1888.

NEW ZEALAND.

GOLDFIELDS AND MINES COMMITTEE.

INTERIM REPORT No. 2 ON ORDER OF REFERENCE OF 5TH JUNE, 1888, RELATING TO THE MINING INDUSTRY OF THE COLONY, TOGETHER WITH MINUTES OF EVIDENCE.

Report brought up 17th August, 1888, and ordered to be printed.

ORDER OF REFERENCE.

Extracts from the Journals of the House of Representatives.

TUESDAY, THE 5TH DAY OF JUNE, 1888.

Ordered, "That the Goldfields and Mines Committee be authorised to inquire into and report on the working of the Schools of Mines now established in various parts of the colony; also to report generally on the best means whereby the gold- and silver-mining industry of the colony may be fostered and encouraged."—(Mr. SEDDON.)

REPORT.

THE Goldfields and Mines Committee, to whom was referred the consideration generally of the best means whereby the gold- and silver-mining industry of the colony may be fostered and encouraged, have the honour to report:—

1. That, in the opinion of this Committee, the development of the vast mineral resources of the colony would be greatly furthered by their existence being brought prominently on every occasion before the world, so as to attract the attention of investors in mining enterprise, and lead to the introduction of foreign capital.

2. That your Committee are of the opinion that the Victorian Centennial Exhibition now being held, and the Paris Exhibition to be held in May next, both offer splendid opportunities of bringing our mineral products before the public, and that such opportunities should certainly not be neglected.

3. That your Committee, after making the fullest inquiry, are of opinion that it is desirable that the present mineral exhibits from the colony at Melbourne should be augmented by exhibits of auriferous and argentiferous ores, auriferous cements and sands, copper ore and nickeliferous sand, and other mineral products in bulk.

4. That your Committee are also of opinion that maps showing the several mining districts and chief localities where mining is now being carried on might with advantage be exhibited, also that the area of proved auriferous ground, the number of claims, the capital invested, and dividend paid should be published in pamphlet form and distributed gratis.

5. That it would be advisable, when the mineral exhibits of the colony are completed, to have a separate catalogue thereof compiled, and distributed gratis.

6. That, in the opinion of your Committee, it is to be regretted that the Mines Department left the collection of the mineral exhibits entirely to the Commissioners, and declined to take any active part in it, beyond supplying to the Commissioners the specimens in the possession of the Department; especially as the correspondence shows that the Commissioners desired that the mining industry should be dealt with by the department. It appears, however, that the Commissioners did not do the subject justice after being requested by the department to undertake the sole management of the mineral exhibits; for the specimens in the possession of the department were not obtained by the Commissioners and forwarded, nor was the chief officer of the department asked for information or for assistance. It would also have been much better had the Department of Mines taken steps to ascertain whether or not full justice was being done to the mining industry by the Commissioners in the way of supplying exhibits and information. From the evidence before the Committee, and from correspondence received, it is quite clear that the sums offered by the Commissioners to the several local committees were altogether insufficient to defray the expense of procuring exhibits. On the other hand, the Commissioners, though practising the most rigid economy, have exceeded the sum placed at their disposal. Want of sufficient funds may therefore be set down as one cause why the mineral wealth of the colony has not been more fully represented at the Victorian Centennial Exhibition. The Committee, however, are of opinion that, when the Commissioners found themselves unable to obtain a sufficiency of exhibits on account of the inadequacy of the sum allowed for expenses, they ought to have applied to the Government for more money, and, had their application been refused, the Commissioners would have been relieved of further responsibility in the matter. The Committee are also of opinion that,

considering the advantages derivable from the Exhibition, it is to be regretted that the local bodies, mine-owners, and residents in the several mining districts did not take greater interest in the proceedings of the Commissioners, and render them more effectual assistance.

7. That the restriction as to payment of Customs dues on auriferous exports was illiberal and had a most detrimental effect, and it is well, though somewhat late, that the restriction has been removed.

8. The Committee, having communicated, through the Chairman, with local bodies and persons interested in mining in different parts of the colony, and having received from them valuable information and very liberal offers of assistance in procuring exhibits of all kinds required, are of opinion that the several offers made should at once be accepted.

