1885.

NEW ZEALAND.

DEVELOPMENT OF COLONIAL INDUSTRIES

(FURTHER PAPERS RELATING TO THE).

Presented to both Houses of the General Assembly by Command of His Excellency.

II.—TRADE AND MANUFACTURES.

CORRESPONDENCE.

No. 1.

Sir JULIUS VOGEL to the AGENT-GENERAL.

SIR,— Wellington, 16th December, 1884.

I have the honour to ask your serious consideration to the question of whether it is in your power to do anything to promote the progress of manufacturing industries in the colony. As you are aware, without adopting any policy of protection as a matter of doctrine, the requirements of the country are such that a heavy revenue has to be raised through the Customs. As there is little prospect of the colony dispensing with heavy Customs duties for many years to come, and as there is not much disposition to have recourse to excise duties, manufacturers have the prospect of deriving considerable advantage from the tariff without any actual policy of protection being adopted. There is also a very essential aid to local manufacturers in the fact that New Zealand is situated so far from any other producing or manufacturing country. Again, there is every reason to believe that as New Zealand develops its manufactures it may find profitable markets for its productions in the islands of the South Seas, to say nothing of the probable extension to India in the future.

Several manufactures are already being carried on in New Zealand with more or less profit. There has been a great disposition during recent years to manufacture woollen products, and a considerable amount of success has attended these efforts. These productions are very beautiful, the wool, which is raised in the colony, enabling them to be made without any admixture or adulteration. Other productions of the colony, as well as imported raw material, are being subjected to manufacturing processes. I have asked Dr. Hector to prepare a memorandum, giving you a general idea of the present condition of manufactures in New Zealand, and the directions in which he thinks enterprise may find profitable channels. I may, however, before concluding, refer to the vast sources of wealth that lie at the command of the colony in its prolific fisheries. For example, the sounds on the south side of Cook Strait are annually visited by enormous shoals of pilchards. I need scarcely remind you what a source of wealth these fish are to the residents on the southern coast of England. I believe most profitable occupation might be found in extending the commencement already made in the direction of curing and tinning fish.

I shall be glad to obtain for you any information that you consider will be serviceable to you. I think it would be very desirable if you could place yourself in communication with some large supplying societies or firms, such as the Army and Navy or Civil Service Stores, or Whiteley's, with a view to ascertain whether there would be any disposition to offer directly for sale to the English public the products and manufactures of the colony, where these can be offered with due regard to economy. The frozen-meat industry is receiving so large an amount of attention that I am not aware whether you are able to render it any special assistance; but, if you can do so, I need scarcely say that it would be in the same direction of advancing the industries of the colony.

I have, &c.,

The Agent-General, London. JULIUS VOGEL.

No. 2.

COLONIAL INDUSTRIES AND MANUFACTURES.

MEMORANDUM by Dr. HECTOR for Hon. Sir JULIUS VOGEL, K.C.M.G.

THE latest statistics bearing on this subject relate to 1880, and were obtained by the census of April, 1881.

In 1881 a Royal Commission also specially investigated the subject, and reported fully, with voluminous evidence taken in all parts of the colony (App. H.R., H.-22, 1880).

It is somewhat difficult to ascertain, without extended inquiry, to what extent industrial employments have been developed since the above date; but several, at least, are now fairly established that were only alluded to prospectively in the report of the Royal Commission.

I attach a copy of reports which I made on the Industrial Exhibition at Dunedin in 1881, and that held at Christchurch in 1884, both of which afforded me an opportunity of observing evidence of the development I allude to; but, in order to place before you the present state of the various industries, so far as I am acquainted with them, I will take them in the order of the report of the Royal Commission of 1880.

1. Linseed.—Assisted by bonus, the lint plant and the production of oil and oil-cake has been well established. The climate has proved to be highly favourable, especially in the southern districts. No combination for the erection of district factories for the retting and preparation of the fibre has yet been effected, although the subject has been considered by parliamentary Committees. The technical knowledge required to form such combined factories, which on the Continent of Europe are, I believe, quite superseding the old system of the grower "retting" the flax, is an element in the development that will require to be imported. M. de Harven has some scheme of this kind with respect to the introduction of Belgian immigrants to this country.

2. Sugar.—The establishment in Auckland of extensive sugar-refining works makes it of pressing importance that, if possible, a sugar-producing crop should form part of the farmer's operations. Two sources have been suggested and experimented on—viz., sugar-beet and sorghum. The former is grown most successfully in the eastern aspect of the islands, as, for instance, Canterbury and Napier, and special legislation has been effected last session for its encouragement. Sorghum, grown in the northern part of the colony, treated by the recent improvement in the process of extraction recommended by the United States Agricultural Commissioners, has yielded to experiment a higher percentage of sugar than has been obtained in America. I attach an interesting paper, by Mr. Justice Gillies, giving the result of the latest of the experiments I refer to. ("Transactions N. Z. Institute," XVI., 512.) What is required on this subject is an opinion obtained from the best authorities as to the present prospect (after the American experience) of the profitable production of sugar in temperate climates.

3. Fruit Preserving.—This industry was becoming rapidly established, but the fruit trees in most parts of the colony have suffered to an alarming extent from insect blights during the past few years. Any recent literature bearing on the subject would be very useful; also information as to the latest improvements in machinery for preserving and canning, and for the manufacture of glass, earthenware, and tin cans.

4. Tanning Extract.—Wattle trees for tan-bark are being grown to a small extent, but the subject does not receive the attention it deserves. Lately certain experiments relating to the preparation of extracts of the astringent principle of some of the native trees, made many years ago in Taranaki, are attracting renewed attention. It is found that not only the bark, but also the wood of smaller branches of many of the native trees and shrubs, that are at present destroyed in a most wasteful manner, will yield extracts of great value for tanning and dyeing. There is now a large export of bark of the toatoa to Germany for tanning and dyeing, by one process, the beautiful fawn-coloured leather now in fashion for ladies' gloves. Along the railway lines, especially in parts of the North Island, there is a deal of timber that yields extractive matter rotting on the ground or growing within easy reach. If portable machinery could be applied so as to save carriage of the bulky raw material, I have no doubt that very valuable extracts for the use of tanners and dyers could be profitably manufactured. I am under the impression that something of the kind is done in some parts of Europe and America, and information on the subject would be useful.

5. Silk.—The bonuses offered to encourage the silk industry have never been taken up. It appears to me that the mistake on the part of those who have tried is, that the mulberry trees are planted in the positions and under such circumstances as if the production of a fruit, and not abundance of succulent leaves, were aimed at. All varieties of the mulberry grow well, and also the ailanthus; and splendid samples of the "grain" and of the silk have been produced and exhibited. An expert, Mr. Federli, employed by Government, is very sanguine of the success of silkworm culture in New Zealand, if only persons who have been born and bred to the business could be introduced as immigrants in sufficient numbers. The valuable feature in the culture of "grain" or ova in New Zealand would be, that, without having to be kept dormant for six months, during which period they are most liable to become diseased, the alternation of the season would permit of the eggs being sent to Europe by direct steamer just in time for the mulberry tree coming into leaf.

6. Olives.—Sufficient has been done to prove that the olive will succeed well in New Zealand. Being a plant of slow growth, its cultivation on a large scale cannot be encouraged too soon. For a long time to come the high rate of labour may prevent much attention to the production of oil, even after the olive trees bear well; but as the manufacture of the finest kinds of woollen goods develops, the demand for oil will spring up, as olive-oil, even of coarse quality, is necessary for woollen stuffs. A systematic importation of olive truncheons of the best varieties should be arranged for. We grow a good many here from eyes and buds; but they make feeble and uncertain trees, and after fifteen or eighteen years it is too late to discover that the wrong kinds have been propagated. (See I.-10, 1881, p. 7.)

7. Tobacco.—The growth and manufacture of tobacco is fairly established, and has succeeded well commercially. The Maoris grow quantities of coarse tobacco for their own use, and there is no doubt that the climate even in the interior of Otago suits the growth of the plant and the production of its valuable alkaloids. Sir Joseph Hooker, some years ago, sent out a variety of tobacco seed that succeeded better than any other kind in producing leaves; but the seed it produced was

lost or proved unfertile. Perhaps a selection of seeds could be procured of varieties that are considered worth experimenting with.

