several times.

10. How often?—At least once a year, sometimes twice.

11. What was your opinion as to labour there on each occasion when you went?—It appeared to me that there were not sufficient men to properly man the works, and unless they are properly manned the contingent expenses bear too great a proportion to the whole cost.

12. What was your impression of the manner in which the work was being done?—I am of opinion that the work is being carried out in a perfectly satisfactory manner, and that the contractors have been using every endeavour to push it on, and using the best plant obtainable for the work.

13. Had you occasion at any time to remonstrate with the contractors with regard to the manner in which the work was being done or to the want of speed in doing the work?—No, I have not had occasion to remonstrate with them, except with respect to a few minor details.

14. When did you first realize that there was a probability that the contractors would not be able to complete their work within the specified time?—At least three years ago.

15. How long is it since they first commenced the contract?—Five years; at least it is five years last month since the contract was signed; it was about twelve months afterwards before they actively commenced work. They did some work of a preliminary character.

16. Was that delay in starting justifiable delay?—I think so. Under ordinary circumstances it takes at least six months to obtain plant from England or Europe, and in this instance Mr. McLean made it his business to visit Europe for the purpose of inspecting the large tunnel-works which were in progress there, in order to make himself acquainted with the most modern method of carrying out such work. His doing that enabled him to prosecute his work in a better manner than he otherwise would without the knowledge thus gained.

17. When fixing the time for the completion of the contract was it assumed that work would be started and continued from both ends of the tunnel?—Yes.

18. And that they would meet about the centre?—No; we reckoned that from a quarter to a third would be completed from the Bealey end, and the balance from the Otira end.

19. Would that factor alone—that three-fourths of the work had to be done from one end—not increase your estimate of the cost?—We took that into consideration, or, rather, Mr. Hay did.

20. Your estimate was £500,000: the price the lowest tenderer got was very nearly £600,000?—Yes.

21. Would that difference of £100,000 have been sufficient to compensate for the loss sustained through not having a full complement of men?—It is rather a difficult question to answer. I should feel inclined now to say that our estimate was too low, without the difficulties that have arisen regarding labour.

22. Do I understand from you, then, that, apart from the difficulty of obtaining sufficient labour, there are other factors which have made it more expensive for the contractor to complete the work than were taken into consideration at the time the estimate was prepared?—Yes.

23. Would you mind stating what these are?—There seems to have been a general increase in the cost of carrying work out, judging by what it has cost us to carry out other tunnel-work throughout the Dominion.

24. There has been an increase in the cost of work of this description since the contractors signed this contract?—Yes.

25. What would that increase amount to, approximately?—The highest cost of constructing a tunnel on the same line of railway, near Broken River, about the time this contract was let was about £32 per lineal yard. Since then the size of the tunnels has been increased slightly, but tunnels in similar country now are costing us £40 and £41 per lineal yard. The increased cost is not accounted for by the increase in the size of the tunnel; so there are other factors helping to cause the increase. What they are it is rather difficult to say.

26. But there they are: you know that as a fact?—Yes.

27. Do you know for what distance the tunnel has been pierced from the Bealey end?—About 26 chains, I think.

28. In the four years they have been at work could they have pierced that tunnel to a greater length at that end?—Yes, I think so.

29. What were the difficulties in piercing the tunnel at that end, do you know?—I do not quite know. I have never been able exactly to realize the difficulties the contractors have experienced.

30. Was it through excessive water accumulating at that end?—No, there is no excessive water—nothing out of the way.

31. They were able to control the water?—Their plant is more than ample to deal with any water that they have encountered so far.

32. Do you think, from your knowledge of the locality, that it would have been as easy to pierce the tunnel from the Bealey end as the Otira end?—Oh, no. It is easier to work uphill.

33. Would the difficulties in working down hill be such as to justify their hope of being able to pierce the tunnel almost entirely from the Otira end?—I do not think so.

34. I mean, at the same cost?—I think it could be pushed on at the same cost from the upper end under the conditions that are existing.

35. You have examined the Bealey end?—Yes.

36. Are you satisfied that work at the Bealey end could be pushed on without much greater expense than from the Otira end?—It would cost more, but not a great deal more, I think.

37. There would be the haulage of the spoil uphill?—Yes, there would be greater haulage.

38. At the other end it would run out by gravitation?—Yes.

39. But the actual working of the face?—I do not see why that should cost any more.

40. Can you account in any way, then, for the fact that such a short distance has been pierced at the Bealey end?—No, I cannot. The reason that has occurred to me is that the contractors have considered it to their advantage to prosecute the work from the Otira end at a greater rate than from the Bealey end. That is their business, of course; it is not a matter for the Government to interfere with.

41. *The Chairman.*] There are no provisions in the contract directing that?—No.

42. *Hon. Mr. Fraser.*] There is a waterfall somewhere over the course of the tunnel, is there not?—There are several waterfalls.

43. Is there not one particularly big one?—There is the Punchbowl. It is not a very large waterfall: it is a high one.

44. Is there a large volume of water?—No, not a very large volume.

45. Does that water flow over the course the tunnel will take?—It flows over the top of the tunnel after it has fallen.

46. The tunnel would be constructed below where it strikes the ground?—Yes.

47. What height is it, where it strikes the ground, above where the roof of the tunnel will be?—At least 50 ft., I think.

48. How far would that be from the Otira end? Is it nearer the Otira end or the Bealey end?—Nearer the Bealey end.

49. How far from the entrance?—I think, about 30 chains. They are within 2 or 3 chains now, I think, of the bed of the creek, with the heading—that is to say, they have to drive 2 or 3 chains further to be under the creek.

50. What would be the effect of driving from the Bealey end if you once got below that place? Is there any danger of a sudden irruption of water into the tunnel there?—Not unless there is a fissure in the rock immediately under the creek.

51. If there were a fissure what would happen then?—The water from the creek would flow in until steps were taken to stop it.

52. How could you stop it?—Probably one way would be to flume the Punchbowl Creek over the spot, and then steps could be taken to stop the crevice.

53. Would you do that after the water had come in or would you do it before?—It would have to be done afterwards, because you would not know that there was any necessity for it until the water had started to come in.

54. Supposing you happened to strike a fissure and the water came in, would there be any danger to the lives of the men working there?—I do not think so.

55. You would not think that a very grave obstacle, then?—No. I do not think there would be any very great difficulty in overcoming it.

56. It would not be a sufficient obstacle to cause the contractors not to continue the tunnel from that end?—No, I do not think so.

57. If Mr. McLean is unable to complete his contract, it has been stated in evidence that the work could be carried on as expeditiously and as cheaply by day-labour by the Government: what is your opinion on that subject?—I am sorry to differ from that statement.

58. You say that by day-labour the work could not be done so cheaply or expeditiously as by contract?—I am certain the Government could not carry it out by day-labour as cheaply as a contractor could do it.

59. Do you care to give your reasons for that?—If the Committee will excuse me I would rather not.

60. Can you suggest any other method by which it could be done? Is there any intermediary between day-labour and a large contract?—The course that I should suggest, if I were asked to make a recommendation, would be to readvertise the work and let it by contract again.

61. That you think would be the most economical method of carrying out the work?—Yes.

62. Do you think there would be a probability of people contracting for a work of that kind?—I think there would be very great difficulty in letting a contract at the present time, or even obtaining a tender for it, judging by the difficulty we have had in obtaining tenders for similar work elsewhere.

63. Do you consider that the work still to be done in that tunnel will cost more per chain than the work already done?—Certainly. All the easy part has been done—that is to say, all the short-lead work has been done.

64. How much greater do you think the cost will be to complete the tunnel now than has been the case up to the present stage?—I can hardly answer that without going minutely into the question. I should not be at all surprised at an advance of anything between 15 per cent. and 25 per cent.

65. Have you formed any opinion at all as to what time it would take to complete that tunnel now?—No, I have not gone into that.

66. *The Chairman.*] You referred to a tunnel just now on the Cass-Bealey line: £32 a yard, was it not?—Yes.

67. When was that tunnel constructed?—Just before the Otira Tunnel contract was let—say, seven years ago.

68. I understand you to say that to-day if you had to construct a similar tunnel the cost would be—what?—The same-sized tunnel would probably cost us up to about £38.

69. *Mr. Davey.*] Did I understand you to say that you questioned whether the Government could do this work by day-labour as cheaply as a contractor?—Yes.

70. Do you think it could be done by co-operative labour?—It could be done by co-operative labour—well, I have my doubts whether it could or not.

71. You think that if an attempt were made to do it by co-operative labour it could be done as cheaply?—I do not think so.

72. Supposing that Mr. McLean were separated from the contract in the future and that tenders were again called for the work, do you think it would be quite fair to call for tenders? Everybody then would know of Mr. McLean's trouble and the cost to date. Do you think it would be possible to get a tender at all for the work?—I do not think we should be able to get a tender at the present time.

73. Then, practically, it would be useless to advertise?—What I should recommend would be that nothing further be done to the tunnel for, say, two or three years, and then readvertise.

74. You recommend that the whole work be stopped in the meantime?—Yes.

75. Would that not be a suicidal policy, assuming that the State has to complete the work?—It just depends upon how much the State is prepared to expend upon it.

76. The State so far has paid, I think, something like £241,000 to the contractors?—Yes.

77. The difference between that and £600,000 has still to be expended on the work?—Yes.

78. Assuming that the calculation has been made that it will cost at the very most £750,000 to carry out the work, do you think it advisable that the Government should stop the work for three years, leaving all the plant to rust and get into disorder, and perhaps all sorts of accidents happen to the tunnel?—I do not think that anything of a serious nature would be likely to happen in that period. Steps would be taken to preserve the plant.

79. You remember that the contractor, when he put in his tender, asked for six years in which to complete the work?—I believe he did.

80. But the term in the contract was five years?—Yes.

81. And the Department asked Mr. McLean to review his tender and undertake to complete the work in five years. Do you think the Department was quite fair to Mr. McLean in asking him to complete the work in five years, seeing that he, from his practical experience, said that it would take at least six years?—I think it was a fair question to ask him. Mr. McLean was not bound in any way at the time, I understand.

82. He was when he signed the contract?—Yes. That was Mr. McLean's business. He need not have signed the contract.

83. It meant, did it not, that a very heavy fine might be inflicted on him at the end of the five years if the Government thought fit?—Yes. Of course, he entered into the contract knowing that.

84. Do you think, from your practical experience, that the work could have been completed in five years?—Judging by works that have been carried out in other countries, it could have been. We were guided by that in fixing the time.

85. With the knowledge you now possess, do you think it would have been possible to complete it in five years?—No, I do not.

86. Do you think that Mr. McLean accepted the contract at too low a price, in view of what you now know?—I think so now.

87. Despite the fact that that was £100,000 more than the estimate?—Yes.

88. I suppose it would not be quite fair to compare this tunnel with any other tunnel that you know of in New Zealand, would it?—The length alone makes a difference. There is no other tunnel in New Zealand that you can compare with it—in fact, there is no other tunnel in the Southern Hemisphere.

89. *Mr. Veitch.*] With regard to the carrying-on of the work, you suggest that we delay the calling for fresh tenders for three years. What advantage do you consider would accrue from that delay?—I would do it in the hope that conditions would have altered in that time so as to enable contractors to enter upon such a work with much greater confidence than they are inclined to show at the present time.

90. You mean that money is tight and labour hard to get?—It is labour, principally.

91. What do you think of the proposal to knock off work at the Bealey end altogether and put a full complement of men on to the lower end, and do all the work from that end, driving a heading through to the Bealey end in order to allow the water to get away?—That would require some consideration. I should have to go into that before I could answer definitely; but the lead is so short at present at the Bealey end that I should feel inclined to push on from there until some obstacle were met with that would run the cost up to a prohibitive amount.

92. Probably water?—Water would be the principal thing. The plant is all installed at that end at present—plant capable of dealing with the work and with a fair amount of water—and it would seem a pity to abandon all that plant if the work could be carried on further from that end.

93. Do you think it would be wise not to work at both ends at once, but just at one end—whichever was found the more convenient? I am thinking of the shortage of labour?—If you cannot get sufficient men to man both ends it means abandoning one end. In that case, of course, it would be better to push on from the Otira end.

94. I cannot quite understand your answer to the question about the difference between the contract system and the Public Works Department carrying on the work by day-labour. Is it not a fact that a contractor would have to pay day-labour?—Well, that is entering on a subject that I would rather be excused from dealing with.

95. Is it the position that your Department is not capable of handling men the same as a contractor would?—It almost amounts to that.

96. A contractor taking on that job now would only accept it with a very large margin of safety so far as figures are concerned. The Department surely would be certain of getting through with the job at actual cost, even though labouring under certain disadvantages?—It might. I doubt it very much.

97. You would prefer that your Department had nothing to do with the job?—Most decidedly.

98. *Mr. Seddon.*] You said that if the tunnel-work were suspended for two or three years, at the end of that time conditions would have altered: that is merely your opinion?—That is all. I did not say they would have altered; I said I hoped they would.

99. You were referring to labour-conditions?—Yes. And another point would be that the present knowledge of the contract would have been lost to a great extent.

100. What do you mean by that?—That contractors would be more inclined to speculate.

101. *The Chairman.*] The prejudice would be disappearing?—Yes.

102. *Mr. Seddon.*] You think that if tenders were called to complete the work at the present time you would not get any?—That is my opinion.

103. If the work were suspended for two or three years, what about the depreciation in the value of the machinery?—The whole of the machinery could be kept in first-class order. The only part that would materially depreciate would be the pipe-lines from the water-supplies down to the generating-stations.

104. What about the machinery outside the tunnel: would it not be necessary for an officer to look after that?—We should need a caretaker to look after it.

105. It being such a wet climate, would not the machinery be affected by rust?—Steps would be taken to prevent that.

106. Have you been to Otira Tunnel?—I was there last April.

107. Have you at any time inspected the electrical plants at the Punchbowl and Holt's Creek?—Yes.

108. Have you ever assessed the value of those plants?—Not personally.

109. Have you through your officers?—The officer in charge of the work has to do so in connection with the advances made on plant and material.

110. At what does he put down the value?—I could not tell you from memory. I should have to turn up the papers and make out a statement.

111. Do you think these plants would be of value to the Government when the tunnel was completed?—No, not unless other works are undertaken that the plants could be employed upon. They would be useless in connection with the Otira Tunnel.

112. When you were last at Otira did you go up to the work at the face?—I do not remember whether I went right up to the face. I went a good way in.

113. In your opinion has the work been pushed on as speedily as possible?—I think the contractors have pushed on at the Otira end as speedily as they were able.

114. What about the Bealey end?—I do not think they have pushed on there as fast as they might have done.

115. *Mr. Reed.*] Do you think the contractors have made any mistakes in the construction of the tunnel to bring about an increase in the cost?—I do not think so.

116. Can you account in any way for the error in the estimate of both the contractor and apparently your Department at the time the contract was entered into?—Only by the general increase in the cost of carrying out work that has taken place of late years.

117. Do you think you can explain the difference, then?—One factor is the increase in the rate of wages paid now as compared with what was paid.

118. Do you think that the original estimate was a correct estimate for the conditions then prevailing?—We all thought it was a fair estimate.

119. But subsequent experience has shown you, has it not, that the estimate was a wrong one?—Yes.

120. The increase in wages does not account for the difference that practical experience has shown to exist between the estimate and the actual cost?—That is one of the principal reasons. The other principal reason is that the contractors have not been able to obtain sufficient men to man the works.

121. Even taking those into account, an error was made in the estimate?—I do not think any error was made. I would hardly call it an error. It was thought the work could be done cheaper than has been shown to be practicable. There was no error in the quantities or anything like that.

122. Under the conditions prevailing at the time the estimate was made, was it possible to do the work at the estimated cost?—I think that if sufficient labour had been available, and the rate of wages had continued unchanged, and time was not a factor in the question, the tunnel could have been carried out for very little more than our estimate.

123. *Mr. Okey.*] Have you got a copy of the estimate that was made by the Engineer?—Not with me.