9. Your Committee further recommend that the Government procure, from each of the Auckland, Thames, Otago, Nelson, Reefton, and Westland Districts, large quantities of auriferous and argentiferous ores, auriferous cement and sand, and other valuable minerals, and arrange for the cost of transit thereof from the mines to the Melbourne Exhibition: the exhibits to be under the control of the contributors as to sale or reimportation

10. That your Committee further recommend that the New Zealand Handbook, in which the colony's mineral resources and mines are elaborately described, should be completed without delay and circulated at the Exhibition, and that the Handbook of New Zealand Mines compiled by the late Minister of Mines, the Hon. W. J. M. Larnach, together with other handbooks which may be compiled in reference to the mines and mineral resources of particular localities, be also circulated at the Exhibition.

11. That maps showing the areas which are held under lease or license in the several mining districts, and which are now obtainable, be procured and forwarded to the Exhibition, together with photographs, &c., of mines, water-races, hydraulic and dredging apparatus.

12. That your Committee recommend the Government to send to Melbourne, on behalf of the colony, an expert or experts in practical mining, possessing a knowledge of mining machinery and appliances, and the treatment, scientific and practical, of refractory, auriferous, and argentiferous ores, such expert or experts to note carefully and report on the mining machinery and appliances, and the several improved processes used in extracting the precious metals from the said ores.

13. That your Committee recommend that arrangement be made with exhibitors, where possible, that the mineral exhibits which remain over from the Melbourne Exhibition at the close thereof be forwarded, at the expense of the colony, to the Paris Exhibition.

14. Your Committee, in order to give effect to the opinions in this report expressed, recommend the Governments to provide the sum of £500 to defray the cost of procuring and forwarding additional exhibits to the Melbourne Exhibition, and a further sum of £500 to defray the cost of forwarding and procuring mineral exhibits to the Exhibition to be held in Paris next year.

15. That this report be referred to the Government for their favourable consideration.

RICHARD JOHN SEDDON,
Chairman.

17th August, 1888

MINUTES OF EVIDENCE.

THURSDAY, 16TH AUGUST, 1888 (Mr. SEDDON, Chairman).

M. Le Comte de JOUFFROY D'ABBANS in attendance, and examined.

1. *The Chairman.*] Sir, this Committee, having in view the furtherance of the mining industry of this colony, desire to have what evidence you can give on the subject. The idea has been expressed that, by contributing to the Paris Exhibition specimens of the mineral wealth of this country, we should be encouraging the mining industry of New Zealand. The House of Representatives has referred this particular matter to the Committee, and in order to be able to advise the House we asked you to do us the honour of being present here to-day to give us such information as would enable us to report, with recommendations, to Parliament. Will you be good enough to make a statement to the Committee?—I was two years in California, where I have been French Consul *ad interim*, and had the opportunity during my stay there to see how the French settlers in California were taking part in promoting the industrial enterprise of the country, and contributing more particularly to the development of its mining resources, side by side with the English, Germans, and others throughout the State of California, being also engaged in all agricultural directions. I think no better inducement can be given to French capital and people to come here than to do as they have done in California, Chili, and elsewhere in illustrating the strength and character of mining business that may be done with reasonable prospect of success. Mining speculation is the basis of nearly every other speculation. I take the liberty to present to this Committee and the Parliamentary Library this book ["Les Français en Californie," par Daniel Levy: San Francisco, Grégoire, Tanzy et Cie.; Libraires, Editeurs, 6, Rue Post, 1884], in which the writer shows what the French have done in California. This book has been compiled from official documents, partly by myself as collaborateur, and those honourable members who understand French, and will read it, may ascertain for themselves the beneficial results of the French emigration to America. French miners have gone there by tens of thousands, and French capital has followed them. French companies have been established at Paris and other parts of France for working claims in the Californian goldfields. But what is most important, from the year 1850 to the year 1870, it is estimated that more than 100,000,000fr. (£4,000,000) have been invested by the French in California. In this book you can see that the first large works in the mining districts, including railway-works, have been made by French people with French capital. In a passage at