8. Cement.—Several establishments now manufacture Portland cement and hydraulic lime. The materials are found abundantly in convenient situations for establishing works; and the experience of concrete structures, both for ordinary buildings and massive works, has created a strong public opinion in their favour. I believe that artificial hollow concrete stone will become the chief building material in Wellington and many other parts of the colony where natural building material is scarce. The chief defect in the cement produced in the colony is its irregularity of strength, which makes contractors chary of using it, especially when the imported cement is so cheap; but this will be overcome in time, it cannot be doubted, by the employment of better skilled labour, under the superintendence of those who have been brought up in the business. Unfortunately there has been hitherto too much of the sanguine amateur element in the management of this and many other branches of industry developed in this colony.

9. Coal.—The important question of utilizing the enormous quantities of brown-coal slack for the manufacture of compressed fuel, has been repeatedly urged, but the field is still open for practical efforts in that direction. There is no doubt that it would be a most remunerative industry, for the reasons that were brought prominently forward by the Select Committee on Native Fuel (I.–7, 1876—copy attached).

10. Pottery and Stoneware.—Large establishments have been erected in all the chief centres for making bricks, tiles, pipes, and all kinds of coarse pottery. The only effort to establish a factory for delf-ware was at Milton, in Otago; and the works were unfortunately destroyed by fire, causing great loss to the workmen, who were also the co-operative proprietors. But the quality of the ware was excellent, and the designs were rapidly improving. As the same clays, of most excellent quality, similar to the Bohemian clays, are found in many parts of the colony, and the consumption of such goods is large—the freight and breakage being a heavy charge—I think there must be a fair field for this industry.

11. Glassware.—Only one or two glassworks are established, and chiefly make lamp glasses, chimneys, and the like. The enormous importation of glassware and glass bottles, and the consequent abundant supply of broken glass for re-smelting, has made it almost unnecessary to make the glass from the raw material; but this abounds, of all qualities. The industry is worth the attention of any persons skilled in the trade that desire a fresh outlet, and could bring with them the necessary workmen. The statistics of imports will afford the best basis for answering inquiries on this and kindred questions.

12. Ironworks.—A bonus is offered both for pig iron and for wrought iron. There is only one iron furnace at work in the colony—at Onehunga—the ore used being black ironsand from Manukau Heads, and the product being bloom iron, obtained by a single process. The venture has not been very successful so far. At Collingwood the foundations were laid for blast furnaces, but the property passed into the hands of Messrs. Brogden, and nothing further has been done, except working the coal and making experimental trials for cement. The locality is very favourable for ironworks, as along with the coal-seams spathic iron ore occurs, and in the vicinity there are large deposits of limonite and hematite. There are many other localities where extensive deposits of limonite occur along with brown coal and limestone.

13. Paper-making.—One or two mills, for wrapping-paper only, are at work, and a bonus is offered for printing-paper. In 1871 I made the following suggestions, founded on experiments in the laboratory. The action of the alkali upon the fibres of *Phormium tenax* appears to be that of altering, and probably thinning, the cell-wall, so as to render it capable of absorbing water with rapidity. The fact that the *Phormium* fibre can be reduced by a single process to the half-stuff of the paper-maker, but having the very unusual property of being composed of complete fibre-cells, having an equal length of about half an inch, and at the same time possessing a pure colour and glossy lustre, may perhaps lead to the introduction of a totally new class of manufacture, by which a material will be obtained with even greater facility than ordinary paper, of fine quality, and at the same time possessing an even texture, cohesive strength, and body. After the proper form is given to the fibre by taking advantage of its gelatinous condition when wet, there would be no difficulty in drying it in contact with such material as would prevent the fibres again absorbing water. ("Phormium Tenax," by Dr. Hector, p. 85.) This suggested method for preparing a material from the New Zealand flax (*Phormium*), by a pulping process, which would have nearly all the strength and properties of a woven material, and could be made waterproof if required, has never yet been taken up by any one. I believe there is an immense outlet for *Phormium* in this direction. The difficulty is, that it would be a new material to the market. Moreover, since the demand for *Phormium* hemp has decreased the plant has been largely destroyed and the flax-swamps drained, so that there is not now the same quantity available; but it could easily be propagated again from the best varieties. The value of paper imported last year was £115,394, so there should be a fair opening for this business. As for supply of material, no rags were used and less than forty tons were exported last year, so that there must be abundance of this material going to waste in the colony, considering that the annual import of cotton goods, which must pass in time into paper-making rags, exceeds 5,000 tons, and £210,000 in value.

14. Fisheries.—The natural wealth of the New Zealand fisheries is as yet almost undeveloped, and the efforts in this direction have been very crude and entered on without the least regard to the knowledge of the subject which is necessary. The establishment of small fishing communities in connection with fish-curing factories is what is required. The local supply is very capricious and irregular in all the centres of population, and might be regulated by the application of the freezing process for preserving the fish. The large steamships would alone absorb a large quantity of frozen fish, and some of the better kinds could even be placed successfully in that form on the London market. Australia also offers a large market, as the fish on that coast are much inferior to those of New Zealand. But the most steady and largest outlet for the fisheries industry

would be in canning fish for export on a large scale. I think it would be quite worth while to send Home a complete collection of our marketable fish, three or four specimens of each, in a frozen state, and to get a specially-skilled taxidermist to take casts and to mount the skins of one set for the Colonial Exhibition of 1886. If the collection were promised to the British Museum, at South Kensington, Dr. Gunther would no doubt take a special interest in reporting on the collection and seeing that the specimens were properly prepared. The whole collection would not be sent at once, but by different opportunities, as the fish happened to be caught in good condition.

21st December, 1884. JAMES HECTOR.

No. 3.

The AGENT-GENERAL to the COLONIAL TREASURER.

SIR,— 7, Westminster Chambers, London, S.W., 25th February, 1885.

I have to acknowledge the receipt, on the 14th instant, of your letter of the 16th December, calling my attention to the expediency of promoting the progress of manufacturing industries in the colony.

I hope to address you by an early mail on this important question.

I have, &c.,

The Hon. the Colonial Treasurer, Wellington. F. D. BELL.

No. 4.

TRADE WITH THE BRAZILS.

Mr. H. COWPER, Cambridge, Waikato, to the Hon. Sir JULIUS VOGEL, K.C.M.G.

SIR,— Cambridge, Waikato, 11th April, 1885.

I have the honour to acknowledge the receipt of your letter of 31st ultimo, in which you are pleased to offer to print my paper (a copy of which I here enclose) on "Trade with Brazil" for presentation to the General Assembly. It affords me much gratification to find you accord it your approval; and, if you think good results will follow its publication in the way you propose, I am, of course, only too glad to consent to your doing so.

I also enclose herewith a letter on the same question which appeared recently in the Auckland *Star*, and which is interesting, and so corroborative of my own views that I would suggest it as an addendum to my paper.

Thanking you for your courtesy, I have, &c.,

Sir Julius Vogel, K.C.M.G., &c., Wellington. H. COWPER.

Enclosure No. 1.

TRADE BETWEEN NEW ZEALAND AND BRAZIL.

[A paper read before the Industrial Association of Christchurch by Mr. H. Cowper, 25th July, 1884.]

THE very serious depression which for many months past has been hanging heavily on the trade and industry of this colony has given rise to much anxiety and thought in the minds of not only politicians, but of all who have the country's welfare at heart. It is not necessary for me to allude at any length to the causes which have led to the present deplorable condition of things. Over-importations of British and American manufactures by wholesale merchants on one side, and of labour indiscriminately by the Government on the other; the almost universal use of a paper currency; the high rates of interest and general dearness of money required for investments and to assist local industries; the prohibitory prices of land and high rentals which have operated so keenly against the success of our agricultural population; and, perhaps more effectually still, the unnatural stimulus to which we have so long accustomed ourselves by means of large expenditures of borrowed money, with, co-relatively, the unhealthy spirit of speculation which permeated society generally—these are more directly the mainsprings of our present evils. We have drunk deep and long of the wine of public extravagance, and we have been deluded with the glitter of a fictitious prosperity, till the whole of our economic system has been thrown into a dangerous burning fever. The body politic is now lying prostrated in a state of collapse and exhaustion, awaiting the results of such remedies as patient care and wise judgment can administer to restore a natural tone and vigour to the debauched and profligate frame. These remedies are to be found and applied only if we follow out a course of true economies, and they are such as, in the extraordinary and highly favourable natural circumstances of our colony, are to be met with ready at hand, merely waiting development. Before, however, proceeding to place before you the proposals which form the subject of this paper, I must ask your permission to touch briefly on some observations I have made during the last two or three months. During this period I enjoyed the advantages of travelling on horseback over most parts of South Canterbury, and have been thereby enabled to form a just estimate of the state of this province in particular, and, together with my intimate acquaintance with other important portions of the colony, to arrive at certain conclusions as to the requirements of New Zealand in order to lift her up from her present low condition. I have come in close contact with men of all classes and positions—the wealthy landowner and squatter, the large farmer, the small "cockatoo," the merchant, the shopkeeper, and the labourer—men of all shades of political opinion and of all denominations of religion, with all of whom I have enjoyed long discussions and friendly interchange of ideas and sentiments. To give you the pith of my experiences, so far only as they bear on my present subject, I will summarize them shortly under a few heads:—

1. The frozen meat is realizing such low prices in London that this industry is threatened with positive failure almost in its infancy, unless, under a different system of management, the actual consumers can be directly reached and retail prices secured.