124. That could be produced?—Yes.

125. Do you know whether an estimate was made of the machinery that would be required to carry out this work?—I believe Mr. Hay went into that question, and estimated the quantity of machinery required and the cost.

126. If the Government were carrying that work out by co-operative labour, you would possibly value that machinery on completion of the contract at a certain figure?—Yes, the machinery would be sold, I suppose, and the work would be credited with the amount realized.

127. In this case you consider the machinery would be of very little value to the Government on completion of the work?—Yes. The actual value would be what we could obtain for it.

128. We have had evidence that that machinery has cost £73,000. The whole of that, or within a few thousand pounds of the whole, would have to be written off at completion?—Yes.

129. And charged to the work?—Yes, that is part of the cost of the work.

130. This is admitted by every one to be an extraordinary work. It is almost impossible, I suppose, in a work of this nature, for any engineer to make a correct estimate?—It is a very difficult matter.

131. Can you call to mind any other tunnels of this nature?—Most of them that I know of have exceeded the estimate of cost.

132. I suppose, in your experience of ordinary contracts, on many occasions a man has taken a contract and has not been able to carry it out? Such cases come before you?—Yes.

133. What do you do in those cases if the man can show that he has used every diligence in carrying out the work and meets with such difficulties as in this case? What is the usual course for the Department to take: do you bring the matter before the Minister and try to come to some arrangement, or do you increase the amount payable by a percentage?—No. We always follow out the provisions of the general conditions. When we find that a contractor is not proceeding with the work in a satisfactory manner he is served with a notice, and on the expiration of that notice the Minister exercises certain powers that are given to him. One of the powers is to relet the work; another is for the Department to carry it out.

134. If it can be shown that there is nothing to be gained by reletting the work, and the man has shown all diligence in carrying it out, and that it would be a loss to the Department to take it over—what do you do in such cases?—I cannot call to mind such a position having arisen in the Department.

135. *Hon. Mr. R. McKenzie.*] What about the Midland Railway contract?—I did not have anything to do with that.

136. *Mr. Okey.*] I want to know what is usually done in such cases as I have indicated?—I know that in several cases contractors have made mistakes either in the quantities or in the prices, but they have had to bear the brunt, or their sureties have.

137. You drop on to the sureties and you press for the last penny?—That has always been done in the past.

138. In estimating a job you might think the material to be taken out is of a certain kind, and you get into a very different sort of material altogether when you start actual work?—A contractor has to provide for that when tendering.

139. You have no compassion on the contractor when he once signs the contract—not even if it can be shown that he has done everything possible to carry out the contract, and that it would be a loss to the Government to relet it?—I have never known of such a thing happening as it meaning a loss to relet the work. We have had instances where it has cost the Government more than the original contract, after we have obtained from the sureties the full amount of their bond.

140. With regard to this Otira Tunnel, if it can be shown that the work can be completed for a further 25 per cent., say, would it not be better from the Government's point of view to increase the amount than to let the work remain and allow the machinery and pumps to depreciate in value, as they must?—That question opens up a large field. One would have to take into consideration whether it is going to pay the Government to complete the tunnel quickly or whether a long time could be taken over it. The amount of money that has been laid out on the line would also need considering, and we should have to go into the matter of the probable traffic.

141. Do you think it would have been better to have left the work alone altogether?—I am not prepared to say that.

142. I suppose there is a limit to the number of men that can be utilized in a tunnel?—Certainly. In this case they are able to work at more than one point. There are men in the advanced heading, men enlarging the arch, men taking down the side walls, men concreting the side walls, another gang putting in the arch of the work, and another gang doing the finishing-work: so that altogether you are able to employ a large number of men. Still, the whole rate of progress depends upon the rate at which you can excavate the advanced heading.

143. Do you think that if longer time were given the work could be carried on at a cheaper rate—it would not be so costly per foot?—Yes, I think so; but that is rather difficult to answer, because one would have to find out what proportion the number of men engaged outside the tunnel bore to the number engaged inside. There are certain constant expenses, and you must man the tunnel to enable those to form as small a proportion of the whole cost as possible. If you have only a few men actually excavating the cost will be abnormal.

144. You do not wish to answer the question whether it would be wise for the Government, taking all the circumstances into consideration, to give a further 25 per cent., rather than allow the work to stand over?—I should not be prepared to answer that without having time to go into the question. It would take some time to go into it.

145. *Hon. Mr. R. McKenzie.* In reply to Mr. Fraser you said that the principal difficulty was the insufficiency of labour?—Yes.

146. Do you know what the insufficiency is?—Not exactly.

147. Then you said that the principal factor in increasing the cost was the increase in wages?—Yes.

148. How do you know there is an increase in wages?—At the time the tunnel contract was let the rate of wages on the railway-works was 8s. a day.

149. Where?—On the Canterbury side.

150. But this tunnel was mostly on the West Coast side. Do you know what the rate on the West Coast side was?—From 9s. to 10s.

151. Was it not 10s.?—Not all over the Coast.

152. In mining?—I could not say what the miners were getting.

153. You are not sure whether it was 10s. or not?—I know that the general rate for labour on the West Coast has been 10s. At Westport it was 9s.

154. The men working outside are not affected, are they?—Some of them.

155. Which?—Take the men on the tip-head, for instance, and the men working at the concrete-work outside—gathering materials for concrete.

The Chairman: Take this schedule put in by Mr. McLean showing the rates of wages [document shown to witness].

156. *Hon. Mr. R. McKenzie.* Take the outside men and see what they are getting?—Some of the outside men have been increased and some have not, according to this statement.

157. Providing that the rises shown there have taken effect from last April, would they increase the cost of the work that has been done materially?—Sufficient time has not elapsed.

158. What percentage of the total expenditure would you consider a fair charge for supervision and financing expenses?—Anything up to about 5 per cent.

159. Would 10 per cent. be excessive?—I should think so.

160. It does not cost the Government 10 per cent., does it?—No.

161. The engineering expenses are not charged to the work, are they—they are charged to departmental expenses?—Yes.

162. Just the same as the Engineers and overseers in the Arthur's Pass Tunnel?—If we were finding out what the supervision of a work would cost, we should charge the proper proportion of Engineers' salaries to it.

163. The Government have to keep an Engineer and several Inspectors there now, have they not?—Yes.

164. And that expenditure is not included in the overhead charges or the contingent expenses—I mean, it is not included in the supervision expenses paid by the contractor?—No.

165. Do you think that satisfactory progress has been made at the Bealey end of the tunnel since it was started?—No.

166. Have you ever reckoned how much a week the driving has averaged there during the last four years?—There have been about 26 chains driven in the four years.

167. It has averaged less than 9 ft. a week?—About that.

168. Or 6 in. a shift?—Yes.

169. Is there any reason why the work should not have been pushed on more from the Bealey end?—No, I know of no reason.

170. The plant there is sufficient to carry it on?—Yes.

171. Do you think it would have been an advantage to the contractor to have driven the Bealey heading to connect with the Otira one as quickly as possible, so as to get rid of air and water troubles?—Yes.

172. That would have saved a good deal of money, in your opinion?—Yes.

173. Do you know when work was started on the heading at the Bealey end—how long after the contract was let?—I could not tell you from memory, but it was a good long time. It would be about three years ago, I should think. They were a considerable time taking out the approach at the Bealey end.

174. You and I were there together before the Bealey heading was started?—I think we were.

175. That is three years and a half ago, I should think?—Yes.

176. And 27 chains has been driven during three years and a half?—Yes.

177. Regarding the stream over the tunnel at the Punchbowl, you said that the cover over the tunnel was about 50 ft. My recollection is that it is about 130 ft.?—I do not think it is so much as that.

178. The water from the Punchbowl is diverted by Mr. McLean already, for use for driving turbines?—Yes.

179. So that as a matter of fact the bed of the river is dry there?—Yes.

180. Except at flood-time?—The greater part of the water has been taken.

181. Do you think there is any probability of getting more water under the Punchbowl than they are meeting with anywhere else now at the Bealey end?—It is difficult to say.

182. But according to present indications?—I do not think so. We are hoping not.

183. The country over the tunnel is rock, is it not?—Yes.

184. If there was likely to be an increase in the water there, in all probability it would percolate through to the present heading, would it not?—Not necessarily.

185. Two or three chains on each side?—No, I should not think you would meet with the water until you actually arrived at the fault.

186. Provided there is a fault?—Certainly.

187. You said you reckoned to drive three-fourths of the tunnel from the Otira end and about a fourth from the Bealey end. That would be about four miles from the Otira end and a mile and a quarter from the Bealey end?—Yes, approximately.

188. Would it not be just as expensive to run cement and concrete and timber in at the Otira end—uphill—as to take out the material at the Bealey end?—Yes.

189. Would not the quantity of concrete and material taken in at the Otira end equal the quantity of spoil taken out from the heading at the Bealey end, approximately?—No; the quantities are about 5 to 1.

190. That is the total quantity: I am referring to the quantity in the heading?—The quantity in the heading, I think, is approximately the quantity of the concrete that is taken in.

191. The difficulty of running that concrete up at the Otira end would equal the difficulty of running the spoil out from the heading at the Bealey end?—Yes; well, you have to take the distance into consideration.

192. Say the distance is about two miles at the Otira end now, and 27 chains at the Bealey end. Would it not cost more to run that concrete and timber in at the Otira end than to run the spoil out at the Bealey end at present?—Yes.

193. Did you say that it would be possible to carry out this work by co-operative contract?—I do not think it would.

194. Do you find any difficulty in arranging other tunnels by co-operative contract?—No.

195. Except, perhaps, with regard to running out the spoil and running in the material, which would have probably to be done by day-labour?—No, we have no difficulty in carrying out other tunnels by contract.

196. Supposing that in this case you provided the ventilation and ran the material in and out, would there be any difficulty in letting co-operative contracts for the headings, or for widening out, or concreting, as you do in other tunnels?—I think so.

197. Why?—In the other tunnels we let the whole of the tunnel in one contract; the same party do the whole work; but in this case, owing to the magnitude of the work, it is probable that separate co-operative parties would have to be put on to the separate parts of the work. Unless they worked harmoniously you could not carry on.

198. Could you not arrange an agreement with them under which it could be done—take a certain quantity from each place in every shift?—Agreements are not of much use.

199. You said that you preferred not to answer the question why it should cost more to do the work by day-labour than under a contractor. You cannot give your reasons for saying that?—It is a question I would rather not answer.

200. Have you any reasons for saying so?—Yes.

201. What is the rate per lineal yard that Mr. McLean asked for this tunnel finished?—I think it is just a trifle over £60.

202. What is your ordinary cost?—The same-sized tunnels now run about £42.

203. How do you arrive at the opinion that it would cost from 15 per cent. to 25 per cent. more to finish the uncompleted portion than it has cost to do the completed part, knowing as you do that the plant is already provided?—Just on the rate of progress that has been made.

204. That is, assuming there has been only 6 in. a shift driven at the Bealey end since they started?—Yes.

205. Is there any reason why more should not have been driven there?—I do not know any reason why it could not have been pushed on.

206. Do you know whether at the Bealey end they have to stop the widening and concreting while the heading is being driven?—That is what they are doing.

207. In your opinion would it not be better to leave the widening and concreting altogether and drive the heading as far as they could do so to advantage, and do the widening-out and concreting afterwards?—That is a matter that would have to be decided according to the experience gained in going on with the work.

208. While the concreting and widening is being done the heading at the Bealey end has to stand: if the heading could be driven to connect with the Otira one, it would be a very great saving to the contractor, or whoever had to finish the tunnel?—Yes.

209. You recommend that this work be allowed to remain idle for two or three years in the event of the contractor abandoning the contract. What are your reasons for recommending that? Do you think the country would save any money by doing so?—I have already stated that that question would have to be gone into very carefully in connection with the capital cost of the line and the probable revenue.

210. I suppose you have a good idea of the approximate cost of the line from Stillwater to Otira, and from Springfield to the Bealey end of the tunnel. Both ends are practically finished, are they not?—Yes.

211. Say there is £213,000 paid for the tunnel, and estimating the railway-line at approximately £10,000 a mile, I figure it out at about a million of money?—Yes.

212. Supposing that that million of money costs the country £40,000 a year?—Yes.

213. Do you think it would be better, then, to leave this tunnel standing idle and pay £120,000 in interest on the money invested?—It depends on the volume of traffic to be conveyed by the railway. Of course, there is a possibility that it might pay the Government to abandon the work altogether.

214. What you say is merely an opinion—you have not made out an estimate or gone into any figures?—No.

215. Have you any reason to think that labour-conditions will be better in two or three years' time than they are now?—No, I do not think so.

216. Then your recommendation to stop the work for two or three years would not carry much weight, would it?—I should recommend that in the hope that things would have settled down by that time.

217. Have you any difficulty in finding men, as a rule, for doing the tunnels on co-operative works?—On some of the lines we are not fully manned.

218. At certain seasons of the year, is it not?—Principally in the summer-time.

219. As a rule, for six months of the year you can get as many men as you require?—Generally during the winter months.

220. How do the wages earned by co-operative contractors in tunnel-work compare with the wages that you see set out in the return sent in by Mr. McLean?—I think our men earn just a little more than those shown in the top scale here—the increased rates.

221. Do you have any difficulty with the men working in the tunnels, as a rule?—Occasionally we do. At the present time they are all pretty well satisfied.

222. Could you give the Committee an estimate, say, in a few days, of what it would cost the country to let the tunnel stand over for two or three years—I mean, by way of interest on the line that is already finished and also on the amount that would be lying idle in the tunnel?—I think so.

223. I should like you to send that in. I suppose you are fairly familiar with Mr. Hay's estimate of this work?—Yes, or I was at the time.

224. You can refer to it at any time, can you not?—Yes.

225. You can send to the Committee the details of the estimate, I presume?—Yes.

226. Will it show what Mr. Hay estimated labour at when he was preparing the estimate?—I would not be sure of that.

227. What amount do you allow generally for contingencies when you are making estimates for tunnels?—It is a general practice to allow about 10 per cent.

228. You make full provision for all reasonable items, I mean?—It depends what the estimate is for. If we are estimating for tendering we do not allow anything for contingencies. If we are estimating the probable cost of work when it is completed, then we allow about 10 per cent. for contingencies.

229. Can you tell us what was allowed on the Arthur's Pass Tunnel, over and above estimates for ordinary tunnels, on account of the length of it?—I think we reckoned it would cost about 50 per cent. more.

230. And that was provided in the £500,000 estimate made by Mr. Hay?—Yes.

231. Have you any other tunnels on the same or a somewhat similar grade to this?—The Government itself has not done any on a grade as steep as this. The tunnel just beyond the Upper Hutt is nearly as steep: it is 1 in 35, I think.

232. There are some on the Manawatu line, are there not?—They are 1 in 40.

233. *Hon. Mr. Fraser.*] You were asked whether you thought it a fair thing for the Department to keep Mr. McLean to the five years instead of allowing him six in which to complete the contract. Was the five-year condition not part of the specification under which Mr. McLean tendered?—Yes.

234. Was that the reason why you kept to the five years?—I think so.

235. Is it the practice when you have called for tenders and the successful tenderer asks for an extension of time, to let him have it without calling for fresh tenders?—That would depend upon all the surrounding conditions at the time, and also upon the response to the invitation for tenders.

236. Supposing the tenderer next to Mr. McLean had tendered to do this work in five years, and had put in at a higher price in consequence, would it have been fair to that tenderer to give to the successful man an extension of time?—Oh, no; the Government would not have done a thing like that. I think that in this case Mr. McLean's tender was practically the only one.

237. That point did not arise, then?—No.

238. *Hon. Mr. R. McKenzie.*] Were there not three tenders?—There were other ones, I think—I almost forget now—but they were a long way higher than Mr. McLean's tender.

Hon. Mr. R. McKenzie: One was only £28,000 more.