page 64, which I have marked, it is shown that when the first French emigrants are unsuccessful at mining they turn to other pursuits and engage in them with success. They had been taught, and remembered how, to grow the vine, and at this time the wine industry, originated by French people of California, represents more than 30,000,000 gallons annually. As with wine-making so with gardening: the French grow vegetables and fruits for the mining people, and the crops have been so large that they have largely gone into the canning industry. The fruit industry of California is now worth $15,000,000 a year. In the Sacramento Plains they have supplied the mining camps with fresh provisions. In dairy-farming the French have done a great deal by introducing many processes of fabrication unknown to Anglo-Saxons. Every kind of French cheese is manufactured in California. You produce very good cheese here, some particularly good at Gore, in the south, but you have no variety. If you were to go to America you would find from twenty to twenty-five varieties of cheese at San Francisco. Any kind of cheese made in Switzerland, Germany, Italy, or France is made there quite as good as, sometimes better than, in the original country. I might mention the Camembert cheese, which is very largely imported from Normandy to Russia, in my opinion the best cheese in the world. This Camembert cheese is made by old miners of California, and is excellent. I might also mention the Gruyère, which is now vey much demanded in Melbourne, to which place a great quantity of it is imported from Europe. There is nothing to prevent New Zealand doing the same, as it has similar resources. It would be better for this colony if you could manufacture these varieties here. You would be sure of a market, for those varieties from Europe cannot very well stand the Equator. A great many industries have been established by the French on a large scale. I have marked different pages in this book, showing the number of Frenchmen living in California from 1849 to 1856, and the amount of capital they possessed, proving that the French, after the English, were the best class of immigrants that came to California at the beginning. I have also marked passages showing the large sums of money lost by fires, which shows that if these French people could lose so much from such a cause they must have something to lose. But, what is more important, it is shown in page 113 that from 1850 to 1870—as I have before said—more than a hundred million of francs, that is, more than four million pounds sterling, have been invested by the French there in mining speculation and enterprises. This book gives many other details of information about the French, and what they have done in California, and the creation by them of industries of all sorts. There are three French banks in San Francisco—the Comptoir d'Escompte de Paris, the London, Paris, and American Bank, and Belloc and Co. French capital has been usually invested in mining in the first instance, but soon after it was invested in many other directions—mainly agricultural; and it may be said that nearly all the French industries in California have been created by French people, who, having not succeeded in mining, have tried other means of living. From 1870 to 1884 more than £2,000,000 have been invested by the French in copper-fields in Lower California, and some very powerful syndicates have invested a million more in the neighbouring States. I can state from my own knowledge that while I was in America almost every month brought there some French engineer sent by some bank or capitalist to report about some mine. Many of the mines in California—not only gold mines, but silver and mercury mines, and the copper mines of Arizona—are worked with French capital. I think this book will show you that the French in California are not bad colonists. In California, when unsuccessful at mining, they indeed turned to other pursuits, but, as a whole, they have been successful as miners. In other parts of the United States of America the French mining industry is very important. I may mention Colorado, Oregon, and Idaho, Nevada, Utah, and Arizona, where they can be met. They have been as early as 1856 in British Columbia and the Alaska territories. When America bought Alaska from Russia, French prospectors went there. There is a very large amount of capital invested in copper mines all over North America. In Canada there is the Compagnie Française des Mines d'Or de la Riviere Moose. Only recently a very large French company have started in Mexico. The Rothschilds, of Paris, are interested in that undertaking, and there is nearly £1,000,000 invested in it. French companies and capital, it will be seen, are not confined to the United States and North America; they are found also in Central and South America. I may mention, for instance, the French Gold Company of Costa Rica, of which Messrs. Lescaune and Perdouse are the principals; two French companies in Honduras; in the Columbian Republic, La Compagnie des Mines d'Or d'Antoguia; in the Ecuador Republic, the French Mining Company of Guayaquil; in Guyanne, the French Society de Gisements d'Or de Dieu Merci; in Brazil, the Company of Ouro Preto (French capital, English management); and other enterprises in the Province of Spirito Sancto. In the Argentine Republic there are two thousand French miners in the various southern districts. In Peru there is the French Gold-mining Company of Ica. In Chili the French miners are very numerous, and, like those in California, have created many new industries. In the Dominican Republic there is a French exploitation of auriferous sand. In Northern Europe French enterprises have developed great mineral wealth. You meet them in Norway, where there has been, since 1872, La Compagnie Française des Mines de Phosphate de Bamble; also in Sweden, in iron mines and works. In the South of Europe, French miners are busy in Spain—at Almeira, Mercury mines; at Burgos, la Compagnie Minière Française, de la Province de Murcie. In Greece there is a French company at Laurium (silver). The last quotation of these shares show a value of £21 a share, £20 paid up, the amount of dividend being £1 5s. on the Paris Bourse. I have heard lately that the new French gold-mining enterprises, Transylvania (?), are very successful. In Africa the French mining enterprises have been successful: in Algeria, at Mockta-el-Hadid, the shares, £20 paid up, being now worth £32, and they have mining works on the shores of the Congo and Niger Rivers. Two great companies are working in the Cape Colony—(1) Compagnie Generale des Diamands, (2) les Diamants du Cap. French miners are in the South African Republic, near Pretoria. In Asia the field of French mining enterprise is noticeable. Extensive goldfields have been discovered in Siberia by the celebrated French engineer, M. Joseph Martin, and French capital has been largely invested in them—namely, in the Mines d'Or de Miass. I know M. Joseph