2. The low price of wool and the fluctuations of the English and Continental markets yield unsatisfactory returns to the growers.

3. Grain has proved so thoroughly unprofitable during two seasons, especially the late one, and the outlook of the situation has so little encouragement, that farmers are wholly at a loss how to provide for the emergency.

There is over-production of these great staples of the colony, for which the limited population cannot furnish anything near to a just proportion of consumers. The British markets have hitherto been the only channels for the disposal of our superabundant products; but many disadvantages and difficulties beset us in participating in the great marts of Britain, and still greater ones are rising which leave but little hope for us, and will shut us out altogether from them. We are too far from the great markets and consumers of Europe; we have no consumers of our own: we shall be swamped out by the vast productions and the limitless cheap labour of India as growers of wheat, and by the meat of the United States of America, Brazil, and Australia. Farmers realize this, and bitter experience has brought it home to them. I met with several who shipped their grain direct Home, and had thereby lost hundreds of pounds, the whole of the fruits of their industry and patient perseverance. Many, following the prevalent pernicious custom of hypothecation, had to refund large proportions of the advances made on their crops by the banks and loan companies. The "cockatoos" are desperately insolvent and unable to satisfy the demands of their tradesmen. I need not tell you what are all the causes I discovered pressing heavily and oppressively on our agricultural population; but you will agree with me that men who are paying rentals of from £1 to £1 5s., and even over £1 10s. per acre per annum, and who are reaping a harvest of an average of only ten or fifteen bushels to the acre, cannot be in a very flourishing condition at the present time. I can assure you that I came across whole districts of small farmers in a state of poverty, indebtedness, and despair, which surprised and shocked me. It seemed inconceivable that such evils should exist in a rich young country like New Zealand, and the similitude of which I think can only be found in Great Britain and Ireland.

Such, in the abstract, is the picture presented to the traveller's observation by Canterbury at the present moment. There is a want of confidence in the colony's stability; a general desire to realize all available assets and abandon the country; a distrust of, seasoned with contempt for, our legislative machinery and institutions. Taking all these evils and errors into consideration, placing all these causes and effects under review, it must be evident to any thoughtful man that greater energy must be instilled into our system, more combined attention bestowed upon our immediate natural resources, and greater reliance placed on our own commercial instincts and enterprise, with far less dependence on the corrupt influences of paternal Government. The remote and insular position of these Islands fits them to become in the future a great maritime nation; and to fulfil this destiny they must likewise become a purely manufacturing people. I can see no hope for the real prosperity of the colony, in the face of chronic depressions, except in the determination to foster local industries and find profitable markets for their entire absorption. New Zealand should be the emporium of the Pacific. But even the islands of Oceania will not contribute sufficient consumers for our manufactures; therefore, also, other markets nearer than Europe must be found. The facilities and opportunities for finding a footing for our colonial articles have presented themselves for some time back, but, curiously enough, without gaining any attention. I here refer to the Brazils, at the capital port of which the direct steamers of the New Zealand Shipping Company are now touching every fortnight.

Here we have at once the offer of entirely new and profitable markets for nearly all our colonial manufactures, accompanied with consumers in unlimited numbers. I claim some knowledge of Brazil and the West Indies, from past personal experience and existing connections. Brazil itself is a country of vast expanse, with a population of twelve or fourteen millions, principally on its extensive seaboard. It is an independent empire, as you are, no doubt, aware. It has great towns and seaports, and its population consists chiefly of Portuguese, Spanish, Africans, and aboriginal Indians. Rio is a beautiful and well-built city, with one of the grandest harbours in the world, and a population of 300,000. The climate is tropical, but not oppressive. I may say it is moderate. The winters are similar to our own, with cold, severe frosts at night, followed by warm, pleasant days. With such a great extent of territory the climate would be very variable with every degree of latitude met with, from equatorial in the north to temperate in the south. Rio Janeiro, therefore, would be a capital field wherein to introduce New Zealand produce and manufactures. You must bear in mind that this people are all consumers, that they prefer quality to inferiority, that they form a dear market, and that there the cost of living is exorbitantly high. The purity of New Zealand textile fabrics, and the freshness and unadulterated make of our products, would compare most favourably with the imports into Brazil from England and the United States of America, whilst with careful management and forethought we could land our goods there at a price that would safely compete with other foreign shipments. It would be to the interest of the New Zealand Shipping Company to assist the development of a Brazilian trade by charging the lowest possible freights, in order to counterbalance the high cost of labour in this country.

I have only referred to Rio wherein to secure a footing in the first instance; but, if you direct your attention to the map of South America, you will find other great territories, with numerous populations and thriving cities, to which the introduction of New Zealand commodities could be extended. Looking to the south of Rio, you pass Santos, a large and important seaport (where my brother is British Consul). Then you come to the noble Rio de la Plata, where you will find the capital cities of Buenos Ayres and Montevideo, great centres of independent Spanish Republics. The River Plate is navigable for large ships for a thousand miles, and is the highway to the States of Paraguay and Bolivia, with the cities of Corrientes and Asuncion. These countries are remark-

able for cattle-breeding, and have a temperate climate. Now, it must strike you that, with the facilities at your command for reaching these countries within twenty days, and with their aggregate population of nearly twenty millions of consumers of various tastes, you are practically within easy touch of highly profitable markets, which can in time become sufficient to tax all your energies and powers of production.

These are the conclusions forced upon my own mind by the observations I have made in my travels through the province, and these are the views I placed before many competent judges, to whom they appeared quite new. So much interest did I excite that I was frequently advised to call upon various gentlemen interested in certain local industries and discuss the subject with them. Since my arrival in this city I have found opportunities to do so, and I am pleased to say have met with much courtesy and have been listened to with great attention, and your President was good enough to ask me to meet you here this evening to place the matter before you. Mr. Shanks, manager of the Kaiapoi Woollen Factory, very kindly showed me over the warehouse, where I was greatly impressed with the finish and superiority of texture of the cloths and numerous woollen fabrics. Now, it seems to me, as far as I can tax my memory of the goods imported into these regions, and as I have been able to gather data from the articles of colonial manufacture of which I have gained personal information, the following will form an enumeration of such as could be exported to the Brazils and Rio Plata. Woollen fabrics and clothing; hams, bacon, cheese, and salt butter; frozen fresh butter, fish, game, and fruits; preserved fruits and jams; smoked fish, sauces, pickles, candles, and soap; saddles, kangaroo leather, boots, and uppers; colonial jewellery and greenstone, and kauri-gum ornaments; photographs of New Zealand scenery; rope and twine; coal, timber, doors and sashes and mouldings; paper; ornamental ironwork, carts, and drays; potatoes, flour, biscuits, colonial wines, bottled ales, and whiskey; pottery and tiles; cement (Mahurangi lime); colonial furniture and kauri joinery; hats, rabbit fur, &c., &c. Now, it will naturally be asked what can be obtained from Brazil in return for our exports; but, unless steamers make direct return voyages to New Zealand, the return would probably consist of specie payments, which should be satisfactory enough. And I may say, *en passant*, that specie is the great currency there, not as here where paper rules supreme. The chief staples of Brazil are: Sugar, cotton, rum, molasses, coffee, tobacco, and bullion. There are also native cloths, diamonds, hammocks, pearls, cordage, preserved tropical fruits, and nuts; stuffed birds, monkeys, &c. It is possible the trade might lead to the introduction of raw cotton into New Zealand, and the birth of cotton-manufacturing industries in the colony. Of course, the system of exchange on commercial principles is an afterthought, and a matter of arrangement with banking institutions in London.