239. *Hon. Mr. Fraser.*] If the person who tendered at £28,000 more than Mr. McLean was willing to do the work in five years, might he not, if he had known that he would get another year, have been willing to do the work at the price Mr. McLean tendered at? It might have been that he would save £28,000 by getting a year more?—Yes, possibly.

240. That would be one of the reasons which influenced the Department in adhering to the five years?—Most likely.

241. *Hon. Mr. R. McKenzie.*] Mr. McLean did not put the six years in his tender, did he? He tendered for the five years, and then asked for an extension of a year before he signed the contract: was not that the position?—I think so.

242. If he had not tendered under the specification as it was advertised his tender would have been informal?—It would have been.

243. Would it not have been an injustice to the other contractors to have allowed the extra year?—I do not think the Government would have done that.

244. You stick to your specifications as you advertise them?—Yes.

245. Always?—Yes.

246. *Hon. Mr. Fraser.*] I think I understood you to say that in the event of Mr. McLean's contract being terminated, in your opinion there are only two ways in which the work can be done—by day-labour or by contract?—Yes.

247. You do not think it is practicable to carry the work out under the co-operative contract system?—No.

248. The work is too large: is that your opinion?—Yes.

249. Suppose the contract were terminated and the Government took over the work, do you consider the present plant is sufficient in respect of power and other matters?—The contractors were finding that the power was hardly sufficient.

250. Are you of that opinion?—I have not gone into that question.

251. Would it take you long to find that out?—Most likely it would.

252. You could not give me an answer in a few days?—No.

253. What I want to know is whether, in the event of the Government having to take over that work and proceed with it, they would have to incur any great expenditure on plant in order to carry the work out according to their ideas of what is necessary?—Time governs that position to a great extent. If you would be satisfied to take a longer time over the work, probably we could get along with the plant that is already there.

254. You mean that if the Government were satisfied to carry on the work at the same rate at which it has proceeded for the last three years the present plant would be sufficient: that is your present opinion?—Yes. We might want to increase it slightly to deal with the ventilation: we should want a little more power.

255. The further you go in the more power you will want for driving the fans, and so on, will you not?—Yes.

256. Is the present plant capable of overtaking that work?—I believe it is; but the contractors have experienced one or two difficulties through shortage of water during the dry season.

257. Has there not lately been an application made by the contractors to the Government to advance some money to buy some special plant?—I believe there has been.

258. What was that special plant for?—That matter has not come before me at all.

259. As to driving the heading at the Bealey end, is the material there such as you could continue to drive any length through without having it lined?—Yes, as far as we know—that is, for a heading.

260. *Hon. Mr. R. McKenzie.*] As to plant, the plant that is there now, as far as ventilation is concerned, was provided of sufficient power to finish the tunnel?—The contractors estimated that it would be sufficient.

261. There have been no alterations necessary in the plant for ventilation. The conditions for ventilation, as far as the power plant is concerned, are now the same as they were when the tunnel was started?—Yes.

262. So that the extra plant which Mr. McLean says is required is to provide power to work the tunnel during dry weather when the water-power is useless to them?—I believe that is the principal reason.

263. There is no other plant required as far as you know?—I do not think so.

264. *Hon. Mr. Fraser.*] You do not know whether that extra plant is being procured or not?—I do not.

265. *Mr. McLean.*] Would not the rate of progress at the Bealey Flat be affected by the shortness of labour?—I suppose it would.

266. Where there was a shortage of labour, would not you, as an engineer and a practical man, apply the labour that you had available where it was most effective?—Certainly.

267. Is it not a fact that, in response to notices from you or Mr. Blow at various times, we even applied to you for labour—we said that if you could supply us with the labour we could make very much better progress?—It did not come before me.

268. At any time there was any application from you, the reply was always the same—shortness of labour?—Yes.

269. Is it not much more difficult and expensive to work the Bealey end than the Otira end on account of the space taken up with the delivery-pumps and the various pipes in the tunnel?—I think that would depend largely on the methods adopted for working. Of course, those pipes are an inconvenience and a nuisance.

270. And the pumps?—They are a nuisance too: they are in the road.

271. You know that we have two pairs of pumps in the tunnel?—Yes.

272. Is it not also a fact that we have had to close-timber the whole of the Bealey Flat end of the tunnel, in widening out, with bars and props, and what not, right from the very start?—I know you have had to timber the enlarged tunnel.

273. We have had to close-timber the enlarged tunnel the whole time?—It depends on what you mean by close-timbering.

274. You know, at any rate, that through excessive wet, or carelessness on the part of the men, or whatever it might be, part of that tunnel came down?—Yes, at the start.

275. And the ground, if left untimbered, would no doubt come down in the same way through the whole of the open part?—Yes.

276. This will make the work more expensive, will it not, than in a tunnel where the ground will stand?—It will cost more to timber, of course.

277. That puts it on to the excavation?—Yes, but it need not necessarily increase the cost of the tunnel, because where you have to timber the excavation does not cost so much.

278. But, as a rule, excavation is cheaper in ordinary ground where the ground will stand by itself than in ground where you have to timber?—That depends on the hardness of the rock.

279. I mean, ordinary rock?—Yes, where it is broken rock it costs more to timber it.

280. *Hon. Mr. R. McKenzie.*] How many men are required on a shift in the heading at the Bealey end and to provide the necessary timber for them? How many do you estimate?—I could not answer that offhand.

281. Mr. McLean suggests that they had to close-timber the ground at the Bealey end. Would they not have to do that in that ground in any case, no matter which end they drove the tunnel from? If that ground requires close-timbering now, would it not require it afterwards?—Yes.

282. *Hon. Mr. Fraser.*] In such an event as the Government undertaking the work, what staff would they require to have there in excess of the officers they have at present?—We should require to have a resident Engineer in charge.

283. Perhaps you would prefer to think it over and make out a statement?—No. I think that if the Government elected to carry out the work themselves, we could carry on with a resident Engineer, the present overseers, and perhaps an advanced cadet.

284. *Mr. Okey.*] Would that be sufficient in connection with the payment of the men?—There would be a clerk wanted.

285. *Hon. Mr. R. McKenzie.*] And there would be the shift-bosses?—We have half a dozen overseers there now, I think.

286. *Hon. Mr. Fraser.*] They would be capable of taking over the work and doing it?—Most of them would.

287. Would you have to increase the number much?—We should want a few subs. very likely.

288. *Hon. Mr. R. McKenzie.*] Did you say that you would require a resident Engineer besides the Engineer you have there at present and the Resident Engineer in Christchurch?—We should want an Engineer located on the job.

289. Besides the one there at present?—He would not be able to attend to any other work than the tunnel.

290. But there is an Engineer there now?—There is an Engineer at the Cass.

291. The one at the Cass does the tunnel too?—Yes.

292. I understood there was one at Otira?—There used to be.

293. *Mr. Okey.*] In what way would you carry the work on if the Government took it over: would it be by contract or by day-labour?—I should recommend the Government to let it by contract as a whole.

294. But assuming that the Government conducted it?—Then I think you would have to carry it on by day-labour.

295. Everything would have to be carried on by day-labour?—Yes. A certain amount of work outside, perhaps, could be let by smaller contract or co-operative contract, such as gathering stone for the concrete-work.

296. And delivering it on the ground?—Yes. But difficulties may arise if there are separate contractors, in their not being up to time with the work.

297. Is there not stone in the tunnel that is suitable for concrete-work?—Yes.

298. That is saved now, I suppose?—Yes, the contractors are using that now. It has to be brought out.

299. And broken?—A good deal of it is already broken.

300. You would propose to carry on the work of the tunnel by day-labour?—I think that is the only practicable way to do it. It is the only way in which you can control the whole thing, so that each part shall work harmoniously with the other parts. If you let a lot of small contracts you are at the mercy of each contractor.

301. *Mr. Veitch.*] Have you any rule for fixing the proportion of cost of management in a contract: can you determine that?—A lot depends on the size of the work. If you are estimating

you go into the matter in detail, and find out the actual management required to carry on the work. As a general rule you allow about 5 per cent. for engineering and office expenses.

302. I understood you to say that other tunnels have cost about £42 a lineal yard?—Yes.

303. Why should this one cost £60 a yard as against £42 in a shorter tunnel?—I might perhaps answer that by saying that if sufficient time were allowed we might be able to complete this tunnel at very little more cost than the £42. Time is the governing point.

304. If you were allowed to go through with it very slowly you could reduce the cost per yard very much?—Yes.

305. Is it reasonable to suppose, then, that the fact that Mr. McLean has had to hurry on with the job has something to do with the great difference in the cost?—The time factor governs the position almost entirely.

306. Have you ever had to stop a job—tunnel or other job—for want of labour in the Public Works Department?—We have had to go very slowly—not actually close down.

307. Are there any cases in which the cost of construction has been materially increased through shortage of labour?—Not in our tunnel-work, because we employ only very few men.

308. You do not work on a big scale?—No. About half a mile or 30 chains is our longest tunnel.

The Chairman (to Mr. Blow): Have you any further papers to put in?

Mr. Blow: Yes, sir. Here is a copy of a letter to the contractors, remonstrating against their delay; and their reply. [Letters put in.]

Hon. Mr. R. McKenzie: I asked that we should be informed when the heading was started at each end of the tunnel.

Mr. Blow: The heading at Otira was commenced in February, 1908, and at the Bealey end in January, 1909.

The Chairman: The letter to the contractors is as follows: "Public Works Department, Wellington, 16th November, 1910.—Arthur's Pass Tunnel Contract: Gentlemen,—I am directed by the Minister of Public Works to communicate with you regarding the progress of works under your contract for the construction of the Arthur's Pass Tunnel on the Midland Railway. From recent reports by the Resident Engineer it appears that the rate of progress attained up to the present is not sufficient to warrant the hope that the tunnel will be completed within or about the time stipulated in your contract, which expires on 1st August, 1912, and I am therefore to request that you will be good enough to take steps to accelerate the progress of the work, so that the opening of the railway may not be unduly delayed owing to the non-completion of the tunnel by the date fixed in your contract. The Minister will be glad to hear at your early convenience that you are making arrangements to expedite the work, and to learn the nature of the means you propose to adopt to bring about an improvement in the present rate of progress.—I have, &c., H. J. H. BLOW, Under-Secretary."

Messrs. McLeans' reply is as follows: "Otira, 5th December, 1910.—The Under-Secretary, Public Works Department, Wellington.—Dear Sir,—We are in receipt of yours of the 16th ultimo re expedition of work on our Arthur's Pass Tunnel contract, and beg to inform the Minister as follows: Our trouble is that we have never been able to obtain the services of enough men, and that, of the men we do get, some are inferior, and some are irregular in attendance, while there are very few first-class men, and no leaders of value. By the use of bonuses equivalent to increased wages we hope to induce more and better-class men to come to this work, and by this means to expedite its progress to your satisfaction.—Yours faithfully, JOHN McLEAN AND SON."

Hon. Mr. R. McKenzie: Is it not usual for the Department to send notice of this kind to all contractors when they are getting behind with their work?

Mr. Blow: Yes; it is usual for the Resident Engineer to draw the attention of the contractor to the slow rate of progress, and if that has no effect the Department takes action.

Hon. Mr. R. McKenzie: In the replies you get, is there not invariably some excuse from the contractor about matters beyond his control?

Mr. Blow: They make the best case they can.

TUESDAY, 24TH SEPTEMBER, 1912.

MURDOCH McLEAN further examined. (No. 12.)

1. *The Chairman*.] We have received from Mr. Armstrong a copy of a proposed agreement between the men and your firm. You might have a look at it [document handed to witness] and tell us whether it ever came before you?—These were the demands made by the union at the time.

2. *Mr. Seddon*.] Was this proposed agreement considered?—Yes. The demands were made by the union shortly after the expiration of the award. It was some time in December last, I think, when they made these claims, and they were considered in February.

3. *The Chairman*.] Then you came to a settlement?—They claim there was no settlement made; but we made certain advances in wages, and they went on working under those conditions without any agreement. I have submitted to the Committee the rates of wages that we gave at that time ourselves.

4. *Hon. Mr. Fraser*.] Then that simply is a statement of their demands upon you, which were not acceded to, but you made certain concessions to them upon which they continued to work?—That is right. I should like to say that as regards rock-drill men their original demand was 12s., but as a matter of fact we advanced the wages to 12s. 6d.; and as to shift-bosses, they claimed 13s., and we increased the payment to 13s. 6d. There is really not very much difference between us as far as wages are concerned.

5. *The Chairman*.] The other conditions were not agreed to?—No.

PERCY SAWTELL WALDIE, Inspecting Officer, Public Works Department, examined. (No. 13.)

Witness: I have been asked to give evidence with reference to a statement put in by Messrs. McLean and Sons relative to the Otira contract. I have prepared a report, Mr. Chairman, which, with permission, I will read: I have the honour to report that I have examined statement of accounts submitted by Messrs. McLean and Sons (Limited) as to the 30th June last with the books of the company, and confirm the correctness of the figures given, except as regards the item "Sundry creditors," in which a sum of £11 16s. 7d. owing by the company could not be located from the books. The working-expenses for years shown in profit and loss statement submitted by the company are confirmed by audited statements of profit and loss, except as regards the year 1909. In the statement submitted the working-expenses to September, 1909, are shown as £41,267 0s. 9d.; value of work done on contract, £31,420. The *estimated* Profit and Loss Account for the year shows £38,767 0s. 9d. and £28,920 respectively. The sum of £2,500 provided for in the contract in connection with huts for workmen explains the difference between the actual and estimated charges, the Plant Account having been credited with the sum transferred to the working-expenses. It is not claimed that the statement submitted by Messrs. McLean discloses the actual position of the company on the 30th June last, but the book balances at about that date. Thus the item "Interest due, £1,152 2s. 3d.," is the interest accrued to the Government as on the 30th September last, when the annual balance took place; the interest due in that connection on the 30th June last amounted to £1,990. Particulars of items comprising "Plant and materials" and "Working-expenses" to the end of June last are attached. Most of the items do not call for any particular comment, as a perusal of the list will disclose; but there are some items of expenditure to which attention is directed. Included in the particulars of working-expenses to the 30th June last are the following, viz.: Interest, £1,863 3s. 4d. (paid to bank, &c., £711 1s. 1d., and accrued to the 30th September last against advances by Government, £1,152 2s. 3d.); directors' fees, £300; auditors' fees, company's license fees, other expenses incidental to private individuals in business; also household expenses. The cost of management has been at a high rate throughout, and bears a greater proportion to the work executed than would be the case if carried out by the Government. The amount expended on salaries, engineering expenses, and wages of foremen to the 30th June, 1912, was £26,796 13s. 8d., including £3,297 charged to plant, &c. The percentage of cost of supervision charged to working-expenses to the total expenditure in that connection amounts to 11 per cent. Particulars of expenditure attached. Salaries now paid are as follows, namely: Two managers (at £1,500 per annum), £3,000; one engineer, £600; one accountant, £350; one electrical engineer, £300; one assistant engineer (£4 per week), £208; three timekeepers and storekeepers (£3 10s. per week), £546; one tunnel foreman (£5 per week), £260; three tunnel foremen (£4 10s. per week), £702; one outside foreman (£4 per week), £208; one foreman carpenter (£4 10s. per week), £234; two housekeepers (at £1 5s. and 15s.), £104: present annual rate of expenditure on supervision only, £6,512. A careful examination of details of working-expenses shows that the Plant Account is not unfairly debited with the cost of renewals and repairs: such expenses are properly charged against working-expenses. The cost of re-erecting buildings destroyed by fire is included in the working-expenses. No buildings are insured at present, but the premium payable to insure all the buildings would have probably equalled the loss incurred since insurance policies were allowed to lapse. I express no opinion as to the necessity to insure or otherwise. I have pleasure in acknowledging the services rendered by the secretary to Messrs. McLean and Sons (Limited), Mr. J. Williams, who gave every assistance in connection with the examination. [Report, with statements attached, handed in.] The statements attached are simply confirmatory in detail of the main items which are covered by Messrs. McLeans' statement. With regard to taking the book balances, I may state that the company do not close their books at the 30th June—their annual balance is at the 30th September; and there is a slight difference between the expenditure on Capital Account and working-expenses, as shown in the balance-sheet; but if you take the working-expenses and the plant and add the two the total expenditure balances with the books. The difference is a very slight one, and is accounted for by adjustments made during the year as against the capital outlay.