Martin personally. I met him at Singapore, when he came back from Siberia. He is a member of the Geographical Society of Paris. In Tonquin, French and English capitalists are associated together for mining undertakings. In the Straits Settlements, at Perak and Kinta, there are two French companies working tin mines. I am a shareholder in that of Kinta, which has just paid its first dividend. The capital in shares is 840,000fr., debentures 3,000,000fr., issued in Paris. I hand you in the annual report and dividend-sheet [produced]. There are three thousand Chinese engaged in the works at Kinta. The engineer, M. Errington de la Croix, was the Commissioner for the French Government at the Indian and Colonial Exhibition. He was a personal friend of the late Sir Julius von Haast. I understand that M. Errington waited on Sir Julius von Haast to inquire whether there was tin in New Zealand, for the French are very anxious to develop their tin enterprise. I would strongly recommend to this Committee, if there are any tin deposits in this colony, that exhibits from them should be sent to the Paris Exhibition.

The Chairman: There is tin in the colony.

Mr. Allen: I should think so; plenty.

Mr. Valentine: There have been specimens of tin sent over to the Melbourne Exhibition.

M. D'Abbans: I would also recommend that you should send to the Paris Exhibition specimens of antimony.

Mr. Grimmond: We have several antimony mines in New Zealand.

M. D'Abbans: In Oceania, French mining enterprise is noticeable, and in Borneo there is the Société Francaise des Mines de Diamants, de Borneo, near Pontianak, Messieurs Simmonard being directors. This is the largest enterprise in that part of South Borneo which belongs to the Dutch. I have myself been in Borneo, and seen this French company at work. They have imported portable railways and extensive plant of every description. It is a paying concern. There is a French Society for working tin mines at Billiton. A French syndicate is at present negotiating the Batavian Government for concessions of goldfields near Ateheh in Sumatra. I should mention the mines for nickel of New Caledonia. The shares are quoted 555fr. at Paris (500fr. paid up), which represents 55fr. premium per share. Nickel is likely to become important, seeing that, as the old copper currency is being called in, money of small value, such as halfpence and pence, will be made of nickel. I am not aware of any large mining enterprise in Australia where only a few isolated French miners are to be found, but I have no doubt that the establishment at Melbourne next year of a branch of the Credit Lyonnais, a very enterprising French bank, will bring French capital into Victoria and neighbouring colonies. This important bank has a capital of something like £10,000,000. They have established themselves in India and in almost every part of America. They have sent a representative to Melbourne, not only to report upon the Exhibition, but with a view of establishing a branch there next year, and they are investing large sums of money in mining enterprises. Money is cheaper now in France than in other parts, and the result is likely to be that the Credit Lyonnais will bring a large amount of capital not only to Victoria, but to all the Australasian Colonies. I firmly believe that a good display of ores representative of the mineral resources of this colony will attract a great deal of attention at the forthcoming Paris Exhibition. Gold offers the best inducement to emigration and capital from Frnnce and many other countries of Europe. The emigrants who leave their own country for the purpose of gold-hunting without finding it, as well as those who have succeeded, soon begin to wish for a quiet and settled life, so that it is not long before they engage in agricultural pursuits. There is not a single industry of France but has been introduced by Frenchmen into California. There is no form or method of cultivation and industry but they have introduced into California, the Argentine Republic, and Chili, and which might not be introduced here in the same way as a consequence of extended mining enterprise. I am aware that the representation of the mining industry in the Paris Exhibition generally will be the most complete that has ever been collected and exhibited. All kinds of machinery of the newest kinds, and all kinds of patents for the extraction of gold, silver, and all other metals and minerals from refractory ores, will be exhibited and tried. New Zealand ores could be tried at Paris, and New Zealand miners would be informed by the Commissioners of the practical results, and the improvements of every kind that might be adopted. Exhibits of coal would be very important, as the French in the Pacific are large consumers of coal. In this part of the world they need it for their establishments at Tahiti and Noumea. There are more than ten French men-of-war in the Pacific which have to import their coal from Cardiff. It would be a great advantage to them to be able to get their coal from New Zealand instead. Kauri gum would also be an important exhibit at the Paris Exhibition. We have very extensive manufacturers of varnish in France who get their gums from Borneo, Singapore, and other places. An exhibit of kauri gum would therefore be very much appreciated. Referring again to the Credit Lyonnaise, there has been a report sent in relating to the cultivation of beet and beet-sugar-making, in the hope of sending some manufacturers of sugar here. In France this year many small sugar-fabricants are obliged to amalgamate or stop works, because the percentage of sugar to be taxed per ton of beet according to our last law will be increased. Some of them could be induced to come to New Zealand for creating that important industry. I have the honour to place before this Committee some of the by-laws of the Universal Exhibition to be held at Paris which relate to the exhibition of minerals and metallurgical machinery:—