Now, gentlemen, I must not take up your time to any greater length. I have probably said sufficient to cause you to turn your attention to the importance of the subject, and that you may be induced to take concerted action to test its practicability. What seems to me the most feasible course to adopt—and I offer you the suggestion—is to form an association of gentlemen interested in local industries, who will provide a fund for the purpose of sending a competent gentleman to Rio, fully supplied with samples of all our best productions, for which he will endeavour to secure orders from the principal importers of that great city. Should his mission be a successful one, an agency should be permanently established there, to serve as a central dépôt for the whole coast, which would be afterwards visited by agents. He should, of course, study the local tariffs, which, as far as I can recollect, are not prohibitory—on the contrary, are liberal, being, I believe, *ad valorem* on the invoice entries. This representative of the associated merchants should continue his mission to the West Indies, to gather information that would be useful to the colony when the Panama Canal shall have been completed. He could then return by way of New York or Southampton in any of the regular steamers running to those places from the West Indies and Brazil. In conclusion, I may add that it is pleasing to me to observe a letter in the *Press*, written by Mr. Wilson, of Dunedin, in which he gives some interesting information about Rio confirmatory of my own description and views; and he also strongly advises the merchants of the Otago capital to do the very thing I am now proposing to you.

Enclosure No. 2.

NEW ZEALAND AND BRAZIL.

[Extract from Auckland *Star*, 5th March, 1885.]

MR. A. J. THOMAS, grocer, of Howe Street, and a native of Portugal, who was in Brazil during the months of September, October, and November last, made the following statement to a *Star* reporter to-day regarding the possibility of establishing a trade with Brazil:—

I went to Brazil for the purpose of visiting my family, some of whom reside at Rio Janeiro, and others in the provinces. While there I had opportunities of examining into the state of trade, keeping in my mind's eye the chances of a trade being opened up between this colony and the Brazilian Empire. While in Rio I was astonished at the immense shipping trade. I am sure the vessels in port would outnumber those in all the ports of New Zealand. The principal articles imported are flour, cheese, butter, bacon, and hams. The flour comes from France, Spain, and America, chiefly the latter. It is not good, resembling the variety known as "Silver Dust." The wholesale price of flour is never less than £17 or £18 per ton, and my brother, who is a grocer in Rio Grande, a seaport town five hundred miles south of the capital, informed me that it frequently reaches £19 per ton. As the best flour can be purchased in Auckland for £12 a ton in sacks, I think a lucrative trade in this article could be established. The freight from Auckland to Rio in one of the direct steamers should not exceed £1 10s. per ton. This would leave a handsome profit to the exporter. Cheese is imported from America and Spain. The Spanish cheese, which is very soft and unpalatable to English taste, is sold retail at 1,000r. (1s. 8d.) per lb. It is very badly made. The American cheese is retailed at 2s. per lb.; its quality is only

passable, and the factory-made cheese of this province is immeasurably superior to it. The native cheese is not cheese at all, and is only used by the very poor. Two or three times during my short visit there was no cheese to be obtained in Rio. I can buy the best cheese in Auckland, wholesale, from 6d. to 8d. per lb. Auckland cheese would fetch from £4 to £5 per cwt. in Rio, which is a much better price than that obtained for New Zealand cheese in the London market. I think the last English quotation for New Zealand cheese was £3 3s. per cwt. Of course, a direct supply would require to be kept up. There is no butter making of any account in the whole Empire. The butter used comes from France and other countries. It is generally packed in 1lb., 2lb., and 4lb. tins. It is fresh and passable, and is retailed at 2s. 9d. per lb. It may sometimes be cheaper, but that is the price at which my brother was retailing it while I was there. I did not see any salt butter. New Zealand salt butter in kegs should sell well there. It could be retailed at the low price of 1s. 6d. per lb., and return a handsome profit to the exporter. The price of fresh meat is much the same as here, and the quality very good. The mutton is not so good. There is a considerable quantity of American tinned meat consumed. The labels on the tins are in English, as, indeed, they are on all English and American goods; but I think it would be an advantage to label any goods sent from New Zealand in Portuguese, so that the people could know what they were buying. The labels should be translated literally into Portuguese. I saw considerable quantities of New Zealand potatoes in the shops of Rio. These were marked, "*Nova Zelandia Batatos*" (New Zealand Potatoes). They had just arrived by one of the direct steamers from Canterbury, and appeared to create a good deal of interest, as I heard a lot of talk about them. The shipment I saw was sent in sacks, and did not appear as good as the American potatoes, being considerably bruised. The Madeira and American potatoes sent to Brazil are always packed in loosely-made wooden cases, holding a hundredweight each. The potatoes so packed arrive safely. In good condition, New Zealand potatoes are immeasurably superior to those from Madeira and the States. The average retail price while I was there was 8s. per cwt. The great thing is to have the potatoes properly packed. Let them be placed on the market in as good a condition as the potatoes imported from other countries, and the consumers would use nothing else. The ham and bacon is principally American. While I was there it was being retailed at 2s. per lb. The smoked ham is preferred to that done up in cloth. Bacon is retailed at from 1s. 6d. to 1s. 8d. per lb. I did not see any New Zealand ham or bacon in Brazil, and my brother told me that it was never imported, to his knowledge. I believe New Zealand bacon and ham would suit the trade better than the American. We could export it quite as cheaply. In return for our produce, Brazil could send us coffee, tobacco-leaf, *mate* (a native tea), and sundry other minor articles of commerce. Brazilian coffee is the finest in the world, and if imported direct to New Zealand it would reduce the price very much. Pure-grown coffee is retailed in Rio at 8d.; the same quality could not be retailed under 1s. 8d. The cured-tobacco leaf, ready to be made into cigars, could, I think, be landed in Auckland at 7d. per lb. I understand that the Auckland companies are paying the farmers here from 8d. to 1s. per lb. for the uncured leaf. I do not think the Brazilians import any tobacco. I am a smoker, and know good tobacco when I smoke it, and can say that I have never smoked better tobacco than the Brazilian tobacco. It is retailed at 1,000r. per kilo.—that is, 1s. 8d. for 2½ lb. *Mate* is the ground wood-shrub that grows wild in all parts of Brazil, and is used as tea. Chinese tea is very dear. My brother was retailing tea for 3s. 4d. per lb. which in Auckland I could sell for 2s. I presume that the small quantity used is the cause of the high price. The *mate* is retailed at 4d. per lb. The taste of the infusion is almost like tea, the flavour being much stronger. The doctors say that its use is more healthy than tea, and I feel certain that if introduced here it would be largely used as a flavouring for tea, and probably by itself. These are the only articles that I made special inquiries about; but I believe that a good trade could be opened up for kauri timber and sashes and doors. Although there are splendid forests of hardwood, there is no soft wood equal to kauri, and they have no sawmills or wood-working manufactures, all the timber required for building being sawn in pits or imported from America. While I think there is a splendid opening for New Zealand produce in Brazil, I feel certain that it would not prove lucrative unless return voyages were made from Brazil to New Zealand, as the importers of our goods would expect us to take some of theirs in return. If the direct steamers came out *viâ* Rio as well as going Home by that route, it would be right enough; but I think that a handy cargo-steamer of two or three thousand tons burden, running from Auckland to Rio and back, would be the best method of developing the trade. The steamer "Triumph" would suit admirably. I am certain that, once the trade was established, return cargoes could be obtained in Rio in two or three days. The round trip from Auckland to Rio and back need not occupy more than fifty days. The facilities for loading and discharging are good. While I was in Brazil I had the pleasure of meeting the Emperor, Dom Pedro. My brother is a leading citizen of Rio Grande, and while I was visiting him, the Emperor being on a visit to that part of the country, he was entertained by my brother. The Emperor and one of his suite were conversing about the then expected arrival of the "Doric" with frozen meat from New Zealand, when my brother mentioned I had just arrived from that colony. His Majesty asked to see me, and I was ushered into the Imperial presence. The Emperor treated me very kindly, and asked many questions about the colony. He took great interest in the kauri forests, having read Hochstetter's work on the colony. I told him that I thought a good trade could be established, when he pointed out that a direct steamer from New Zealand to Brazil would suit the trade better than the present direct steamer from New Zealand to England.