1. *Hon. Mr. Fraser.*] Have you considered at all what the actual position would be supposing the contract were terminated and the work taken over by the Government? What would be the loss to Messrs. McLean? Let me ask you certain questions. The cost of the work has been—how much?—The actual cost of the work to the firm up to the end of June is £213,362 17s. 9d.

2. The value—100 per cent.—of the work as per contract is?—£206,896. That is the full value of the work under the contract.

3. The difference in the cost of the work, then, is £6,466 17s. 9d.?—Yes, subject to various recoveries amounting to £1,772 5s. 5d.

4. Leaving a balance of?—£4,694 12s. 4d.

5. But the Government have only paid 90 per cent. of the value of the work?—Yes.

6. Messrs. McLean leave 10 per cent., which the Government retain in the form of work completed?—Yes.

7. That is £20,689, is it not?—No, £24,802. The retention was £20,689 to the end of June, and an amount was then available for payment of £4,113 for work done during June.

8. Then there is a deposit of £5,000 in the hands of the Government, is there not?—Yes, a cash deposit.

9. What does the total of all that come to—£4,694 12s. 4d., £24,802, and £5,000?—£34,496 12s. 4d.

10. That, then, would represent, assuming that nothing were paid to Messrs. McLean for the 10-per-cent. value of work which the Government retains, and that the Government retained

the deposit—that would represent a loss of £34,496 12s. 4d.?—That would be the actual amount, exclusive of the value of plant and material.

11. Now, the value of the plant and material in your statement and in their statement is—what?—£78,333 1s. 7d.

12. And since then there have been advanced by the Government—what sums?—£34,411 as against the plant—

13. That is, 50 per cent. of the value of the plant?—Yes, 50 per cent. at the time the first agreement was entered into. Since then, in terms of agreements entered into with the company, they have received a further advance of £25,000.

14. Those two sums added together total £59,411 advanced?—Yes.

15. Deduct that amount from the £78,333 1s. 7d. and you have £18,922 1s. 7d.?—That is the position. That represents the excess of expenditure by Messrs. McLean over the advances by the Government in respect of the plant and material.

16. If you add that sum to the £34,496 12s. 4d. arrived at above?—It comes to £53,418 13s. 11d., being the amount that Messrs. McLean would be out of pocket.

17. And I think that is the figure they put it down at?—That is the figure.

18. Would the following figures, then, represent the position?

	£	s.	d.
Cost of work	213,362	17	9
Value—100 per cent. of work as per contract	206,896	0	0
	6,466	17	9
Less various recoveries	1,772	5	5
	4,694	12	4
Add 10 per cent. of finished work to credit of Government to June	20,689	0	0
June certificate	4,113	0	0
	24,802	0	0
	29,496	12	4
Deposit in hands of Government	5,000	0	0
	34,496	12	4
Book value of plant and material	78,333	1	7
Advanced by Government to contractors—			
50 per cent. on plant	£34,411		
Cash advance	25,000		
	59,411	0	0
	18,922	1	7
Loss to contractors assuming that Government terminated contract and seized plant, &c.	£53,418	13	11

—Yes.

19. *The Chairman.*] Will you want to refer to the books again, Mr. Waldie?—I do not think there will be any necessity. The big item in the statement of expenditure on plant is for plant itself. That item “Plant” covers so many payments that nothing could be done by picking out the expenditure as showing in the books. It covers a wide range of expenditure, which you could not by any means locate against the individual items. You would really want the accounts for the plant supplied by the manufacturers: you would want to see the vouchers. But, in addition, so much of the expenditure is on wages that I do not think the books would assist much in that connection.

The Chairman (to Mr. Williams): Nothing suggests itself to you, Mr. Williams, about the statements that have been made?

Mr. Williams: Nothing at all.

FRIDAY, 27TH SEPTEMBER, 1912.

MURDOCH McLEAN made a further statement and was further examined. (No. 14.)

1. *The Chairman.*] We will take your statement in reply, Mr. McLean?—I do not propose, Mr. Chairman, to reply at any great length, as the question has been fully gone into by the Committee, and anything that I say will probably not elucidate very much. I should like to make a statement in reference to the suggestion that we did not start work as soon as we might, and that there was some delay on our part that should not have taken place. I want to say at the start that according to the terms of our contract we had to provide huts for the men to live in. The size and floor-area of the huts were specified, and in less than a month after the contract was let we had carpenters on the work erecting these huts. The timber, unfortunately, had to be taken almost right off the saw, and the huts were erected as fast as we could erect them, and as they became habitable we employed men to live in them. The most important part of the work, we considered, was obtaining power to drive the various pieces of machinery that were required for the construction of the tunnel, and the greater part of the attention of those then

in charge was given to that particular object. Even at that time there was some difficulty in obtaining men, particularly as we had no place to house them except as we built the houses. The installing of the plant entailed a very heavy piece of work in laying the pipe-track from the Rolleston River to the head of Holt's Creek, through gorges, ravines, and tunnels, and all the men we could get were put on to this work. At the Bealey end the same thing applied. We had a tunnel to drive of 12 chains length before we could tap the water, and so bring the power through our pipe-lines on to our Pelton wheels. There was also a bridge of considerable length to erect at the Bealey end, so that we could get our material to the tunnel and also get our debris away. Those things occupied some considerable time. There was a rock cutting at the Bealey portal of 7,200 yards, which took a good deal of time to excavate; and I want to impress upon the Committee that we took all the men we could obtain as far as possible to the Otira end, and we employed men at the Bealey end as we could get them. At the Otira portal there were 4,500 cubic yards of excavation through moderate country, and it was not till the 1st May, 1908, that we started on the bottom heading at the Otira end. That would be about seven months or eight months after the contract was let. At the Otira end the machines were started on the 3rd July. The Otira bottom heading was started with hammer and drill early in May, and we got the machines going on the 3rd July. The Bealey bottom heading was begun in June, 1909. That would be about a year and nine months after the contract was let. I have here a tabulated statement in respect to the cost of tunnels throughout the world which in any way compare with the Otira Tunnel. The costs are reduced, so that the Committee may see at a glance what the cost of these various tunnels would have been under exactly the same conditions as obtain at Otira. I do not think there is any necessity for me to read it. I will just lay it on the table.

2. *Mr. Davey.*] Is it a duplication of the Engineer's statement?—It is not an exact duplication. Mr. Gavin's statement, as far as I remember, did not reduce the tunnels to the Otira size.

3. *The Chairman.*] Read the statement out, please?—Very well, sir. [Witness read and then handed in statement, Exhibit M in Appendix.]

4. *Hon. Mr. R. McKenzie.*] Can you tell us whether those European tunnels were carried out by contract?—I could not actually state that they were, but I believe they were all carried out by contract.

5. Of course, you cannot tell us what the contractors' profits were?—No. I am not producing this statement with a view to shielding ourselves in any way; I only produce it as information for the Committee. I might say that when I was in Europe looking for machinery I visited both the Loetschberg and the Tauern tunnels, and was in the headings and the workings of both; and I should say that the material in the Loetschberg Tunnel was a good deal easier to work than the material we are working through. The Otira Tunnel at £750,000 would work out at about £77 per lineal yard. At the contract price it would work out at £61 per lineal yard, and if £150,000 were added it would be about £77 a lineal yard.

6. That is on the total length?—Yes. 9,350 yards of tunnelling would work out, at £77 a lineal yard, at £720,000, and the outside work is valued at £30,000, bringing the total up to £750,000.

7. *Mr. Davey.*] You have not worked out, I suppose, what the tunnel has cost up to the present at per lineal yard?—No.

8. *The Chairman.*] According to this statement not one of these European tunnels cost as little as £77 a yard?—No.

9. The lowest is £80 and the highest £275?—Yes. We can hardly compare those early tunnels, because they were made entirely with hand-work, and the conditions that the men worked under were very different. There does not appear to have been ventilation of any kind, and I understand they killed thousands of men in the Mont Cenis and the St. Gothard. The tunnel that you can compare the Otira Tunnel with is probably the Tauern. It is exactly the same length, took six years in construction, the country was granite and gneiss, and it has been just recently completed. Now, Mr. Chairman, in reviewing the evidence I do not propose to take up much time. Mr. Blow's evidence, except as to his statement concerning the carrying-on of the work by the co-operative system, does not seem to me to require any comment.

Hon. Mr. R. McKenzie: If Mr. McLean is going to traverse the evidence, Mr. Chairman, I think the witnesses ought to be here.

Witness: I am making no special comment. Mr. Vickerman's evidence does not appear to me to call for any comment on my part, except this, that he corroborated the statement I made in reference to Mr. Malloy. Notwithstanding that Mr. Malloy denied having made the statement, it was clear in my mind and in Mr. Vickerman's. Mr. Fagan's evidence was mostly hearsay, and his statements concerning the conditions in the tunnel were from information quite outside of Otira. Mr. Gavin's evidence went, I think, to prove that the conditions under which the men are working are as good as it is possible to make them, consistent with carrying out work of that kind. He stated distinctly that there had been no complaints made to him, either individually or by the union, in respect to some of these matters that were referred to by some of the witnesses. That was borne out by Mr. Kennedy's evidence. He admitted that the conditions were not so bad, and he was satisfied, and was working under the conditions satisfactorily. Mr. Armstrong made some pretty strong comments in respect to the conditions under which we are working, and he and Mr. Kennedy were very insistent that the tunnel should be brought under the Mining Act. Now, the tunnel, in my opinion, and the workers' interests, are better looked after under present arrangements than they could be under the Mining Act. We have Inspectors there the whole time. We have a Quarry Inspector and we have Public Works Inspectors who are closely looking after the works and seeing that there is no dangerous ground, and if there is any sign of loose or heavy ground they immediately report the matter to the contractors and it

is at once attended to. There is some little doubt in the minds of the Committee, I think, in respect to the arrangement regarding wet time. It was laid down by an award of the Arbitration Court that the Resident Engineer, represented by the Assistant Engineer, should be the sole judge of what was a wet place. Mr. Gavin in his evidence informed the Committee of the procedure as far as he was concerned, and he had heard no complaints up to the end of 1911, when this arrangement was terminated. It lasted from the end of 1908 till the end of 1911—three years. Now, it was given in evidence that the conditions were not so bad for the last six months, when we were working under different conditions from those that obtained before. At the end of 1911 the Public Works Department decided to remove the Assistant Engineer to Bealey—to the other side of the range—where it was impossible to get him to adjudicate on this matter, and we as contractors did not care to place ourselves in the hands of the Inspectors. Most of you, I think, who know much about contracting will realise that the Inspectors are there to see that the contractors carry out the letter of the specification. The contractors, on their part, endeavour to carry out the work as cheaply as possible consistent with a good job, and many times the Inspectors and the contractors may be, in a way, at loggerheads; and I did not think, under those conditions, that the Public Works Inspector was the right individual to adjudicate on the matter of wet time. Consequently I refused to take his view of the matter, but instructed our engineer to be as liberal as possible in regard to this particular question, because undoubtedly that is the worst feature of the tunnel. It is a wet tunnel, I may say, throughout. We are working under the watershed of the Otira right from end to end; in places the Otira is within a few hundred feet of the line of the tunnel. In my opinion it is on account of this adjacency to the Otira River that there is so much wet. Unquestionably it is a very wet tunnel, and we endeavour, as practical men and for economy's sake, to satisfy the workmen to the best of our ability, consistent, of course, with being able to carry out the work. That was the instruction given to Mr. Gavin, and I think the evidence given by the men themselves proved that Mr. Gavin gave them wet time whenever it was reasonable to expect it. So that if this tunnel had been brought under the Mining Act I do not think the conditions would have been as good to work under as they are now.

10. *Hon. Mr. R. McKenzie.*] Could you indicate whereabouts your heading would be at the Otira end from the surface: would it be under the moraine or up Peglake Creek?—At present it is between Peglake and the moraine. Presently we shall strike the headwaters of the Bealey.

11. *Mr. Seddon.*] You will go under the Bealey?—No; we go under the Otira and under the headwaters of the Bealey. We are under the Otira right from where we started.

12. *Hon. Mr. Fraser.*] What distance are you from the bed of the river?—I cannot tell you exactly. The Otira River in one place is about 150 ft. from the line of the tunnel, and probably about 300 ft. above it.

13. *Hon. Mr. R. McKenzie.*] Where—at Peglake Creek?—Yes, just at the moraine. The highest peak is Warnock's Knob, 1,100 ft. above the formation of the tunnel; it is a very high knob, just above Peglake Creek. There are other conditions under the Mining Act that it would be almost impossible to work the tunnel under. I refer to the provisions regarding explosives: "It shall not be stored on the surface of or adjacent to the mine unless in such magazine and in such quantities as may in writing be approved by the Inspector. It shall not be stored in the mine in any quantity exceeding what would be required for use during six working-days for the purpose of the mine; and, whilst so stored, it shall be kept in a drive or chamber separated by a door fixed across such drive or chamber at least thirty feet from any travelling-road. It shall not be taken for use into the workings of the mine except in quantities actually required during the shift, not exceeding sixteen pounds of gunpowder or ten pounds of nitro compounds or nitro-glycerine compounds in workings where drilling-machines are used, and not exceeding eight pounds of gunpowder or five pounds of nitro-glycerine compounds in any other working, nor in any case except in securely covered cases or canisters." It would be almost impossible to conform to those conditions in constructing a tunnel like the Otira Tunnel. Every round in the tunnel at the face weighs nearly 50 lb. of gelignite, and to put a 30 ft. drive in every here and there along the tunnel would entail enormous expense and delay. So that that alone would prevent our coming under the Mining Act.

14. *Mr. Davey.*] The same would obtain with quarries, would it not?—No.

15. *Hon. Mr. R. McKenzie.*] In a mine they have the drives, anyhow?—Yes, unused drives. It is no special expense to put them in. I do not think I need refer to Mr. Malloy's evidence further than to say that it proved that while we were working under the Arbitration Act and while he was president of the Reefton Miners' Union everything went on quietly and satisfactorily, and that we did our very best to make the conditions under which the men were working favourable. Mr. Holmes's evidence on the whole proved, I think, that we used every endeavour to carry out the work and prosecuted it in a manner that was satisfactory to him, and that we could not ourselves foresee all the trouble that we have met with. I will leave the matter now in the hands of the Committee.

16. *Mr. Veitch.*] With regard to the working-conditions under the Mining Act, you point out first of all that you gave special treatment to the men with regard to wet time. That is a matter that would not apply under the Mining Act, is it not?—Perhaps Mr. McKenzie would be able to put his finger on the part of the Mining Act which refers to wet time; but if my impression is correct the whole tunnel would come under wet time as defined by the Mining Act.

Hon. Mr. R. McKenzie: I do not think the Act defines a wet place. I think it leaves it to the discretion of the Inspector of Mines.

Witness: I have not any written information, but I am informed that the definition laid down by the Inspector regarding various mines would make our tunnel a wet-time tunnel right through.

17. *Hon. Mr. R. McKenzie.*] That would be under the Arbitration Court awards?—I suppose that is it. That is very likely where it is.

18. *Mr. Veitch.*] If the Mining Act applied to the work in your tunnel, would it be a wet-time job right through?—It might not be a wet-time job the whole way, but a great deal of it would be wet time—in fact, the great bulk would, because, if I remember correctly, the definition said wet underfoot or sufficiently wet to wet a man at work in so-long a time; and that means that he has to be wetted without oilskins or an overcoat, or anything of that kind, I take it. So that it would reduce the Otira Tunnel to a wet-time tunnel all through.

19. You said that the working-conditions in the tunnel were better than they would be if the men came under the Mining Act. As a matter of fact the bank-to-bank clause applies in a mine, does it not?—Yes.