[Extract from the By-laws of the Paris Exhibition.]

FIFTH GROUP.—EXTRACTIVE INDUSTRIES. RAW AND MANUFACTURED PRODUCTS.

Class 41.—Products of Mining Works and of Metallurgy.

Collections and samples of rocks, minerals, and ores, hard rocks, refractory materials, moulds, soils, clays, various mineral products, raw sulphur, rock-salt, salt from mineral springs. Mineral fuel, various coals, residue and agglomerated; asphaltum and asphaltic rocks, bitumen, mineral tar,

raw petroleum, &c. Raw minerals: Cast-irons, irons, steel, steel-irons, copper, lead, silver, zinc, &c., mineral alloys. Products of the works of buddling ashes, of affinage of precious ores, of the gold-beater, &c. Products of the working of raw metals: Iron castings, bells, iron materials, special irons, sheet irons, tin plates, iron plates for blindage, for building, &c. Galvanised sheet iron, copper, lead, zinc sheets, &c. Worked metals: Iron works, locksmiths' works, wheels and tires, pipes, chains, &c. Wire drawings: Needles, pins, metallic cables, grating works, wire gauze, punched sheet iron. Products of hardwares, blackworks, boilersmiths' works, sheet-iron works, tinwares, &c. Various manufactured metals.

SIXTH GROUP.—MACHINERY AND PROCESSES OF MECHANICAL INDUSTRIES.

Class 42.—Products of Forests.

Boring material for surveying, for artesian wells, &c. Facsimiles in reduction; models, plans, and drawings of mines and quarries; mineral-water works. Machinery and apparatus for extraction, for subterranean descent of workmen. Draining of mines, pumps. Ventilation of mines. Safety-lamps, life-preservers. Parachutes, signals. Apparatus for mechanical preparation of ores and mineral fuel. Mineral fuel agglomerating apparatus. Carbonization, coke-burning. Furnaces and hearths for metallurgy. Smoke-consumers. General material of metallurgical works. Special material for smithery and foundry. Material for metal works of any description.

A catalogue of exhibits must be prepared in French.

Art. 16.—French and foreign exhibitors have no rent to pay for space. They have to bear the expenses of installation, decorations in the buildings, parks, and gardens. These expenses will comprehend essentially furnishing and flooring, columns or roofs in the palaces, special earthworks and special plantations in parks and gardens, alongside and inside the private buildings authorised by the Minister Commissary-General. The general floor is supplied free by the administration, in good and strong order, in every way of general circulation.

Art. 18.—No exhibit can be withdrawn before the end of the Exhibition.

Art. 20.—No Customs duties on exhibits. As concerns foreign exhibits all arrangements must be made through the Foreign Commissioners, accredited by the respective Governments, to the Commisary-General of the Exhibition, Monsieur Pierre Legrand, Minister du Commerce and de l'Industrie a Paris.