No. 5.

Messrs. Masefield and Co., of Batley, Kaipara, to the Hon. R. Stout, Premier.

Sir,— Batley, 21st April, 1885.

We have the honour to bring under your notice the following facts in connection with your recent visit to the Kaipara, which we trust you will consider worthy of your notice. The chief

ndustries are kauri timber and gum, fish, and fruit. Farming, up to the present time, has not been a great success, as, although in some places large crops have been produced, owing to difficulty of disposing of them at a remunerative price, they have not paid.

Kauri Timber.—This is disappearing very fast, as it is not only sawn up in the district, but very large quantities of baulk timber are now being sent away: ships are loading here for Melbourne and Sydney with baulk timber. We think an export duty should at once be placed on all baulk timber leaving the country. Large quantities of kauri rickers are now being cut down and sent to Auckland and other places for spars. In our opinion this should not be allowed: no timber should be cut under a certain measurement. Bush-fires are also doing great damage to the forests here, and severe penalties should be enforced on all persons setting fire to the bush by carelessness or otherwise. As, however, in spite of all precautions, the country is sure to be gradually disforested, new plantations should be continually made, and care taken that only suitable trees be planted. Many millions of feet of kauri timber have been wasted in opening up the tidal bushes on the Wairoa by using it for making tramways, when a light iron rail laid down on the kahikatea would have done as well. Prices for gum are not good at present, and several storekeepers have lost heavily through sending direct consignments to England. If varnish could be manufactured in New Zealand a considerable amount of money would be saved. We would suggest offering a bonus for the manufacture of varnish.

Fish.—At the present time there is a plentiful supply of mullet, snapper, patiki, kahawai, yellowtails, sprats, and whitebait. Of these the mullet is the favourite in the district: large quantities of it are consumed fresh, some are smoked, and others canned. It is a capital fish to can, as it is firm, of good colour, and very pleasant flavour. Snapper are also very plentiful, and are eaten fresh and smoked; so far, we believe, none have been canned. Large quantities of patiki are taken, both by nets and spearing at night: it somewhat resembles the English sole, and is by no means a bad substitute. Kahawai is very plentiful, but is very little used, although a nice firm fish, and something similar to the English mackarel. There are also quantities of sprats, whitebait, &c. The oyster-beds here are very plentiful, and produce a medium-sized oyster of a very fine flavour. With a little cultivation the oyster-beds might be a constant source of income. All fish here breed in the months of December, January, and February, and it would be an excellent thing for the future if a close season could be fixed for those months, as we have seen great quantities of fish killed during that season full of spawn. During such season there would be no loss to the fishermen, as they could catch sharks and dogfish, for which, and also for their oil, there is a fair demand. If this is done Inspectors should be appointed to see that the Act is strictly enforced, and also directed to attend to the oyster fisheries. A clause in the Act forbidding fishing with nets of less than 3½in. mesh would be useful, and stop the destruction of young fish. With regard to fish-preserving we have now got in working order the steam retorts and all the latest American inventions to enable us to turn out a first-class article. We are canning now between 300 and 500 dozen mullet weekly; we are also smoking them. We are also canning snapper for export, chiefly to New South Wales, as they are highly thought of there. We are also making experiments with several other kinds, but we find ourselves heavily handicapped with the price of labour. We have at present twenty-seven hands engaged canning fish. We have tried Maoris, but find, although very quick when at it, they will not continue at work for more than a very short time; consequently we are obliged to give even boys £1 per week for fish-cleaning. We find many people in the colony prefer our mullet to the American salmon, but still we find it almost impossible to compete with it successfully under the present circumstances. Sir Julius Vogel, when last in Auckland, expressed his intention to our Mr. Masefield of advising your Government to offer a bonus on all canned fish in New Zealand; but we think it would be far more beneficial to the industry, and not only less costly but a source of considerable revenue to the Government, if an import duty were placed on all imported canned or preserved fish, and thus put us on a fair level with Victoria and other countries, where we have to pay a very heavy import duty on our canned fish; and it would also tend to show where the best fish are put up in the colony, instead of giving a bonus indiscriminately to all fish canned. We have four boats fishing for us, each carrying four nets and two punts, and, as we have some considerable capital invested, we shall esteem it a favour if an early intimation of your Government's decision in the matter is granted to us. We have taken the liberty of forwarding to you a case of our canned mullet.

Fruit.—This can be grown in very great quantities and of most excellent quality. Apples, pears, plums, peaches, grapes, figs, strawberries, mulberries, passion-fruit, Cape gooseberries, are doing well; but the planting of orchards has been greatly neglected here, possibly on account of the difficulty and expense of obtaining suitable trees, and also of the uncertainty of a sale for the crops. Even now but very few orchards are being planted. We should suggest a bonus being offered for every acre of ground that shall be planted with fruit trees, as we feel sure that, with some slight encouragement, the fruit production would become a very valuable industry, and, in time, supplant the American trade in canned fruit; for there is no doubt that this part of the colony is much better suited for fruit-growing than for cereal or root crops. If Government could also arrange for a distribution of good sorts of fruit trees to the settlers at a low price it would be a very great boon, as even now both their knowledge of which kinds are best suited to this district, and also where to procure them, is very limited. We have an orchard near here of about fourteen acres, from ten to fifteen years of age, planted chiefly with apples, pears, and plums, and find it in every way successful. It is true peaches have not been so plentiful the last year or two: this is probably owing to the fact that the trees are getting old, and also that the district is colder than it formerly was, owing, the settlers think, to the rapid destruction of the bush; but there is no doubt that, if peaches are planted with care as to a sheltered position, they will flourish. Raspberries, we believe, would also succeed in some parts, and we are about making the experiment. This year we commenced canning fruit and making jam. We purchased nearly all the fruit in the district at the following prices: apples, 2d.; pears, 3d.; and plums, 3d. to 4d.; and we have every reason to believe shall be able to do a good

business. We beg to forward you also a case of assorted fruits and jams we have just canned. We may state that our Mr. Masefield has been in the district for over twenty years, and our Captain Galbraith has recently made a tour over the whole of it; consequently we are in a position to speak with some knowledge of the subject. We have, &c.,

The Hon. Robert Stout. MASEFIELD and SONS.

No. 6.

MANUFACTURE OF GHEE.

MEMORANDUM by the Hon. W. REEVES, M.L.C.

THE attention of the public is just now largely attracted by proposals to increase the wealth-producing power of this colony by adding new varieties to our somewhat scanty list of saleable exports. New markets are also being anxiously sought for existing products. During the late session of the Assembly Sir Julius Vogel started the idea that British India might afford a suitable field for the consumption of our frozen meat. The replies received from Sir James Fergusson were not more encouraging than might reasonably have been expected, when it is remembered that our meat would not be touched by the great mass of the native population on account of religious prejudices, and that the European inhabitants are few in number, and already sufficiently supplied with a fair quality of meat. But, though India may not afford a market for meat, it does not follow that a trade in other kinds of our produce may not be profitably opened up with that country. It will be admitted generally that one of our most promising industries in the future is dairying. A large part of our land in both Islands is especially suited for the dairy, and our climate is even more suitable than the land. Ghee—in other words, rancid butter—is an article of almost universal use in many parts of British India. It is used externally and internally by millions of our Indian fellow-subjects, and is gradually becoming dearer as population increases and the land is taken up more exclusively for agricultural purposes. A very recent work (1884) on India, by Miss Gordon Cumming, contains the following information on this subject: "The annual consumption of ghee in British India (exclusive of Native States) is estimated at considerably over five million hundredweights, the value of which is about fourteen million pounds sterling. Its price varies from 5d. to 1s. per lb., but is gradually rising, owing to the continuous decrease of grazing land, consequent on the increase of cultivation. To meet the ever-increasing demand, the Indian Government have now invited the dairy-farmers of Australia to commence ghee-making on a large scale, offering to send Hindoo ghee-makers to instruct them in the art. As milk yields a larger proportion of ghee than of butter, and neither time nor distance will injure this unfragrant produce, it is probable that Australian farmers may be glad to avail themselves of this never-failing market." Whether Miss Gordon Cumming is correct about the price—which some Indian friends with whom I have spoken seem to doubt—it is certain that the rest of the information is substantially correct. Ghee, it may be explained, is made by boiling, curdling, and churning milk till it becomes rancid, when it is packed in jars. The process could easily be taught, as suggested in Miss Cumming's book, by Hindoos brought over for the purpose. That the market is most extensive is shown by the quantity used in British India alone, and that it must be a rapidly-increasing quantity can also be shown by the fact that, under the benign influence of British rule, the population of Bengal has trebled in the last century, and that if the Indian population goes on increasing at its present rate there will be twenty-five million more hungry mouths to be fed ten years hence than there are at the present moment.