20. And it did not apply to your contract?—No.

21. Well, is it not reasonable to suppose that if the bank-to-bank system were applied to the Otira Tunnel the men would be better off?—Yes, they certainly would be. I was referring particularly to the inspection in regard to air and the safety of the tunnel when I spoke.

22. Assume that fresh tenders were called for completing the work, and that you were in a position to tender again: would you, in estimating the probable cost of the job, make allowance for conceding the bank-to-bank privilege to the men?—Yes, but not on exactly bank-to-bank lines. If I were making an estimate I would estimate the overtime that the men would work if time counted as from bank to bank—that is, they would put in their eight hours at the face, and you would pay them overtime for the time spent in going in and out. I think that would have to be done. That would mean an increase in wages, which I stated in my opening statement will have to be given, I think, in any case, to induce men to work in the Otira Tunnel. It just means an increase of wages.

23. *The Chairman.*] And a larger allowance for wet time?—Yes. Well, the wages the men earn is the great factor. The hardships that the men are working under are not very great. The actual work is not very hard. Nearly the whole of the work is done by machine drills. The excavation out of the top heading, and what we call the break-up, are done through chutes into the trucks below, and the only heavy or hard work is shovelling in the heading and shovelling from the walls.

24. *Hon. Mr. R. McKenzie.*] About half the quantity of the stuff has to be shovelled, or a little more?—About half the quantity. The men are allowed to work with oilskins, so they are never very wet or very cold. Naturally they are allowed to work with oilskins, because if you work in a wet place for six hours driving a machine drill, when you just stand and turn a handle if the drill is going well, you want some covering. The men go in very warmly clothed, because the work is not very arduous in those particular places.

25. *Hon. Mr. Fraser.*] Do you use the popper-drill?—Yes.

26. How many men have you on it?—We have only one man on the popper-drill. The popper-drill is a machine about 70 lb. in weight, and a boy twelve years of age can work it.

27. *Hon. Mr. R. McKenzie.*] Does it do as much work as the drill formerly used?—It does more work than any drill that we have for the purpose.

28. *Mr. Seddon.*] Are you prepared, in the event of your going on with this contract, to allow Mr. Gavin always to decide the question of wet places?—Oh, yes. Mr. Gavin is only working under instructions from us.

29. In regard to the inspection of the work by the Government, what is the present procedure?—There are three Inspectors, one for each shift.

30. Does the Inspector stay in all the while the shift is there, or does he just go in and watch operations?—One Inspector goes in every shift. The head Inspector goes right through every day. The other Inspectors are in on their own special work—perhaps seeing that the concrete is properly put in or that the lining is properly done, or something of that kind.

31. They are there to report on the work being done, not on the conditions of work, or anything like that?—Oh, yes; it is part of their duty to report to us if there is any loose ground or dangerous place that wants attending to; or if they see that the explosives are not being carefully handled or are lying about, or anything of that kind, it is their duty to see that these matters are rectified.

32. You say that under the present conditions there is proper inspection?—Yes.

33. You say that the men go into the tunnel to their work on trucks?—Yes.

34. How far from the face do the trucks take them?—At the very outside, 30 chains.

35. So they have to walk with their tools 30 chains?—No, they have no tools; the bottom-heading men have to walk 30 chains; the top-heading men and what we call the break-up men and the wallsmen probably do not have to walk 5 chains.

36. *Hon. Mr. R. McKenzie.*] I suppose the wallsmen are taken right to their work?—Yes.

37. *Mr. Seddon.*] How long do they take going in on these trucks?—At present, about nine minutes from the tunnel portal to where they get off at the end of the lining.

38. If you conceded the bank-to-bank provision, it would not be a great concession—you would not actually lose much time, would you?—You see it takes another ten minutes for them to walk up to the face: that would be about twenty-five minutes for the heading-men.

39. As you get in further it will take longer time?—Yes.

40. That would be approximately forty or fifty minutes a day if you granted the bank-to-bank clause?—I reckon it would take about forty-five minutes. I might state now to the Committee—it may make things a little plainer—that at the conference with the Federation of Labour, attended by the president and secretary of the West Coast Workers' Union and my brother and myself, the only matter really in dispute between us was the compulsory preference clause. We

could at that time have come together in respect to the bank-to-bank trouble by our taking—this was a proposal from them—the men in, and their time starting from when they got off the truck at the end of the line.

41. *Hon. Mr. R. McKenzie.*] You were dividing the lost time?—Yes. They would have been quite agreeable to that at the time. But where we could not come to terms was with reference to compulsory preference to unionists. We agreed to accept the compulsory clause if they would agree to supply us with men as we required them; but, of course, they could not do that. It was an impossible condition, no doubt, to propose to them, but it seemed to us an impossible position for us to compel every man on the work to be a unionist. There are a great number of men there who are not unionists, and they said that they would sooner leave the job than become unionists; and we did not feel that we could economically concede that point to them.

42. *Mr. Veitch.*] If we agreed to offer you a little more money to complete the contract, how much more would you want?—I think I made that clear in my opening statement: about £130,000 to £140,000 is what I stated; but I may tell you that my engineer's estimate is more than that.

43. *The Chairman.*] You said £130,000 or £140,000: having heard all the evidence given before the Committee, do you wish to vary that estimate?—My engineer and I went into it very carefully. I hardly like to put it in evidence, but I have the estimate made up in detail.

44. *Hon. Mr. Fraser.*] Did you make that estimate with a view to recouping to yourself the loss already made on the work done besides leaving you a fair return for your future work, or was it only with regard to what would leave you a fair return in the future?—The estimate was made with a view to recouping what we have lost.

45. And allowing?—Some little return besides for our time in the future.

46. And for what is already done?—Oh, nothing for that. It is only an estimate to recoup what we have lost.

47. *Right Hon. Sir J. G. Ward.*] Are you satisfied that you cannot carry the contract on under the existing conditions?—I am sure of it.

48. Are you satisfied you could not, even if, as is suggested in the evidence given by Mr. Waldie, there was a reduction in the cost of management, and that sort of thing?—It would, in my opinion, be impossible to carry it out at the price.

49. You have gone carefully into the question of what additional money would be necessary to enable you to carry out the work?—Yes.

50. And you suggest £120,000?—I have gone into the matter further than that. I have the details very carefully worked out. If it would be of any assistance to the Committee I do not mind giving this estimate to them, but I should not like to put it in evidence.

51. You state that it would take £130,000 or £140,000 to recoup you for past losses, and to enable you to make a fair return from future work?—That is our estimate.

52. Is there any percentage of profit in that £130,000 or £140,000?—Very little. £150,000 is what we make it now.

53. Could your sureties, if called upon, pay the amount of their bond?—I do not think so. As far as my father's estate is concerned, it is involved in this work, so there would be nothing in that at all.

54. Your position, then, I understand, is this: if you do not get the increased amount that you name, the alternative is liquidation?—That is so.

55. At what do you estimate the actual value of the plant at the end of your contract if you carried it on? It was assessed at £5,000, I think?—Yes.

56. Is that what you estimate it would be worth?—I do not think it would be worth a shilling more.

57. *Hon. Mr. R. McKenzie.*] Does that include the Diesel engine that you propose to get?—No. Whoever carries the work out will have to provide additional power for dry seasons.

58. *The Chairman.*] At a cost of?—About £4,000.

59. *Right Hon. Sir J. G. Ward.*] Have the difficulties that you experienced over the Wellington dock in any way weakened your financial position in connection with the Otira Tunnel contract?—Yes. We lost £40,000 over the dock, which would have been available to lose over the tunnel.

60. So the troubles over that undertaking affected you financially to some extent?—They affected our financial position, but they really did not affect the loss or profit on this job at all, because the Government of the day came to our assistance and helped us financially.

61. *Hon. Mr. Fraser.*] The dock trouble simply affected your ability to bear the loss?—That is right.

62. *Right Hon. Sir J. G. Ward.*] It affected your ability to continue for a further period before you were financially embarrassed?—Yes.

63. *Mr. Davey.*] Has it ever been suggested by the Government that you or your firm or your engineers have shown delay or incompetence in carrying on this work?—No. There was a letter sent to us by the Under-Secretary complaining about delay, but there were no letters showing wherein we could improve matters, nor was there any complaint made in any particular direction.

64. It has never been shown that your plant was not up to date in any shape or form?—No.

65. It has never been shown that either you or your engineers are incompetent in any shape or form?—No, never suggested.

66. You say that if this extra amount of money is paid you the cost of the tunnel will run out to about £77 per lineal yard?—That is so.

67. Has not the tunnel so far as it has gone cost more than £77 a yard—I mean, the portion already constructed?—I should think not. I have not gone into that.

68. *Hon. Mr. Fraser.*] How many chains are there now completed?—We estimate that there is just about a third completed. We estimate that there are 6,226 lineal yards to complete yet; the total distance is 9,350 yards. I may say with regard to our estimate of the total cost that we have made it as low as possible. We left very little in it beyond recouping ourselves for what we have lost. There must be some allowance for contingencies that might arise.

69. *Mr. Davey.*] Supposing the bondsmen are called upon to pay, is it impossible to get any money from them at all?—I am pretty sure Mr. Nicholson is not worth anything like the amount. I want to point out to the Committee—and I trust they will take it into consideration—that Mr. Nicholson became bondsman in this matter purely out of friendship; there was not a thought of a sixpence of remuneration at all in his mind when he entered into it. It is quite different from the case of, we will say, a merchant here who looks for business in connection with the work. A merchant here going bond does so knowing that he has some risk, but hoping to make something out of it. In Mr. Nicholson's case, however, there was no thought of gain. He went bond purely from a friendship point of view, and because of the confidence he had in my brother and me. As far as I know he is not in a position to meet anything like the full amount.

70. *Hon. Mr. R. McKenzie.*] Is he a shareholder in your company?—No; he has not a solitary share.

71. *The Chairman.*] You say that he is not in a position now to see the thing through?—That is my opinion.

72. Was he when he entered into it?—I do not know that he was. We asked the Government to accept him, and they did.

73. *Mr. Davey.*] What would be the amount if he were called upon to pay?—£25,000.

74. He could be called upon to pay much more if the other bondsman could not pay?—Yes.

75. Then, there is practically no security available, outside of Mr. Nicholson, if the Government called on the bondsmen?—No; it is all involved in this work now.

76. The deposit is still good?—Yes.

77. *Mr. Okey.*] Supposing that some scheme should be brought forward for giving you the additional price, what guarantee could you give that the work would be carried out for that amount?—It is difficult to say. I was talking to a friend of mine last night in reference to a question of that kind, but the scare of labour throughout the Dominion is such that I could not offer any real guarantee at all.

78. Your company would not come forward?—The company are so satisfied about the matter that they would not advance one shilling, I think.

79. They would not come forward as guarantors?—Some of them are wealthy men, and realise that they have made a loss, and are prepared to meet it. They have told me that. The wealthy men among the shareholders told me that. They never gave me any encouragement in that direction. Still, if there were such a proposition made, of course I could put it to them and see what I could do in the matter.

80. Under your suggestion they would get their money back?—The loss on this work, yes; they would get a proportion of it back.

81. Would it mean that they would get back their loss on this Wellington dock?—No.

82. Supposing you came out with a profit, would it go to them?—They are preference shareholders. They have submitted a proposal to me that might alter that a little bit, but I have not got a guarantee from all the shareholders in connection with it.

83. So it would be really in your interests to liquidate the company before you entered into any fresh arrangements?—I suppose it would, but I do not like to throw over the shareholders. I want to point this out to the Committee: some of the shareholders are personal friends and relatives, or connections by marriage, at any rate, and when we formed this company we felt quite convinced there was a very fair profit in it and induced them to join, and the whole of the shareholders took up shares on their personal knowledge of myself and my brother, and, I suppose, on our reputation as contractors. So I do not like to see the shareholders left out.

84. *Hon. Mr. Fraser.*] What was the value of the shares of the company: were they £1 shares?—Yes, fully paid up.

85. How many were there?—45,000, all cash. There was £90,000 in cash altogether put into the company, £45,000 by my brother and myself, and £45,000 by outside shareholders.

86. Then there is no uncalled capital?—No.

87. It is all paid up?—Yes.

88. And of that, £40,000 went in the dock?—Of that £90,000, £40,000 went in the dock.

89. *Mr. Okey.*] Do you anticipate that if you went on with the work it would all be considered wet work?—No, I do not consider it would be all wet. There is a good deal of wet time now, and the headings are mostly worked in wet; but after the headings are driven and we commence to widen out, the water takes up somewhat, and then the men working on the side walls and in the widening-out on the break-up are generally working in the dry. But the headings are mostly wet.

90. If you started again, do you anticipate that you would have to work under the bank-to-bank clause?—I hope not; but if we do start again I am quite sure we shall have to increase the wages to induce men to come to the place. I do not think we should have to work under the bank-to-bank clause. I should make an arrangement to halve the loss, and I think there would be no trouble about it if the wages were sufficient.

91. The shareholders have received nothing out of the contract?—Nothing at all.

92. You say the popper-drill has been introduced since you took the contract?—Oh, yes, but the use of the popper-drill is very limited as far as we are concerned. It is really for arch work, but is a very useful drill for the purpose.

93. *Hon. Mr. Fraser.*] You could not work with the popper-drill all through?—No. Our drills are very heavy machines; they have $3\frac{1}{4}$ in. cylinders.

94. *Mr. Okey.*] Do you see any chance of reducing the cost of administration—it works out at 11 per cent?—Oh, yes, administration would be reduced at once. The position is somewhat awkward. I do not know that I can explain it quite to the Committee. That administration charge would never have been so large there if it had not been for the company being formed.

95. You mean that if you were carrying on yourselves, you would not have to make the draw for yourselves that is shown in the statement put before us?—That is so. £500 or £600 a year to live on would have been all we should have drawn.

96. It was an arrangement with the company that you and your brother should draw so-much?—That is right.

97. That brings up the administration to a great extent?—Yes.

98. *Hon. Mr. R. McKenzie.*] Your administration expenses, I think you said, were about £400 a month?—Something like that.

99. That would be about £5,000 a year. That includes £3,000 for yourself and your brother?—Yes.

100. So outside of that the administration expenses are very reasonable?—Yes. Of course, they are a very heavy percentage owing to the small quantity of work that we have been able to do—the small number of men that we have been able to employ.

101. When was this company formed?—In 1908 or 1909.

102. Before you started the work?—No, we had been going some time before we formed the company. It was at the end of 1908 or early in 1909.

103. *The Chairman.*] Before you saw any difficulties in the tunnel?—Oh, yes. If I had anticipated the difficulties I should have dropped everything at the time. As I tell you, I induced some of our connections to go into it.

104. *Hon. Mr. R. McKenzie.*] Of the plant that you got originally, after you went to Europe, there has been a considerable portion displaced, has there not?—Yes.

105. What would be the value of the portion displaced?—It is really not displaced. The machines are kept up by renewals from month to month. The books would show exactly the cost. The machinery to-day that is working is as good as the machinery that was working when we started.

106. You applied to the Government for £20,000, largely to replace machinery that was found to be unsuitable for the work?—No, I think not. It was to provide for plant that we had already there and that we subsequently procured.

107. What was the plant that you procured?—Three locomotives—two electric and one steam—and a steam navvy. I cannot bring to mind the other items, but it was further plant that the loan was for, and also to pay for plant that we had already purchased and were not able to pay for.

108. Your motive power in the tunnel now is entirely electrical, is it not?—Yes.

109. Originally you used oil?—We did; we used an oil locomotive.

110. *The Chairman.*] You tell us that the tunnel has cost approximately £77 per lineal yard to date?—Well, it looks like it.

111. You estimate £77 per yard for completion?—Yes.

112. How, then, can you recoup any loss which you have incurred up to date if you only estimate £77 for completion?—But our loss is included in the £77 a yard.

113. *Hon. Mr. R. McKenzie.*] The plant at present really belongs to the Government?—Yes; we have no claim on it.