The New Zealand Commissioners could arrange at London with the English Committee, presided over by the Lord Mayor of London, for securing room in the English section for exhibiting minerals. By such arrangement no special space for New Zealand would be needed, and expense of flooring and decorating saved.

I have also the honour to hand to you a copy of the *Journal Official de la République Francaise*, in which (28th June, 1888, page 2684–5) you will see the quotations of some of those mining enterprises as follows:—

L'Aveyron (Soc. nouv.), act. 500fr., tout payé	
Belmez (houill. et mét), a. 500fr., t.p.	
Mines Campagnac, a. 1/000fr., t.p.	
Mines Carmaux, a. 1/23200° (ex-c. 4).	
Diamants (Cie générér), a. 500fr., l.p.	
Diamants du Cap, a. 500fr., t.p.	
Mines Grand'-Combe, a. 1/24000°	
Mines du Laurium, a. 500fr., t.p.	525fr.
Mines de la Loire	
Mines de Montrambert	
Mines de Rive-de-Gier	
Mines de Saint-Etienne	
Mines de Malfidano, a. 500fr. t.p.	1,175fr.–1,170fr.
d° a. de jouissance	
Mines Mokta-el-Hadid, a. 500f, 400p.	
Mines Mokta-el-Hadid, a. 500fr., t.p.	800fr.
Le Nickel actions 500fr. tout payé	555fr.
Penarroya (Soc.), a. 500fr,, t.p.	
Porman (Cie de), a. 500fr., tout payé, (ex-coup. 5)	
St-Elle (gisem. d'or), a. 500fr., t.p.	
Vigsnaes (Mines et Usines de cuivre de), a. 500fr., t.p. (ex-coup. 7).	235fr.–7fr.
Aciéries de France, a. 500fr., t.p.	
Loire (Atel. et. Chant.), a. 500fr., t.p.	
Ateliers de St-Denis, a. 500fr., t.p.	90fr.–80fr.
Châtillon et Commentry (Forges de).	330fr.
Commentry-Fourchamb., a. 500f, t.p.	
Fives-Lille, a. 500fr., tout payé	555fr.–550fr.
Forges et Aciéries du Nord et de	

If you decide to send exhibits to the Paris Exhibition it would be important to have them properly classified and catalogued according to the general plan of the Exhibition. You have here in abundance raw sulphur (at White Island and other places), and rock-salt and salts from mineral springs. I think it would be a good thing to attract general attention to the mineral and other springs of New Zealand. You have a good many globe-trotters coming this way already; but you may depend that every globe-trotter will visit the Paris Exhibition. Your hot springs are not much known in France. I think, from the point of view of advertisement, sending all these things will do a good deal to attract attention to this colony. Then there is petroleum, that is also very important.

The Chairman: One of your countrymen, I observe, is manager of the Hot Springs.

M. D'Abbans: For the advantageous display of your mineral products at the Paris Exhibition you should make arrangements with the English Committee through the Lord Mayor of London. That Committee has secured a very large amount of space. They are going to very large expense and making very great effort to exhibit English manufactures and products adequately. They would have the greatest interest in promoting what is beneficial to New Zealand, for they have lent ninety millions of pounds sterling to you, and it will be to their advantage to help you in every way. This question of space might be arranged for by your Agent-General, Sir F. D. Bell. I will write to the Director-General of the Exhibition to facilitate your endeavours in that direction. I know personally some officials of the Exhibition, and if New Zealand desires to be represented separately I am sure the French authorities would help you in every way. I have noticed in the morning paper that a committee of miners have recommended that the exhibits be returned to them. I would suggest that any person having exhibits at the Paris Exhibition could have them sold at Paris