The manufacture of ghee would seem to have these advantages over making butter for export by our farmers: First, the produce per gallon of milk is larger; second, the risk of damage by keep, travel, and change of temperature can hardly be said to exist; third, the return to the exporter would, on the average—if the price quoted is near the mark—be better than is obtained from butter sent to London, always taking into account the advantages already mentioned.

I think a sufficient case is here made out for further inquiry. The Government, the Pastoral and Agricultural Society, and merchants with correspondents in India, might well inquire into the facts of the case, and see if Miss Gordon Cumming's statements are borne out by facts so far as to submit to the crucial test of pounds, shillings, and pence. If so, we may hope before long to see a new and payable industry grow up and flourish through the colony.

I have, &c.,

The Hon. Sir Julius Vogel, K.C.M.G. W. REEVES.

No. 7.

SALT-WORKS.

Mr. EDWARD H. GIBBON to the Hon. Sir JULIUS VOGEL, K.C.M.G.

SIR,— Pompallier Terrace, Ponsonby, Auckland, 11th February, 1885.

In the event of a salt factory being established in Auckland, would the Government be likely to give a bonus for the first two or three hundred tons, and would they impose a protective tax of, say, one farthing per pound on the imported article?

The conditions for the establishment of such a factory in the vicinity of Auckland are all that could be desired, and I am certain it would be worked to very great advantage at a very small cost, and with a very little encouragement at the start.

I should be glad of a reply at as early a date as possible, so that I may give all the possible information to those interested. I have, &c.,

The Hon. Sir Julius Vogel, K.C.M.G. EDWARD H. GIBBON.

No. 8.

EXPLOSIVES.

Mr. ED. KERSEY COOPER to the Hon. Sir JULIUS VOGEL.

SIR,— Willow Bank, Grafton Road, Auckland, 20th February, 1885.

The desirability of having established in New Zealand manufactories of explosives must be apparent to all, and I would suggest that the Government offers a bonus of, say, £1,000 for the first ten tons of gun-cotton manufactured in New Zealand, either in compressed or granulated form, suitable for mining or engineering work; also, a bonus of £1,000 for the first ten tons of gun-cotton slabs or discs manufactured in New Zealand suitable for naval torpedoes, filling and meeting the conditions recognized and demanded by the Royal Government Arsenal at Woolwich, England. This form of disc or slab would necessitate a series of dies for the hydraulic presses that would be very costly, and could be only used for this work. It would be necessary to give the form of torpedo New Zealand intends to adopt, whether Whitehead's or another kind, so the dimensions of the slabs, &c., would be such as to present the least air space practicable. Also, a bonus of £1,000 for the first ten tons of any nitro-glycerine compound manufactured in New Zealand that shall contain not less than 65 per cent. of good commercial nitro-glycerine, free from any free acids, and whose absorbent is capable of tenaciously holding not less than 65 per cent. of nitro-glycerine. Also, a bonus of £200 for the first 50,000 detonators manufactured in New Zealand, containing not less than 15gr. of fulminate of mercury, suitable to detonate gun-cotton and dynamite mining charges. Also, a bonus of £200 for the first fifty casks of double-tape fuse manufactured in New Zealand suitable for mining where either gun-cotton, dynamite, or black powder is used.

Three years at least should be given to erect and get under way the explosive manufactories, as acid works would have to be erected in connection with them, and the greater part of the machinery would have to be expressly made in England. The gun-cotton plant would alone cost over £20,000, independently of the ground and the employé-houses.

I have, &c.,

The Hon. Sir Sulius Vogel, K.C.M.G. ED. KERSEY COOPER.

TOBACCO.

No. 9.

Mr. AUGUST VOLLBRACHT to Sir JULIUS VOGEL, K.C.M.G., Colonial Treasurer, &c.

SIR,— Auckland, 24th February, 1885.

I have now the pleasure of enclosing to you the instructions on the growth and cultivation of tobacco which I unfortunately forgot to leave with you at our interview this morning.

I have, &c.,

The Hon. Sir Julius Vogel, K.C.M.G., AUGUST VOLLBRACHT.

Enclosure.

THE soil best suited for growing tobacco is a deep, sandy loam, volcanic soil, or cleared bush land, made as rich as possible with stockyard manure—the richer the better. The season for sowing commences about the 20th of August, and can be continued until the middle of October. This is for Auckland District. For southern districts it will extend a month later. A great point to be observed is that the soil must be clean and free. Any soil that will hold water about the roots of the plant will not do, as in such places it gets a disease called "foxtail." A stiff clay soil should be avoided, not only on account of the difficulty in working it, but it is liable to bake and become hard, thereby checking the growth of the plant. The land should be sheltered as much as possible; but if not sheltered sufficiently, sow a few roots of maize amongst the tobacco, and also a row on the windy side. The average return of dry leaf per acre is between 1,500lb. and 1,800lb. weight. Havana gives from 1,000lb. to 1,400lb., although much heavier crops are sometimes got from rich ground.

The seed-beds should be made on a piece of land well sheltered by boards or buildings, as a good crop greatly depends on an abundant stock of plants. Thoroughly burn the soil with straw, tea-tree, or wood, and mix the ashes well up with the soil to the depth of 5in. or 6in., making the surface as fine as possible. This should be done after it is dug up. Ashes are an excellent manure, and cannot be applied too heavily to either field or seed-bed. Mix the seed with plaster, sand, or ashes, so as to sow it regularly. One or two thimblefuls of good seed will raise sufficient plants for an acre. It is always best to have extra beds sown a little late, and in a different position, to guard against unforeseen accidents. After sowing, which is done by sprinkling it carefully over the bed, it should be tramped down with a piece of board, or rolled with a light roller, to make it solid. Do not rake the seed. It will take four to five weeks to come up. The plants are ready to transplant when they are 4in. high or have four large leaves. The transplanting is done in the same manner as cabbages. Keep the bed clear of weeds. The size of a bed for one acre should be about five yards long by one wide. Thin plants out, if necessary, in the seed-beds.

The land should be ploughed, taking care to turn the turf, if any, completely under, sub-soiling to be preferred, and harrowed down as fine as a garden-bed, if possible. After this, the land should be marked out in rows, either by the mould-board of a plough or a corn-marker, two feet and a half each way for Havana, three to four feet for the larger varieties, according to the richness of the land.

Another way that is pursued, when the season is late, is to sow in drills the above distance apart in the field. This saves trouble and time, but does not give such a good quality of tobacco. Respecting this method, it should be said that no payable crop need be expected unless the soil is

in good heart. In sowing, the seed should be mixed with a little sand or ashes, and the very smallest pinch deposited at the required distances and pressed gently down. When they come up, the smallest and weakest plants should be thinned out, leaving one plant at each hill. They will require frequent looking over, seeking for grubs, setting any upright that have blown over, and stirring the soil at first. Keep down weeds with a horse-hoe, plough, or hand-hoe.