114. The Government paid you 50 per cent. of your invoice cost, did they not, and advanced you £25,000 in addition against it?—Yes. Of course, they hold the retention of 10 per cent. on the total work done. With regard to the term of the contract, I think there is some misconception. We really tendered to do the work in six years: that was in our tender. Our tender was only conditionally accepted—that is, subject to the five years; we would have to accept the five years, as it was in the specification. Really, our tender was informal. I should like to add that any information I can give in any way I shall be only too willing to give you.

APPENDIX.

EXHIBIT A.

COMPARISON BETWEEN REEFTON AWARD AND PRESENT WAGES PAID ON ARTHUR'S PASS TUNNEL CONTRACT.

	REEFTON AWARD.		OTIRA WAGES.	
	Forty-eight Hours' Pay for Forty-seven Hours' Work.	Equals per Day of Eight Hours.	Per Day of Eight Hours.	Percentage over Reefton Award.
	s. d.	s. d.	s. d.	
Shift bosses	11 8	11 11	13 6	13·29
Machinemen (top and bottom headings)	10 6	10 8½	12 6	16·73
" all others	10 6	10 8½	12 0	12·07
Chuckmen	10 0	10 2½	11 0	7·70
Shovellers in bottom heading	9 0	9 2	11 0	20·00
" all others	8 0	8 2	10 6	28·57
Truckers	8 0	8 2	11 0	34·69
		Wages paid at Commencement of Contract.		Increase.
Motormen ... ..	...	10 0	12 0	20·00
Concretemen ... ..	...	9 2	11 0	20·00
Block-lifters ... ..	...	10 0	11 0	10·00
Block-layers ... ..	...	10 6	12 6	19·05
Power-house and compressor men	...	11 0	12 0	9·00

EXHIBIT B.

ARTHUR'S PASS TUNNEL CONTRACT IN ACCOUNT WITH JOHN MCLEAN AND SONS (LIMITED), 30TH JUNE, 1912.

	£	s.	d.		£	s.	d.
To Sundry creditors	1,264	0	0	By Sundry debtors	118	5	4
Interest due	1,152	2	3	Cash on hand and in bank ..	3,426	0	2
Insurance Account	109	10	10	Balance	53,418	13	11
J. McLean and Sons—cash disbursed	54,437	6	4				
	£56,962	19	5		£56,962	19	5

ARTHUR'S PASS TUNNEL CONTRACT.

Balance-sheet, 30th June, 1912.

	£	s.	d.		£	s.	d.
To New Zealand Government—				By Expenditure on plant	73,255	8	4
Advances on plant and materials ..	34,411	0	0	materials on ground	5,077	13	3
loan	25,000	0	0	New Zealand Government—			
John McLean and Sons (Limited) ..	53,418	13	11	Deposit	5,000	0	0
				Retentions	20,689	0	0
				Certificate due	4,113	0	0
				Loss on Contract	4,694	12	4
	£112,829	13	11		£112,829	13	11

Profit and Loss Account from Commencement of Contract to 30th June, 1912.

				By Contract.		Discounts, &c.									
				£	s. d.	£	s. d.	£	s. d.						
Sept., 1909.	To working-expenses	..	41,267	0	9	Sept., 1909.	31,420	..	97	3	3	..	31,517	3	3
" 1910.	"	..	64,129	18	5	" 1910.	66,821	..	539	5	3	..	67,360	5	3
" 1911.	"	..	66,633	16	5	" 1911.	67,679	..	670	7	5	..	68,349	7	5
June, 1912.	"	..	41,332	2	2	June, 1912.	40,976	..	465	9	6	..	41,441	9	6
						<u>£206,896</u>		<u>£1,772</u>		<u>5</u>		<u>5</u>			
						Balance (loss*) ..		..		4,694		12		4	
</															

* To this loss of £4,694 12s. 4d. has to be added depreciation on plant.

EXHIBIT B—continued.

Receipts and Expenditure from Commencement of Contract to 30th June, 1912.

	£	s.	d.		£	s.	d.
Amount received from New Zealand Government on account of work done, advances on plant and material, and on loan, as per certificate No. 54, to 30th June, 1912.. ..	241,505	0	0	Total expenditure on works	213,362	17	9
Received for discounts, &c.	1,772	5	5	" plant	73,255	8	4
Amount invested in contract by J. McLean and Sons	53,418	13	11	" materials on ground	5,077	13	3
				Deposit, New Zealand Government	5,000	0	0
	<u>£296,695</u>	<u>19</u>	<u>4</u>		<u>£296,695</u>	<u>19</u>	<u>4</u>

EXHIBIT C.

ARTHUR'S PASS TUNNEL CONTRACT.—SCHEDULE.

		£	s.	d.
Excavation—				
Cuttings to banks	13,778 cub. yd. at 4s.	2,755	12	0
Borrow-pits to banks	87,142 " 4s.	17,428	8	0
Tunnel	312,816 " 21s.	328,456	16	0
Manholes	405 " 21s.	425	5	0
Brickwork—				
Lining side walls	3,009 " 70s.	10,531	0	0
Lining arch	2,214 " 75s.	8,302	10	0
Concrete—				
Lining side walls	16,151 " 57s.	46,030	7	0
"	10,767 " 68s.	36,607	16	0
Arch-blocks	11,726 " 62s.	36,350	12	0
"	7,817 " 74s.	28,922	18	0
Drain, sides and bottom	1,489 " 57s.	4,243	13	0
"	992 " 68s.	3,372	16	0
Drain-cover slabs	424 " 70s.	1,484	0	0
Manholes	156 " 60s.	468	0	0
Extra excavation, Section A	3,000 " 15s.	2,250	0	0
" Section B	3,200 " 15s.	2,400	0	0
" lining, side walls, Section A	1,700 " 62s. 6d.	5,312	10	0
" arch-blocks, Section A	1,300 " 70s.	4,550	0	0
" lining, side walls and invert, Section B	2,200 " 62s. 6d.	6,875	0	0
" arch-blocks, Section B	900 " 70s.	3,150	0	0
Rubble masonry in tunnel-fronts and retaining-walls	388 " 65s.	1,261	0	0
Dressed stone in quoins, &c.	800 " 5s. 6d.	220	0	0
Concrete in 4ft. culvert and drains	332 " 60s.	996	0	0
Puddle in ditto	45 " 10s.	22	10	0
6 in. glazed stoneware pipes in cross drains in tunnel	1,000 lin. ft. at 2s.	100	0	0
12 in. glazed stoneware pipes	600 " 5s.	150	0	0
Pipe-ends	24 each at 120s.	144	0	0
12 in. timber box drains	60 lin. ft. at 5s.	15	0	0
Rock-facing bank, 6-ton to 8-ton stones, 51m. 70ch. to 52m. 20ch.	6,000 cub. yd. at 12s.	3,600	0	0
Rock-facing, 5-ton stones, Bealey Station-yard and groyne	620 " 10s.	310	0	0
" 3-ton stones	3,450 " 9s.	1,552	10	0
" 1-ton stones for groyne	2,550 " 8s.	1,020	0	0
Excavation, 4 ft. drain, Bealey	3,234 " 3s.	485	2	0
Catchwater drains at top of cuttings and water-table drains toe of slopes		200	0	0
Change-houses and workmen's huts		2,500	0	0
Temporary bridge across Bealey		3,000	0	0
Engineering and plant		34,300	15	0
Total		<u>£599,794</u>	<u>0</u>	<u>0</u>

EXHIBIT D.

JOHN McLEAN AND SONS (LIMITED).—LEDGER BALANCES, 31ST JULY, 1912.

	£	s.	d.		£	s.	d.
Plant and materials	71,486	5	2	Capital	130,000	0	0
Sundry debtors	83	18	3	New Zealand Government—			
New Zealand Government—				Advances on plant and material	33,925	0	0
Retentions	21,159	0	0	Advances on loan	25,000	0	0
Certificate	3,740	0	0	Interest on loan	1,152	2	3
Deposit	5,000	0	0	Sundry creditors	1,134	13	1
Expenditure on works	46,128	4	6	Insurance Account	156	12	6
Goodwill Account	37,540	14	4	Work on contract	45,672	0	0
Profit and Loss Account	49,281	0	3	Discounts, rents and commissions	360	2	7
Cash on hand—				Balance Groyne Account	137	1	7
Otira	73	3	8				
Bealey	40	0	0				
Cash in bank	3,005	5	10				
	<u>£237,537</u>	<u>12</u>	<u>0</u>		<u>£237,537</u>	<u>12</u>	<u>0</u>

EXHIBIT D—continued.
MEMO. RE COST OF WORKS.

	Two Weeks ending 17th July.		Two weeks ending 31st July.		Contract Price per Cub. yd. plus 6 per Cent.
	Cub. yd.	Shillings per Cub. yd.	Cub. yd.	Shillings per Cub. yd.	
Otira—					
Excavation ...	910	29·56	796	32·23	22·26
Lining concrete ...	171	47·35	159	50·63	60·42
" blocks ...	38	78·94	18	89·84	65·72
Bealey—					
Excavation ...	340	24·11	242	30·58	22·26
Lining-concrete ...	35	44·88	36	52·77	72·08
" blocks ...	24	62·88	38	65·36	78·44
Steam shovel for four weeks	...	...	1,347	2·87	4·24

PROGRESS OF WORKS, 31ST JULY.

	Distance from Portal to Face.		Equivalent Total Length of Tunnel excavated.		Equivalent Total Length of Tunnel lined.	
	M.	ch.	M.	ch.	M.	ch.
Otira end ...	1	71·17	1	52·88	1	35·15
Bealey end ...	0	27·91	0	25·73	0	24·66
Total ...	2	19·08	1	78·61	1	59·81

EXHIBIT E.

My estimate of £100,000 to complete tunnel was based on bare figures at our disposal, providing for no special contingencies. On more careful consideration another £30,000 or £40,000 to provide for all possible contingencies should be added.

RATES OF WAGES PAID, OTIRA TUNNEL.

	Commencement of Contract.		From April, 1912.		
	s.	d.	s.	d.	
Shift bosses, per day of eight hours	12	0	13	6	
Machinemen, top and bottom headings	11	0	12	6	
" all others	11	0	12	0	
Chuckmen	10	6	11	0	
Shovellers in bottom headings	10	6	11	0	
" all others	10	6	10	6	
Truckers	10	0	11	0	
Motormen	11	0	12	0	
Concretemen	10	0	11	0	
Block-lifters	10	0	11	0	
Block-layers	10	6	12	6	
Power-house and compressor-shed	11	0	12	0	
Steel-sharpeners and smiths	11	0	12	0	s. d.
Strikers	10	0	10	0	and 13 0
Fitters	11	0	11	0	and 10 6
Carpenters	11	0	12	0	to 13 0
Wagon-drivers (five-horse teams)	11	8	12	6	
Horse-drivers (one-horse)	10	0	10	0	
All other outside labourers	10	0	10	0	
Tunnel foremen, per week	£4	0 0	£4	10 0	and £5 0 0
Foreman carpenter	£4	10 0	£4	10 0	

ARTHUR'S PASS TUNNEL CONTRACT.

	Wages.	Engineering and Salaries.	All other Charges.	Total.
	£	£	£ s. d.	£ s. d.
1909—30th September ...	18,471	4,998	17,798 0 9	41,267 0 9
1910 " ...	43,459	3,341	17,329 18 5	64,129 18 5
1911 " ...	44,875	4,778	16,980 16 5	66,633 16 5
1912—31st July ...	31,650	3,642	6,040 2 2	41,332 2 2
	138,455	£16,759	£58,148 17 9	£213,362 17 9

EXHIBIT F.

ARTHUR'S PASS TUNNEL CONTRACT.

Contractors—J. McLean and Sons (Limited). Contract let, 1st August, 1907: to be completed, 1st August, 1912. Deposit, £5,000. Bond, £25,000. Penalty, £280 per week.

					£
Contract price	...	...	...	...	599,794
Addition to contract (as per engineer's statement)	...	...	...	...	8,427
					608,221
Reductions (as per engineer's statement)	...	...	...	...	3,230
					£604,991
Work done to 31st July, 1912 (as per engineer's statement)—					£
Original contract	...	...	...	...	203,165
Additional works (including Bealey Bridge)...	...	...	...	...	8,427
					211,592
Less 10 per cent. reserve	...	...	...	...	21,159
					190,433
					£
Plant	...	...	...	...	63,786
Material on site	...	...	...	...	4,064
					67,850
Less reserve	...	...	...	...	8,925
					58,925
					£249,358

CONTENTS OF TUNNELS.

(P.W.D. 21753 and 24385.)

High.	Width.	Centre. Rail-level.			
17 ft. 1 in. × 15 ft. × 13 ft....	Excavation	...	...	=	31.0 cub. yd. (includes size for lining).
	15 in. lining	...	...	=	6.7 "
	Excavation	...	...	=	29.9 "
	12 in. lining	...	...	=	5.37 "

Arthur's Pass Tunnel.

(P.W.D. 21898.)

16 ft. 9 in. × 15 ft. × 14 ft....	Excavation	...	...	=	33.4 cub. yd. (includes size for lining)
	12 in. lining	...	...	=	5.4 "

Round Hill Tunnel.

Old design.

15 ft. × 12 ft. × 10 ft....	Excavation	...	...	=	21.4 cub. yd. (includes size for lining).
	12 in. lining	...	...	=	5.2 "

(P.W.D. 14891.)

15 ft. 6 in. × 12 ft. 6 in. × 10 ft.	14 in. arch	...	...	=	3.05 cub. yd. per yard run.
	Excavation	...	...	=	24.4 " (includes size for lining)
	14 in. walls and footings...	...	...	=	2.80 "
	Total lining, 14 in. thick	...	...	=	5.85 "

ARTHUR'S PASS TUNNEL CONTRACT.

Starts 52 m. 67 ch. 36 l. and ends 58 m. 12 ch. 40 l. = 5 m. 25 ch. 0.04 l.

Contract time expired, 1st August, 1912.

Work done as measured up on 4th July, 1912.

Percentage done.		M. ch. l.	Total. M. ch. l.
.42	{ Otira—Excavation of bottom heading	1 68 87	
	{ Bealey— " "	27 90	
			2 16 77
.36	{ Otira—Excavation of top heading	1 47 27	
	{ Bealey— " "	24 28	
			1 71 55
.33	{ Otira—Excavation completed	1 35 89	
	{ Bealey— " "	23 65	
			1 59 54
.32	{ Otira—Concrete lining completed	1 30 49	
	{ Bealey— " "	23 65	
			1 54 14

About another chain of side-walls has been constructed.

EXHIBIT G.

TUNNELS DONE BY CO-OPERATIVE LABOUR.—NORTH ISLAND.