with advantage, for there are thousands of collectors of minerals, besides numerous schools of mines and other institutions that require extensive collections of mineral products, who would be glad of the opportunity to purchase such exhibits. That is a matter, of course, for individual exhibitors to consider. The inventors of working-machinery would also have the great advantage of making their experiments and trial tests for advertisement of their inventions. I would suggest that you send these ores to be tested and analysed. The officers having charge would send you the returns, less perhaps the cost of manipulation, &c. The mining department of the Paris Exhibition will, I can perceive, be something enormous as compared with that of any previous Exhibition. It will afford a good opportunity for testing ores not well known. Some ores which are of no actual commercial value, because little known or not used, may prove to contain very important intrinsic value upon being analysed and treated by new processes. As to the expense of sending to the Exhibition they would be certainly higher for the representation of New Zealand by itself or separately, because if you send your agricultural, mineral, and industrial products of every kind it would be necessary to have a special New Zealand section. Space is given free; there is no rent to pay; but each foreign section has to be at the expense of flooring, decorating, and roofing the space allotted to it. I have made in one of the papers I have handed in a translation of the by-laws relating to that expense. If New Zealand should make an arrangement with the English Committee for having a portion of its space, as many of the other colonies have done, such as Hongkong, the Straits Settlements, who are sending exhibits to the English section, the expense would be less. At the same time it should not require a large space for a special section for New Zealand mines. I could not say what would be the expense in this case. But I think that for a few hundred pounds all the expense of exhibiting in conjunction with the English Committee would be met. In that case you would not require any separate space to be allocated to New Zealand.

2. *Mr. Grimmond.*] You say a "few hundred pounds;" what amount? Would you say a little more precisely? would £500 or £600 do it?—Yes; something like that.

3. Suppose the Committee to make a recommendation to the Government to send exhibits to Paris, what do you estimate would be the cost of freight?—I cannot say exactly what the cost of freight might be; but from Melbourne they would be minimised by the concessions made by the Messageries Maritime, whose steamers would take freight at 50 per cent. reduction, going there and back. I do not know what would be the tonnage of minerals to Melbourne.

The Chairman: About twenty tons, I should say, would cover the whole of it.

M. D'Abbans: I think the Government could make a speculation to send ores to the Paris Exhibition, part to be exhibited and part sold to defray the expenses. There would probably be some public advantage derived from it.

4. *Mr. Allen.*] Do you know if they are working auriferous ores in France itself?—I know that ores have been sent from parts of California to France; but I am not an expert myself in mining matters, and therefore I cannot give you with precision the information you ask. But we have schools of mines in France. They are very important institutions, and we have a great number of engineers who are engaged wholly in mining enterprises. The most celebrated school of mines is that at Paris.

5. Have you any large metallurgical works? You cannot recall any gold metallurgical works upon the scale that they exist in Germany?—I cannot give the names of these establishments, which certainly exist, as it is very long since I left France. At least, we have enormous mint works, not only for French, but also for other European currency.

6. Our object is to inquire whether this colony would derive benefit from exhibiting at the forthcoming Paris Exhibition?—I think your sending to the Exhibition would prove a benefit to the colony, for every person in Europe who takes any interest, whether scientific or commercial, in the development of wealth, is likely to go there. I have no doubt that the great industrials of Germany will go there, and that they will watch the French and foreign exhibits very closely.

7. *Mr. Brown.*] How long since you left France?—In 1877.

8. Are the schools of mines in France supported by the Government?—Yes; we have an official school of mines directed by M. Fuchs. He is Inspector-General of Mines in France. He has held that office for a considerable period of time. He is the same person that was sent by the Rothschilds to Lower California for the purpose of reporting on the copper-fields there. M. Fuchs was also sent by the French Government to Tonquin for the purpose of reporting on the coal deposits and silver mines there.

9. Are these establishments looked upon as an important feature in developing the mining enterprises in which France is concerned?—Yes; very important, because the young fellows of the Polytechnic School of Paris who graduated as engineers have to study in them. These young men rank according to their number in order, the three first numbers choose generally to be engineers for first tobacco State manufactories. The following numbers give the preference to the mines, and the others make their option as follows: Roads and railways, harbours, military engineering, naval school, artillery, &c. But the schools of mines are very important.

10. Are there fees charged to the students?—No. (1.) The students, after leaving the Polytechnical School and joining the School of Mines, are in the employment of the Government as officials, and get a salary. (2.) There are also students who are free, *i.e.*, without connection with the Government, admitted to the school after examination.

11. Then do I understand you there is no fee paid by those who graduate at these schools?—No. The first category are paid. I am not aware of the regulations concerning the second category.