On the first rain the plants should be removed from the seed-beds; if no rain comes, plant on a cloudy day or at evening. Do not, however, wait for rain, but if the plants appear to die in the sun after transplanting, shade with tea-tree bushes stuck in the ground. Transplanting is done in the same way as cabbages, care being taken not to expose the roots to the sun. A boy should go on ahead preceding the planter, with baskets filled with plants, and drop one on each hill; another boy follows with a dibbling-stick, making the holes in the centre of each hill for the reception of the plant. In setting out take hold of the plants carefully by the leaves, gathering them together, and then insert the plants sufficiently deep, so that the surrounding soil may act as a support to keep them in that position. This is also done to protect the tender bud from the effects of the sun. Do not go to the extreme and plant too deep, but just a little deeper than the plant stood in the bed. The plants should be carefully planted, for if the roots are bent up the plant may never flourish, and, perhaps, when too late to transplant, they will die, thus causing a waste of labour, which, in this country, means money. In three or four days, if the weather is dry, take a common scarifier and run it through the rows both ways. This is a delicate operation, and requires a skilful ploughman; therefore it is better to have a boy to lead the horse, for without care the plants will be cut down with the working. The following week put horse-hoe teeth on the scarifier, and run through the furrows, moulding up immediately afterwards. This should be done every week until the plants are too large to go between without injuring them. The after-culture should then be done with the hand-hoe, leaving the ground as level as possible. When the plant is about hip-high the bud forms a button, which ultimately develops into the seed-stem. Then comes a process known as topping. This is done to throw the strength, which would go to develop seeds, into leaves. This work requires great experience as to the time to top, and also as to the quality of tobacco best worth growing, taking into account the requirements of the market at the time. If a thick heavy leaf is desired, the button should be pinched off at twelve leaves; if a lighter article is desired, the plant is permitted to run up until it begins to throw out seed-branches, when it is broken off, leaving from fifteen to twenty leaves to ripen. There is another important item with regard to topping—namely, as to whether the plants are late or early. If there are but few leaves on the plants, even these will not ripen if they are not topped. However, no person can be far wrong if they top to about twelve leaves—that is, if they have strong healthy plants; if there are many, then the grower has the choice either to break off the seed-branches only or to take eight or ten leaves off. This should be done in answer to the following questions: Firstly, Is there time enough for the upper leaves to ripen? and, secondly, Are the plant and soil strong enough to ripen all the leaves, even the upper ones? The answers to these questions will decide the best method of topping. If there is time he takes off flower-stalk only; if not, he tops to nine, ten, &c., leaves, according to his judgment in weight of leaf required by the buyer. The planters in the States are usually in communication with the manufacturer or tobacco-broker before they put their crops in; however, no person can be far wrong if he tops to about twelve or fourteen leaves—that is, if he has strong, healthy plants.

Suckering follows shortly after topping, and is done for the same reason—to concentrate the strength of the plants in the leaves. A sucker is a little branch or shoot appearing at the place where the stem of the tobacco-leaf joins the stalk. They draw off nutriment, while they are never large enough to be of any use, and therefore must be removed. This is one of the most troublesome jobs in tobacco-culture; but they must be taken off if a planter wishes to get weight and quality.

Priming is also done to remove the ragged and worthless leaves which are next to the ground. These leaves are sometimes preserved and sent to the market as sheepwash. Priming, if necessary, should always be done prior to topping. Never prime, top, or sucker when the dew is on a plant, or during a rain, as it makes the leaves form spots, which, becoming larger in time, destroy the leaf for wrappers if intended for that purpose.

To be prepared to save the crop in good order ample house-room is essential. To hang three acres of tobacco acquires, in this climate (to prevent pole-burn), a building 30ft. x 24ft. x 12ft. This should be arranged with scantling or tea-tree poles running across the shed, four feet apart, and parallel with one another; then two more tiers of poles, at similar distances apart, one above the other. These are to accommodate the sticks used to hang the tobacco on. The sticks should be cut from half-inch tea-tree, and in length should be 4ft. 6in.; this leaves a margin of three inches on each side to rest on the poles.

It requires some experience to tell when the tobacco is ripe, and the best way for a novice is to get a man who knows when it is ready to show him. However, I give some ordinary rules, which nevertheless must not be exclusively depended upon. First, a mottled leaf is always ripe, but all leaves do not mottle, but assume instead a thin, transparent look; secondly, a brittle leaf denotes ripeness. The brittleness may be ascertained by taking the leaf between the fingers and doubling it up: all leaves are not brittle, especially if it is a very fine, delicate leaf. However, the whole appearance of the leaf is generally altered, so that with a little attention and observation one can soon tell whether it is ripe or not. The plant is then cut off close to the ground with a tomahawk, taking care not to break the leaves in doing so. After cutting, stand the plant upside down, and let it wilt for a short time, when it may be handled without breaking the leaves. It may now be taken to the shed; but no more should be cut in one morning than can be carted and hung the same day, nor should the sun wilt it too much. Do not cut the tobacco if it is wet from either rain or dew. A spear-head having been made to fit the end of the sticks, the person hanging the tobacco should take a plant in his left hand, and, holding the other end of the stick against something solid, draw the plant on to the stick by putting the spear-head through the main stem close to the butt,

Continue this until the stick is holding about six plants, or more if they are small; 6in. to 9in. is the distance the plants are to be apart on the sticks, and 8in. between each stick on the poles. Now take the spear-head off, and commence on another one, until all the tobacco is hung. As the plants shrink the tobacco on two or more sticks is crowded on one, and that is lifted to a higher tier until the upper tiers are pretty full, but care must be taken not to crowd the tobacco too much. Mild, clear weather is the best for drying: strong, high winds dry too rapidly, besides knocking it about; and wet weather will hinder it altogether, turning the colour black, which is not desirable. Should a damp spell come on, the shed should be shut up and charcoal fires should be started, and the heat allowed to go through the plants as evenly as possible. The heat should be kept up to 90°. Hot-water pipes are of course the best, but the high price of such things in this country deters one from putting them up. When the large stem of the leaf becomes brown, and snaps when bent, it is thoroughly cured, and advantage should then be taken of a damp spell, when it is in proper case for handling without breaking, to strip the tobacco from the stalks and sort it, making it up at the same time into "hands."

Description of a Tobacco-drying Shed intended to hold Eight Acres of Tobacco.—Length, 65ft.; breadth, 20ft.; height of studs, 18ft. Materials: Sides, 13in. weather-boarding; gabled roof, galvanized iron; double-doors at each end of the building. For ventilating purposes, every fourth weatherboard is made to open on hinges, which can be closed down tightly when necessary. The floor is best made of fine scoria or gravel, well trodden down, and raised slightly above the level of the ground outside.

Hints to be observed.—Dust the plants frequently with lime (not caustic lime); use lime also for manure. The dusting keeps caterpillars off. Keep all caterpillars off by hand-picking. Do not grow any varieties for seed close to one another. Do not attempt to sweat the tobacco, except under the direction of a skilled person.

Insect Remedy.—Take one part of muriate of potash, and dilute it with 1,000 parts of water. Applied with sprinkler or syringe. It is death to any bugs, worms, or caterpillars. The mixture is a harmless saline, non-poisonous. It is also a good plant-food, very cheap, and can be mixed by any chemist. The large proportion of water is necessary because it rapidly evaporates when applied, and so makes the solution stronger.

Handle your tobacco carefully. Be particular in cutting your tabacco not to allow it to get sunburned; and do not leave it piled up in heaps overnight, for it will get bruised more or less, and on a warm night it will heat in a few hours, and decomposition will set in to such an extent as to render it almost worthless. All after-curing should be done at the factory. Above all, do not forget to use plenty of lime before topping. Be careful not to cut your tobacco until it is ripe: better always wait a day or two to make sure, as otherwise it will never cure up well. A tobacco-shed need not be built by those who have a barn or large shed, or even a watertight raupo or nikau whare. The fires not to be started by those who are growing small quantities: it is sufficient to shut the shed up. The tobacco will be packed under instructions that will be supplied by the manufacturers. These instructions must be carefully attended to, but may be modified to suit circumstances. There is no duty or fee to be paid by growers; these are paid by the manufacturers.

No. 9.

IRON.

The New Zealand Iron and Steel Company to the Hon. Sir Julius Vogel.

Sir,— Auckland, 20th February, 1885.

Enclosed are some papers that might interest you, as they throw some light upon the aims and history of the New Zealand Iron and Steel Company. I have, &c.,

Hon. Sir Julius Vogel, K.C.M.G. John Chambers.

Enclosure No. 1.

Sir,— Queen Street, Auckland, 25th May, 1883.

Having been requested by friends who were unable to go fully into the process of making iron at Onehunga, to give a plain statement, showing the advantages claimed in the Wilson patent direct process, I now put down the principal items, and take the opportunity of saying that I think the public have no idea of the importance of this industry: it is making far more impression abroad than here.

The advantages claimed are—

1. Less coal is used than in any other process, 30cwt. of coal-slack being all that is required to make one ton of finished iron, 10cwt. of same being used in the deoxidizing process. Our local brown-coal slack will answer every purpose about the works, as Wilson's patent gas-producers will be used.