Railway.	Section.	Dimensions.	Tunnel.	Date.	Length.	Total Cost.	Excavation, Cost per Lineal Yard.	Lining, Cost per Lineal Yard.	Total Cost per Lineal Yard.	Fronts.	Ground.	Lining of
North Auckland	..	15 ft. x 12 ft. 6 in. ..	Tahekerora ..	1902	488	£ 10,989	£ s. d. 13 16 0	£ s. d. 8 14 0	£ s. d. 22 10 0	£ 300	Papa and sandstone	Brick.
	..	"	Ahuroa ..	1904	424.6	9,775	15 10 0	7 10 0	23 0 0	300	"	Brick and concrete.
	..	"	Hoteo ..	1907	598	11,527	15 5 0	6 11 6	21 16 6	300	"	"
	..	17 ft. x 15 ft. ..	Mainene ..	1909	356.3	10,448	19 4 0	9 7 0	28 10 0	400	"	"
Paeroa-Waihi	..	"	Ross Hill ..	1911	374.6	17,491	28 7 0	12 5 0	40 12 0	2,276	"	"
	..	15 ft. 6 in. x 12 ft. 6 in. ..	Karangahake ..	1900-5	1,194	33,300	19 5 0	8 12 8	27 19 9	300	Heavy ..	Brick and concrete.
	..	"	Kaiteratahi ..	1905	202	6,548	18 10 7	13 17 8	32 8 3	300	Papa, rotten	Concrete and blocks.
Gisborne-Karaka	..	"	Karaka ..	1907	286	8,335	15 13 7	13 9 3	29 2 10	300	"	Concrete and blocks.
North Island Main Trunk, North end	..	17 ft. x 15 ft. ..	Spiral No. 1 ..	1907	418	10,552	12 18 0	12 6 11	25 4 11	300	Papa, &c.	Concrete.
	..	"	Spiral No. 2 ..	1907	99.6	2,887	14 4 0	15 5 5	29 9 5	300	"	"
North Island Main Trunk, South end	..	15 ft. 6 in. x 12 ft. 6 in. ..	Mataroa ..	1905	666	14,602	8 10 0	13 8 0	21 18 0	660	"	"
	..	"	Powhakarua ..	About 1897	600	11,328	8 14 0	10 2 0	18 16 0	300	"	"
	..	"	Makohine ..	1894	198	4,471	7 7 0	15 8 0	22 15 0	240	"	"
	..	"	Taihape ..	"	460	10,458	8 8 0	14 7 0	22 15 0	700	"	"
	..	46 miles 16 ch. ..	"	1902	127	2,683	7 15 0	13 10 0	21 5 0	300	"	"
	..	17 ft. x 15 ft. ..	Hapuaahenua ..	1904	235.3	6,433	10 18 0	17 14 0	28 12 0	300	"	"

TUNNELS DONE BY CO-OPERATIVE LABOUR.—SOUTH ISLAND.

Railway.	Section.	Dimensions.	Party or Tunnel.	Date.	Length.	Total Cost.	Cost per Lineal Yard of Excavation.	Cost per Lineal Yard of Lining.	Total Cost per Lineal Yard.	Fronts (costs included in other).	Ground.	Complete Cost per Lineal Yard.
Midland ..	Broken River	15 ft. 6 in. x 12 ft. 6 in. ..	No. 1 tunnel	1900 to 1905 (about)	248	£ 11,238	£ s. d. 22 16 0	£ s. d. 20 9 0	£ s. d. 43 5 0	£ 335	Disintegrated rock, with bands	£ s. d. 44 11 0
	"	"	No. 2 tunnel	Ditto	594	20,216	15 16 0	17 0 0	32 16 0	763	Ditto ..	34 0 0
	"	"	No. 3 tunnel	"	297	13,520	19 16 0	19 0 0	38 16 0	2,000	"	45 12 0
	"	"	No. 4 tunnel	"	418	14,643	20 0 0	14 9 0	34 9 0	245	Rock ..	35 0 0
	"	"	No. 5 tunnel	"	410.5	10,607	12 18 0	12 8 0	25 6 0	230	"	26 0 0
	"	"	No. 6 tunnel	"	164.5	4,709	22 2 0	21 9 0	43 11 0	160	"	45 0 0
	"	"	No. 7 tunnel	"	401.5	15,758	20 17 0	17 14 0	38 11 0	330	"	39 6 0
	"	"	No. 8 tunnel	"	583.0	23,581	18 12 0	21 6 0	39 18 0	306	"	40 10 0
	"	"	No. 9 tunnel	"	665.5	27,515	18 18 0	22 0 0	40 18 0	264	"	41 3 0
	Cass	17 ft. x 15 ft. ..	No. 11 tunnel	1907	176	..	18 6 0	17 6 0	35 12 0	..	"	..
	"	17 ft. x 15 ft. ..	No. 12 tunnel	"	66	..	12 15 0	10 4 6	25 19 6	..	Soft schist	25 0 0
Otago Central	Hyde tunnel	15 ft. 6 in. x 12 ft. 6 in. ..	No. 1 tunnel	1890 to 1907	165	..	..	..	23 10 0	..	Schist ..	..
	Poolburn No. 1	15 ft. 6 in. x 12 ft. 6 in. ..	No. 2 tunnel	"	222	19,866	..	..	41 12 11	..	"	..
	"	"	"	"	255	..	..	..	..	..	"	..

EXHIBIT H.
TUNNELS DONE BY CONTRACT.

Railway.	Contract or Tunnel.	Dimensions.	Contractor.	Date.	Length.	Total Cost.	Cost per Lineal Yard Excavating.	Cost per Lineal Yard Lining.	Total Cost per Lineal Yard.	Nature of Ground.	Nature of Lining.
Hurunui-Bluff	Caversham Lyttelton Tunnel ..	15 ft. x 12 ft.	..	1873	Lin. yds. 902 1½ miles	£ ..	£ s. d. 9 0 0	£ s. d. 15 0 0	£ s. d. 24 0 0	Sandstone ..	..
Dunedin-Clutha	Chain Hills ..	15 ft. x 12 ft.	J. Brogden and Sons	1874	484	£ ..	£ s. d. ..	£ s. d. ..	£ s. d. 53 8 0	Volcanic .. In faulty clay slate	Not lined. Cost as obtained.
	Mount Ceniz ..	Double line, 26 ft. x 26 ft.	..	..	..	£ ..	£ s. d. ..	£ s. d. ..	£ s. d. 206 0 0	..	..
Dunedin-Moeraki	Deborah Bay ..	15 ft. x 12 ft.	D. and J. McKenzie	1874	1,400	25,000*	£ s. d. 15 0 0	£ s. d. 9 in., 13 13 6 14 in., 19 3 6 18 in., 25 0 0	£ s. d. 228 to £40	..	(It had to be all lined as an addition to contract.
Tokomairiro-Lawrence	Round Hill ..	"	Morrison and Irvine	1874	176	3,739†	£ s. d. 18 0 0	£ s. d. ..	£ s. d. ..	..	Brick, lined all through as an extra afterwards.
Otago Central	Hindon Section (five tunnels)	"	C. and W. Gore	1884-86	three, 433 two, 118	£ ..	£ s. d. 12 10 0	£ s. d. 21 10 0	£ s. d. 33 0 0	..	..
Waitaki-Bluff	Livingstone Branch	"	Cuthbert and Stewart	1884-85	286	£ ..	£ s. d. 15 0 0	£ s. d. 31 0 0	£ s. d. 46 0 0	..	..
		"				5,000	£ s. d. 7 10 0	£ s. d. 10 0 0	£ s. d. 17 10 0	..	Masonry walls, brick arch.
North Island Main Trunk	Porootarao ..	"	J. J. O'Brien	1885-87	1,166	38,733	£ s. d. 13 6 0	£ s. d. 19 18 0	£ s. d. 33 4 0	Papa and sandstone	..
Auckland-Helensville	Waitakerei ..	"	M. Danagher	1879-80	242	8,032‡	£ s. d. 12 10 0	£ s. d. 20 15 0	£ s. d. 33 5 0	Ditto ..	Brick.
Wellington-Woodville	Waiwaka ..	"	"	1886-88	165	4,605	£ s. d. 11 7 0	£ s. d. 16 11 0	£ s. d. 27 17 0	..	..
Edendale-Toetoes	Glenham Tunnel ..	"	A. Menzies	1887-88	230	4,166	£ s. d. 6 2 0	£ s. d. 12 16 0	£ s. d. 18 18 0	..	..
Nelson-Belgrove	Spooner's Range ..	"	A. Maguire	1890	1,474	£ ..	£ s. d. ..	£ s. d. ..	£ s. d. 20 13 0	Boulder deposit	Lined.
Catlin's River Branch	Catlin's Tunnel ..	"	D. Kirkwood	(about) 1890	268‡	6,271	£ s. d. 11 13 0	£ s. d. 11 14 0	£ s. d. 23 7 0	Very hard rock	..
Blenheim-Awatere	Utawai ..	15 ft. 6 in. x 12 ft. 6 in.	McGrath and Burke	1890	77	2,024	£ s. d. 11 0 0	£ s. d. 15 3 0	£ s. d. 26 3 0	Papa ..	..
North Island Main Trunk	Mangaonoho ..	"	Oleghorn, Forest, and Magee	1890	110, 88	5,055	£ s. d. 12 15 0	£ s. d. 13 5 0	£ s. d. 25 15 0	"	..
Manawatu Gorge	Tunnels ..	"	J. McLean and Son ..	1890-97	637	£ ..	£ s. d. 8 6 0	£ s. d. ..	£ s. d. 31 10 0	Clay slate	Sound.
Helensville North	Makarau ..	"				11,846†	£ s. d. ..	£ s. d. 10 4 0	£ s. d. 18 10 0	In papa and sandstone	..
Westport-Inangahua..	No. 2 Contract ..	17 ft. x 15 ft.	D. McLellan	1910	88	8,518	£ s. d. 19 0 0	£ s. d. 21 0 0	£ s. d. 40 0 0	Rotien granite	Concrete.
	No. 10 Contract ..	"	Maxwell and Mann ..	1911	256	10,260	£ s. d. 16 10 0	£ s. d. 23 10 0	£ s. d. 40 0 0	"	"
	No. 14 Contract ..	"	D. McLellan	1911	176	8,000	£ s. d. 31 6 0	£ s. d. 14 3 0	£ s. d. 45 9 0	"	"
Midland	Arthur's Pass ..	16 ft. 9 in. x 15 ft.	J. McLean and Son ..	1907-12	9,354	568,000	£ s. d. 37 5 0	£ s. d. 23 10 0	£ s. d. 60 15 0	Clay slate	"

* About £20,000 extras.

† And extras.

‡ About £7,500 extras were paid chiefly on tunnel in bad ground where extra lining was used.

EXHIBIT I.

[Newspapers handed in by Mr. T. J. Malloy.]

EXHIBIT J.

[P.W.D. 21898.]

NEW ZEALAND.—PUBLIC WORKS.

ARTHUR'S PASS TUNNEL CONTRACT.

Schedule.

(Completion in Sixty Months.)

Quantity.	Item.	Description of Work.	Price.	Amount.
GENERAL SCHEDULE.				
		Earthwork—	s. d.	£ s. d.
11,276	C. yd.	Excavation—Cuttings to banks	2 6	1,409 10 0
104,252	„	Borrow-pits to banks	1 9	9,122 1 0
288,104	„	Tunnel debris to banks and Bealey Station ground filling	0 6	7,202 12 0
Nil	„	Tunnel debris to spoil .. .. .	..	..
		Tunnel—		
287,691	„	Excavation to inner surface of lining, Section A, and including drain and foundations	12 0	172,614 12 0
413	„	Excavation of manholes	15 0	309 15 0
2,135	„	Brickwork, lining side walls, Section A, 14 in. thick, quantity in 800 lineal yards specified	55 0	5,871 5 0
2,541	„	Brickwork, lining arch, Section A, 14 in. thick, quantity in 800 lineal yards specified	60 0	7,623 0 0
19,809	„	Concrete, lining in side walls, Section A, 12 in. thick, quantity in 8,554 lineal yards of tunnel	37 6	37,141 17 6
23,286	„	Concrete, arch blocks, Section A, 12 in. thick, quantity in 8,554 lineal yards of tunnel	55 0	64,036 10 0
1,109	„	Concrete, in drain, sides and bottom, Section A, 12 in. by 12 in.	40 0	2,218 0 0
1,159	„	Concrete, in drain, sides and bottom, Section A, 14 in. by 14 in.	40 0	2,318 0 0
1,264	„	Concrete, in drain, sides and bottom, Section A, 16 in. by 16 in.	40 0	2,528 0 0
1,637	„	Concrete, in drain, sides and bottom, Section A, 18 in. by 18 in.	40 0	3,274 0 0
413	„	Concrete, in drain, cover slabs	60 0	1,239 0 0
308	„	„ in manholes, Section A	40 0	616 0 0
3,000	„	Extra excavation, Section A	14 0	2,100 0 0
3,200	„	„ Section B	20 0	3,200 0 0
1,700	„	Extra lining, side walls, Section A	35 0	2,975 0 0
1,300	„	„ arch blocks, Section A	52 6	3,412 10 0
2,200	„	„ lining, side walls and invert, Section B	50 0	5,500 0 0
900	„	„ arch blocks, Section B	55 0	2,475 0 0
240	„	Rubble masonry in tunnel-fronts and retaining-walls	40 0	480 0 0
35	„	Dressed stone in quoins, string-courses, and copings..	90 0	157 10 0
		Culverts—		
849	C. yd.	Concrete in culverts and drains	40 0	1,698 0 0
1,000	Lin. ft.	6 in. glazed stoneware pipes in cross-drains in tunnel..	2 0	100 0 0
600	„	12 in. glazed stoneware pipes	5 0	150 0 0
24	Each	Pipe-ends	80 0	96 0 0
60	Lin. ft.	12 in. timber box drains	2 0	6 0 0
		Protective works—		
6,000	C. yd.	Rock facing, bank, 6-ton to 8-ton stones, 51 m. 70 ch. to 52 m. 20 ch.	8 0	2,400 0 0
636	„	Rock facing, 5-ton stones, Bealey Station yard and groyne	16 0	190 16 0
5,989	„	Rock facing, 3-ton stones, Bealey Station yard ..	4 0	1,197 16 0
308	„	„ 1-ton stones for groyne	2 6	38 10 0

EXHIBIT J—*continued.*

Quantity.	Item.	Description of Work.	Price.	Amount.
GENERAL SCHEDULE— <i>continued.</i>				
		Drains—	s. d.	£ s. d.
488	C. yd.	4 ft. drain, Bealey Station yard	2 0	48 16 0
930	Lin. yd.	Catchwater drains at top of cuttings	2 0	93 0 0
1,100	„	Water-table drains, toe of slopes	4 0	220 0 0
		Change-houses lump sum	..	4,000 0 0
		Workmen's huts, as specified .. ..	..	2,500 0 0
		Total .. ..	..	350,563 0 6

	£	s.	d.
	350,563	0	6
Cost of power (working)	27,000	0	0
Service-roads	11,000	0	0
Ventilation	7,000	0	0
Haulage	13,000	0	0
Plant, houses, &c.	50,436	19	6
Contingencies	41,000	0	0
	£500,000	0	0

NOTE.—This estimate was prepared by ascertaining the cost at which moderate-length tunnels in similar ground were being constructed at the time. To the total sum thus ascertained were added a number of sums to cover extraordinary additional costs through the greater length of this tunnel. This estimate was prepared by the late Mr. P. S. Hay, M.A., M.Inst.C.E., Engineer-in-Chief at that time.

EXHIBIT K.

PROPOSED AGREEMENT BETWEEN WEST COAST WORKERS' UNION AND JOHN McLEAN AND SONS.

(Forwarded by Mr. H. T. Armstrong, Secretary of the Union.)

The following are the rates of pay and conditions agreed upon by the Otira and Bealey Flat branches:—

	Per Day.
	s. d.
Labourers	10 6
Shovellers in tunnel	11 0
Truckers	11 0
Rock-drill men	12 6
Chuckmen	11 6
Shift-bosses	13 6
Blacksmiths	12 0
Blacksmiths' strikers	11 0
Timbermen	11 6
Concretemen	11 6
Block-lifters	11 6
Motormen	12 0
Guards	11 0
Youths under seventeen years of age	6 0
From seventeen to nineteen years of age	8 0
Over nineteen years of age, the rate provided for workmen.	

Conditions.

1. No youth shall be employed in the tunnel.
2. The hours of labour in the tunnel not to exceed forty-six hours per week on forty-eight hours' pay.
3. The time to be reckoned from the time the men leave the mouth of the tunnel until they get out again.
4. The hours of labour outside shall not exceed forty-six hours per week at forty-eight hours' pay.
5. Overtime shall be paid at the rate of time and a quarter for the first two hours, and time and a half after.

6. All Sunday work and holidays to be paid at the rate of time and a half. Holidays: Christmas Day, Boxing Day, New Year's Day, Good Friday, and Labour Day.

7. Wet places in the tunnel: Six hours shall constitute a day's work.

8. If union and employer fail to agree as to what is a wet place the Government Inspector in the tunnel shall act as arbitrator, whose decision shall be final.

9. The union to have the right to appoint inspectors, who shall be allowed to inspect the tunnel at any time when authorized by the union committee.