12. Then I understand you that the French Government likes to give every possible help by way of encouraging young men to graduate at these schools?—Yes. We have not only the School of Mines at Paris, but we have the Central School (Ecole Centrale), another French Government school, where young men, engineers, are prepared for mining and other purposes. The school I

have mentioned at Paris is the largest school of mines in the world. The diploma given by that school is a very good one, being, I believe, highly appreciated everywhere.

13. Your mining engineers are experts in treating ores for silver and other metals, as well as gold?—In the French colonies mines are developed in every possible way.

14. *Mr. Grimmond.*] When does the Paris Exhibition open?—The 5th May, 1889.

15. Would there be time, after the Melbourne Exhibition, to send some of the exhibits there to Paris?—There would be just about time.

16. What time would the exhibits have to be there?—Some time in March. As for mining exhibits, I should say they would not require so much time in the arrangement of them. If you sent machinery, however, that would require more time.

17. *Mr. Allen.*] I should like to know whether the mining and metallurgical works in France are in the hands of speculators, or whether the French Republic itself has any interest in them?—We have in Le Creuzot very large ironworks engaged in turning out a variety of heavy machinery, guns, &c. That is quite a private industry, next to that of Krupp's, at Essen. The owners of these works are Schneider and Co. M. Schneider was Speaker of the French Corps Legislatif. We have very important works at Commentry-Tourchambaud, St. Etienne, Marseilles, and many other places. But the French Government have their own works, namely, in our five fortified ports, where twenty thousand hands are at work. Besides, there is the large foundry, belonging to the Marine Department, at Indret, near Nantes, Loire Inferieure. The works at Indret are under the supervision of a French admiral. Very large works are executed there for the purposes of the French navy. But private industrial establishments supply our navy, by special contract, with most important work, such as ironclads.

18. But recurring to the schools of mines: is that central school you speak of provided with a competent body of good teachers?—Yes. Besides, it has one of the best and largest mining museums in the world. We are paying a great deal of money every year for mineral museums in schools of mines.

19. But I want to know whether there is an efficient body of teachers provided for these schools?—Yes. I know personally the director. I met him in San Francisco when he came out on business for the Rothschilds to report on the copper-fields of Lower California. I have friends who have been at the French School of Mines. I have them in many parts of the world.

20. *Mr. Brown.*] Are you sufficiently acquainted with other parts of France to give us any information as to whether there are other schools of mines spread throughout that country?—Yes, at St. Etienne there is also a school of mines. We have also industrial schools (Ecoles des Arts et métiers) in different parts of France; the principal at Chalons and Angers. But there we are not forming engineers of high standing. They are trained and educated at St. Etienne or Paris. In those professional schools we are making what I may term sub-engineers, overseers, or foremen of works. Students are trained to every kind of industrial work. Young fellows are admitted when they are fourteen or fifteen years, and learn to be mechanicians, locksmiths, or to acquire any special branch of industry.

21. Are these institutions provincial and local?—They are State institutions.

22. All supported by the State?—Yes.

23. The State desires to spread over the country every kind of industry?—Yes. There are some industrial schools at Paris and some big cities which are supported by the local bodies. These municipal institutions are connected with some special branch of industry. The town where I was born, for instance (Besançon), is distinguished for its watch-making industry, which competes with Geneva. Of course, that industry is most important for that town. Consequently we have there a school for watch-making (Ecole de Horlogerie). It is supported by the Municipal Council, because it is of great local interest.

The Chairman: We thank you, Count d'Abbans, for attending this Committee, and for having given us very valuable information. We will give every attention to the suggestions you have made, and will probably recommend the Government to give every facility for carrying out some of them. If you will be good enough to communicate with your friend the Commissioner, that we may receive from him through you what he would recommend, we will recommend the Government to communicate with you the effect which they may be disposed to give to our report.

M. d'Abbans.] If you desire to send mineral exhibits to the Paris Exhibition I will prepare a little pamphlet in French, which will serve as a handbook to that part of it. It shall be made from official reports from the recent publication upon mines by the New Zealand Government. It will be a good way of informing people in Europe who are interested in mining questions what is to be found in New Zealand in the form of mineral wealth.

The evidence given by Mr. G. E. Tolhurst, Mr. S. Brown, Mr. R. B. Gore, and Mr. H. A. Gordon was not ordered to be printed.

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