10. The employer shall agree to discharge any worker who does not become a member of this union and remain a member after he has been employed for fourteen days.

11. That houses for married men, with at least three rooms, be provided free.

EXHIBIT L.

REPORT ON STATEMENT OF ACCOUNTS OF MESSRS. McLEAN AND SONS (LIMITED) *re* OTIRA TUNNEL CONTRACT, HANDED IN BY P. S. WALDIE, INSPECTING OFFICER, PUBLIC WORKS DEPARTMENT.

I have the honour to report that I have examined statement of accounts submitted by Messrs. McLean and Sons (Limited) as to the 30th June last with the books of the company, and confirm the correctness of the figures given, except as regards the item "Sundry creditors," in which a sum of £11 16s. 7d. owing by the company could not be located from the books. The working-expenses for years shown in profit and loss statement submitted by the company are confirmed by audited statements of profit and loss, except as regards the year 1909. In the statement submitted the working-expenses to September, 1909, are shown as £41,267 0s. 9d.; value of work done on contract, £31,420. The *estimated* Profit and Loss Account for the year shows £38,767 0s. 9d. and £28,920 respectively. The sum of £2,500 provided for in the contract in connection with huts for workmen explains the difference between the actual and estimated charges, the Plant Account having been credited with the sum transferred to the working-expenses.

It is not claimed that the statement submitted by Messrs. McLean discloses the actual position of the company on the 30th June last, but the book balances at about that date. Thus the item "Interest due, £1,152 2s. 3d." is the interest accrued to the Government as on the 30th September last, when the annual balance took place; the interest due in that connection on the 30th June last amounted to £1,990.

Particulars of items comprising "Plant and materials" and "Working-expenses" to the end of June last are attached. Most of the items do not call for any particular comment, as a perusal of the list will disclose, but there are some items of expenditure to which attention is directed.

Included in the particulars of working-expenses to the 30th June last are the following, viz.: Interest, £1,863 3s. 4d. (paid to bank, &c., £711 1s. 1d., and accrued to the 30th September last against advances by Government £1,152 2s. 3d.); directors' fees, £300; auditor's fees, company's license fees, other expenses incidental to private individuals in business, also household expenses.

The cost of management has been at a high rate throughout, and bears a greater proportion to the work executed than would be the case if carried out by the Government. The amount expended on salaries, engineering expenses, and wages of foremen to the 30th June, 1912, was £26,796 13s. 8d., including £3,297 charged to plant, &c.: the percentage of cost of supervision charged to working-expenses to the total expenditure in that connection amounts to 11 per cent. Particulars of expenditure attached.

Salaries now paid are as follows, viz.: Two managers (at £1,500 per annum), £3,000; one engineer, £600; one accountant, £350; one electrical engineer, £300; one assistant engineer (£4 per week), £208; three timekeepers and storekeepers (£3 10s. per week), £546; one tunnel foreman (£5 per week), £260; three tunnel foremen (£4 10s. per week), £702; one outside foreman (£4 per week), £208; one foreman carpenter (£4 10s. per week), £234; two housekeepers (at £1 5s. and 15s.), £104: present annual rate of expenditure on supervision only, £6,512.

A careful examination of details of working-expenses shows that the Plant Account is not unfairly debited with the cost of renewals and repairs: such expenses are properly charged against working-expenses.

The cost of re-erecting buildings destroyed by fire is included in the working-expenses. No buildings are insured at present; but the premium payable to insure all the buildings would have probably equalled the loss incurred since insurance policies were allowed to lapse. I express no opinion as to the necessity to insure or otherwise.

I have pleasure in acknowledging the services rendered by the secretary to Messrs. McLean and Sons (Limited), Mr. J. Williams, who gave every assistance in connection with the examination.

Public Works Department, Wellington, 21st September, 1912.

P. S. WALDIE.

Expenditure in connection with Supervision, viz.: Salaries of Staff Officers, Foremen, Engineering, and Travelling-expenses, to 30th June, 1912.

				£	s.	d.	£	s.	d.
To 30th September, 1909—Salaries	..	..	..	6,976	19	9			
Engineering	..	..	..	989	19	4			
Travelling-expenses	..	..	..	1,398	6	2			
							*9,365	5	3
„ 1910—Salaries	..	..	..	3,453	7	3			
Tunnel foremen and carpenter	..	..	..	1,136	8	4			
Engineering	..	..	..	337	4	7			
Travelling-expenses	..	..	..	173	16	6			
							5,100	16	8
„ 1911—Salaries	..	..	..	4,907	10	6			
Tunnel foremen	..	..	..	981	10	6			
Foreman carpenter and outside foreman	..	..	..	442	0	0			
Engineering	..	..	..	895	6	4			
Travelling-expenses	..	..	..	63	11	6			
							7,289	18	10
To 30th June, 1912—Salaries	..	..	..	3,704	17	4			
Tunnel foremen	..	..	..	695	9	6			
Foreman carpenter and outside foreman	..	..	..	331	0	0			
Engineering	..	..	..	226	9	7			
Travelling-expenses	..	..	..	82	16	6			
							5,040	12	11
							26,796	13	8
Less charged to plant	..	..	..				3,297	0	0
Total	..	..	..				£23,499	13	8

Working-expenses to 30th June, 1912 (as per statement submitted) .. £213,362 17s. 9d.
 Percentage of cost of supervision.. .. 11 per cent.

* £3,297 charged to plant, including £800 for travelling-expenses of Mr. McLean visiting Europe.

Details of Charges against “Plant and Materials” and “Working-expenses” to the 30th June, 1912, taken from Books.

PLANT AND MATERIALS.				£	s.	d.
Plant	..	..	..	42,297	5	1
Buildings	..	..	..	10,481	14	0
Trucks	..	..	..	4,806	3	8
Telephones	..	..	..	256	14	4
Carts, &c.	..	..	..	731	13	8
House furniture	..	..	..	175	13	5
Office furniture	..	..	..	58	5	5
New road to store	..	..	..	575	1	10
Instruments	..	..	..	141	16	6
Punchbowl water-supply..	..	..	..	3,538	13	4
Holt Creek water-supply..	..	..	..	5,801	10	11
New line to river-bed	..	..	..	122	5	4
Horses	..	..	..	1,154	18	9
Steel for tools, carbide and lamps, machine and drill duplicates, oil, trestles, tunnel timber and sleepers	..	..	..	2,495	10	8
Materials and horse-feed	..	..	..	400	0	0
Rough Creek bridge	..	..	..	184	10	6
Explosives, cement, and blocks	..	..	..	5,077	13	3
				78,299	10	8
WORKING-EXPENSES.						
Accident-insurance premiums	..	..	..	2,709	7	2
Staff salaries	..	..	..	17,534	18	2
Tunnel and other foremen	..	..	..	2,579	8	4
Engineering	..	..	..	1,459	0	6
Clay	..	..	..	6	5	4
Horse-drivers and truckers	..	..	..	5,716	7	2
Headings	..	..	..	27,490	0	1
Widening out and top heading	..	..	..	27,746	15	6
Walls	..	..	..	15,100	3	5
Drains, footings, &c.	..	..	..	3,625	2	4
Blocking and concreting	..	..	..	9,578	14	3
Locomotive-drivers and brakemen	..	..	..	2,184	14	7
Roads and pipes	..	..	..	2,544	18	3
Transport of material	..	..	..	465	18	9
Shingle	..	..	..	3,407	8	6
Cleaning and fitting block-moulds..	..	..	..	1,516	13	5
Handling blocks	..	..	..	1,308	17	4
Groynes	..	..	..	882	9	1
Drain-covers	..	..	..	225	10	8
Sand	..	..	..	625	5	5

	£	s.	d.
Sundry labour	2,459	13	7
Steam-shovel excavation.. ..	699	16	7
Wages <i>re</i> excavation by steam shovel	815	11	4
Power	5,247	17	7
Lamps.. .. .	1,139	9	10
Temporary bridge at Bealey	755	7	7
Tipmen	845	1	4
Repairs	4,238	17	0
Locomotive fuel	575	13	7
Coal	897	14	10
New drying-rooms	351	2	4
Printing and stationery, &c.	189	18	8
Bealey Bridge	3,450	4	0
Travelling-expenses	918	10	8
General expenses	2,810	11	3
Stable Account	3,310	0	4
Materials	7,759	9	6
Steel and steel-sharpening	4,582	17	11
Carbide	902	5	8
Machine and drill repairs	749	17	9
Oil	477	18	9
Trestles	608	11	0
Tunnel timber	2,500	9	6
Sleepers	333	10	0
Cement, explosives, and blocks	28,844	6	8
Interest	1,863	3	4
Huts	2,500	0	0
Smithy wages	1,307	10	4
Fire insurance	78	19	10
Tunnel portals	2,595	13	10
Drill duplicates	1,686	10	7
Excavation	1,191	15	3
Total for working-expenses	213,396	8	8
Total for plant and materials	78,299	10	8
Grand total	£291,695	19	4

	£	s.	d.
Plant as per statement submitted.. .. .	73,255	8	4
Materials as per statement submitted	5,077	13	3
Working-expenses from 1st October, 1911, to 30th June, 1912, as per statement	213,362	17	9
Grand total	£291,695	19	4

DETAILS AS TAKEN FROM BOOKS.

Plant and materials as per previous sheet	78,299	10	8
Working-expenses	213,396	8	8
Grand total	£291,695	19	4

Questions put to Mr. Waldie by the Hon. Mr. Fraser, M.P.

Would the following figures, then, represent the position :—

	£	s.	d.
Cost of work	213,362	17	9
Value 100 per cent. of work as per contract	206,896	0	0
	6,466	17	9
Less various recoveries	1,772	5	5
	4,694	12	4
Add 10 per cent. of finished work to credit of Government to June	20,689	0	0
Add certificate for amount payable for work done during June	4,113	0	0
	24,802	0	0
	29,496	12	4
Deposit in hands of Government	5,000	0	0
	34,496	12	4
Book value of plant and material.. .. .	78,333	1	7
Advanced by Government to contractors—			
50 per cent. on plant	£34,411		
Cash advance	25,000		
	59,411	0	0
	18,922	1	7
Loss to contractors, assuming that Government terminated contract and seized plant, &c.	£53,418	13	11

A.—Yes.

EXHIBIT M.

TABULATION OF VARIOUS PARTICULARS OF ALPINE AND OTHER LONG RAILWAY TUNNELS.

[Handed in by Mr. Murdoch McLean.]

Name.	Place.	Date.	Double or Single.	Length in Miles.	Time occupied (Years.)	Approximate Number of Cubic-Yards Excavation per Yard Run, or Area in Square Yards.	Material penetrated.	Actual Wages of Common Labourer per Day.	Per Yard Run of Completed Tunnel.			Authority.
									A. Actual Cost.	B. Estimated Cost if Tunnel had been same size as Oitira.	C. Estimated Cost if Tunnel same Size as Oitira and at Oitira Wages.	
Mont Cenis.	European Alps	1875	D.	7.5	13	72	Schist	2s.	£ 213	£ 118	£ 275	Encyclopædia Britannica; Simm's "Tunnelling"; Engineering-Contracting, 10/5/1911-19/7/1911.
St. Gothard	"	1881	D.	9.0	7½	72	Gneiss, granite, schist	Allow 2s. 6d.	142	76	152	
Arlberg	"	After St. Gothard	D.	6.5	3½	72	"	" 3s. 4d.	95	48	80	
Simplon*	"	About 1906	Twin	12.4	6½	40 each	Gneiss, mica-schist, limestone	" 3s. 4d.	74 each	61 each	102 each	Encyclopædia Britannica.
Loetschberg†	"	1906-11	D.	9.0	5½	...	Granite, gneiss, limestone	Actual 3s. 4d.	...	...	...	Engineering News, 5/1/1911; Engineering Record, 17/12/1910; Engineering Contracts, 10/5/1911-19/7/1911.
Wochein	Austrian Alps	1901	D.	3.9	3½	72	Limestone, schist, slate	Allow 3s. 4d.	115	60	100	Engineering-Contracting, 4/1/1911-10/5/1911.
Karawanken	"	to 1910	D.	4.9	...	72	Limestone, schist	" 3s. 4d.	170	92	154	
Tauern	"	1910	D.	5.3	6	72	Granite, gneiss	" 3s. 4d.	140	75	125	
Bosrick	"	1876	S.	3.0	5	40	Limestone with water	" 3s. 4d.	73	60	100	Drinker's "Tunnelling."
Hoosac	United States	1876	D.	4.7	...	72	Mica-schist, and rotten rock	7s.	239	...	...
Lytelton	New Zealand	...	S.	1.6	...	...	Very hard sandstone to shaley slate	8s.	68	...	...
Oura	"	1912	S.	5.3	...	34		10s.	Contract 61			

* The Simplon Tunnel consists of a pair of single-track tunnels side by side.

† The Loetschberg Tunnel was estimated in 1899 by the consulting engineers, for single track: A, £66; B, £54; C, £90 (Engineering-Contracting, 19/7/11).

EXHIBIT N.

MIDLAND RAILWAY EXPENDITURE BETWEEN BRUNNER AND SPRINGFIELD TO 31ST AUGUST, 1912,
AND INCLUDING IMPREST EXPENDITURE TO 17TH AUGUST NOT YET ENTERED THROUGH THE
BOOKS.

	Expended by or on behalf of the Company, as per Valuation Table III, P.W. Statement.	Net Expenditure by New Zealand Government.	Total.
	£	£	£
Brunner-Jackson's	232,649	15,959	248,608
Jackson's—Otira Station	31,240	108,159	139,399
Brunner-Otira (expended by Railway Department, charged to A.O.L.) ... ..	...	5,777	5,777
Otira Station—Bealey (unopened)—			
Formation, &c. ... ..	...	57,950	307,308
Tunnel Contract ... ..	...	249,358	
Springfield-Cass	61,579	567,435	629,014
Cass-Bealey (unopened) ... ..	...	102,507	102,507
Totals	325,468	1,107,145	1,432,613
Opened line	325,468	697,330	1,022,798
Unopened line ... ..	...	409,815	409,815

G. J. CLAPHAM, Accountant.

Public Works Department, Wellington, 19th September, 1912.

EXHIBIT O.

OTIRA TUNNEL CONTRACT.—COST OF INSPECTION AND SUPERVISION TO 30TH JUNE, 1912.

Jan. 1, 1908, to Mar. 31, 1908—	£	s.	d.	£	s.	d.
Proportion of Engineer's salary	30	0	0			
Overseer's salary	45	0	0			
Chainman's salary	20	0	0			
				95	0	0
April 1, 1908, to Mar. 31, 1909—						
Proportion of Engineer's salary	183	15	0			
Overseers' salaries	294	13	4			
Chainman's salary	156	0	0			
				634	8	4
April 1, 1909, to Mar. 31, 1910—						
Proportion of Engineers' salaries... ..	195	0	0			
Overseers' salaries	415	2	9			
Chainman's salary	156	0	0			
				766	2	9
April 1, 1910, to Mar. 31, 1911—						
Proportion of Engineers' salaries... ..	244	7	1			
Overseers' salaries	807	5	10			
Chainman's salary	156	0	0			
				1,207	12	11
April 1, 1911, to Mar. 31, 1912—						
Proportion of Engineer's salary	219	11	8			
Overseers' salaries	1,337	5	10			
Chainman's salary	156	0	0			
				1,712	17	6
April 1 to June 30, 1912—						
Proportion of Engineer's salary	38	15	0			
Overseers' salaries	313	18	0			
Chainman's salary	39	0	0			
				391	13	0
				4,807	14	6
Add 10 per cent. for office-supervision, travelling-expenses, upkeep of horses and traps, &c.				480	15	6
				£5,288	10	0

G. J. CLAPHAM, Accountant.

Public Works Office, Wellington, 30th September, 1912.

Approximate Cost of Paper.—Preparation, not given; printing (1,200 copies), £60.

By Authority: JOHN MACKAY, Government Printer, Wellington.—1912.