2. By our process wrought iron is made direct from the sand, using no foreign substance whatever, ironsand and coal being the only materials that will enter the works. Place the above as against the usual mode, requiring 56cwt. coal, 11½cwt. limestone, 45cwt. iron ore, to make 22½cwt. pig-iron. Add labour and interest in expensive plant, and then the product is not equal to 40cwt. ironsand in its raw state, requiring as much coal and more labour to make one ton of bar-iron from pig than we require altogether.

3. No fettling is required, the oxide making more than is necessary.

4. The very small cost of ore, or sand. The expense of collecting and delivery to the works, taking the average deposit as equal to 50 per cent. of pure iron, will be at first 3s. per ton, which equals 12s. for two tons of pure ironsand; and, if cleaned and separated at Manukau Heads instead of Onehunga, about 7s. only.

5. Being sand, it can be moved by machinery as easily as grain, no unusual labour being required from the time it enters the barge until it comes under the hands of the puddler in the furnace.

6. There is less labour to the puddler in making iron from sand than from pig.

7. The quality of the iron produced is equal to Swedish.

8. It is the only process by which wrought iron can be made from the ore direct for commercial purposes.

9. The process of bringing the iron to nature is so simple that it is almost certain that mechanical puddlers can be used—for instance, "Danks."

10. Auckland is the best centre for distributing our manufactures, it being less costly to deliver iron to the larger New Zealand ports, and to Melbourne, Sydney, and Hobart, than to bring the same from South Staffordshire to London.

11. English ironmasters have been inquiring into this; and one of the largest Middlesborough steel-manufacturers, Mr. S. Gilchrist Thomas, after seeing the works at Onehunga, has opened negotiations for the purchase of all our products in the shape of blooms or billets; but this will largely depend upon the class of freight offering for London. At present very low freight can be obtained by shipping same as ballast.

Steel will eventually be made; but it is not proposed to enter upon that at once.

Any further information I shall be most happy to give. I have, &c.,

Hon. Sir Julius Vogel, K.C.M.G. JOHN CHAMBERS.

Enclosure No. 2.

Mr. JOHN CHAMBERS to the Hon. Sir JULIUS VOGEL, K.C.M.G.

SIR,— Auckland, 18th February, 1885.

Yesterday you asked some questions *re* the New Zealand Iron and Steel Company (Limited,) that I should have answered more fully had time allowed. You expressed surprise at the selection of the site. The main reason for it was: the railway is our eastern boundary, while the harbour is the western. The railway connects us with the Auckland wharves, and will bring us our coal; while the Manakau Harbour will enable us to land all ironsand, &c., in the middle of the works with the least expense, as we have not to go out of the harbour for anything required in the works, the material being put into barges in smooth water; the supply at the Heads being almost inexhaustible. Another reason was to have a better supply of labour than could be obtained on the West Coast. We should never have started works if we had not seen our way to make wrought iron direct from the ore or sand. The saving of both labour and material quite equals the higher price of both in the colony. Our process is an extremely simple one as far as making the sand into iron; after that the manipulation is the same as in the Old Country. At the same time we have imported the very best and latest machinery. We shall use Wilson's gas producers. Without these we should not have been able to use our light brown coals, while with these we can use almost anything. We shall not only use sand to make our best iron, but shall work up all the old iron we can get. This alone is a great saving to the country. At the first we shall confine ourselves to iron, feeling sure that as soon as the works are going well the company will go into steel, as that can be made at Onehunga as easily as iron. There are many other industries that must spring out of this if the tariff is raised: for instance, there is a man prepared to start making nails as soon as we can supply him with wire. He was a nailmaker at Manchester. One of the principal arguments against us is that there is no protection on iron and little or none on most of the heavy lines. I was much pleased to find that you fully appreciated the importance of successfully establishing such an industry in New Zealand. I shall be always most happy to give the Government or yourself any information that lies in my power. I have, &c.,

Hon. Sir Julius Vogel, K.C.M.G., Colonial Treasurer. JOHN CHAMBERS.

Enclosure No. 3.

PROSPECTUS.

THE NEW ZEALAND IRON COMPANY (LIMITED) is organized to manufacture bar and pig iron and wire from the ironsand deposits of the West Coast, by means of the patents owned by Messrs. John Chambers and G. H. Gardner. The practicability of these patents having been fully proved by the works at present in operation at Onehunga, there remain but two points to be considered—viz., the cost of manufacturing and the market for the product.

The Cost.—In estimating the comparative cost of manufacturing iron here and in England there are three items to be considered—viz., labour, coal, and raw material. The raw material is almost a nominal cost to us. The coal will cost no more here than in England, for it is intended to use only gas for all heating purposes in the works, which can be produced by means of gas-generators from slack or any brown coal at a far lower cost than the same amount of heat can be obtained from burning coal. Labour is, then, the only item which will cost more here than in England, and we have to consider what advantages we possess to counterbalance this greater cost. These advantages consist (1) in situation, by which we save 10 per cent. on the Home cost, which is absorbed in commission, insurance, exchange and interest, and outward freight, as the freight from Auckland or Onehunga to different places within the colony will be no more than the charges in England in bringing the iron from the mills by rail and cartage and shipping charges in London; (2) in our process, by which we save cost of fettling (or wrought-iron scrap), which, in puddling from pig, has to be put into the furnace, and the cost of making the pig and the waste of the same in puddling. This

is a most important item in our favour, and would be alone sufficient to counterbalance the greater cost of labour, for by the patents under which this company will work the same result is obtained from ironsand as is obtained from pig-iron, thus saving the expense of making the pig; the difference in cost between pig-iron in England suitable for making good bar-iron, and ironsand at Onehunga being fully £1 15s. per ton in our favour. If, then, we take the amount of saving which we have by our process and situation to counterbalance the greater cost of wages in this colony, we have—

	£	s.	d.
10 per cent. on the Home cost, say £7	0	14	0
Saving in freight	1	0	0
,, of fettling	0	3	0
,, ,, cost of making the pig	1	15	0
,, ,, manufacturers' profits	0	7	0
	£4	4	0

The total cost of labour in manufacturing pig-iron into finished bars in England is under £1 15s. per ton, so that if the cost of labour here is even as high as £3, there remains a large margin for profit. It is estimated that the total cost of the best finished bar-iron at Onehunga will be under £6 per ton.

The Market.—The production of cheap iron opens so large a field of industry that it is impossible to estimate the future of this trade. It is an undoubted fact that bar-iron can be made from ironsand more cheaply than from any other ore. The supply of raw material is unlimited, and New Zealand should become one of the largest iron-producing countries in the world. The many branches of manufacture of which cheap iron is the prime essential will no doubt spring into life now that both cheap iron and coal may be obtained in New Zealand, and with the supply so will the demand increase. The amount of iron imported into Australasia in 1882 was as follows:—

	Australia. Tons.	New Zealand. Tons.
Bar-iron	44,500	9,250
Fencing-wire	40,000	9,500
Galvanized iron	37,080	8,000
Pig-iron	24,500	4,000
Plate-iron	9,250	1,000
Wire nails	6,750	2,750
Hoop-iron	3,750	850
Sheet-iron	3,500	600

These figures do not include Tasmania or West Australia.

The present cost of South Staffordshire iron, which is universally used in these colonies, is £7 10s., f.o.b. London, costing delivery in New Zealand about £9 5s., which is one of the lowest prices for many years, owing to the depression of the iron industries in England. Auckland iron at £8, f.o.b., would thus keep out the imported iron, and leave a large profit to the manufacturers.

It is also proposed to manufacture the iron into a few articles which are largely used, such as fencing-standards, fishplates, railway spikes, &c., &c., on which a larger profit can be made. Fencing-standards cost in the South Island about £11 per ton, and are used to the extent of over 3,000 tons per annum; and in other lines large quantities can be sold at better profits than can be made on bar-iron. Fencing-wire, being protected by a duty of £1 per ton and by a large cost of importing, offers a profitable field of industry; and it is proposed to add this line to the products of the company as soon as the above operations are at work. The slag from the puddling furnaces, if it contains a sufficiently high percentage of iron, will be smelted in an ordinary blast-furnace and run into pig-iron, thus utilizing all the waste products. Sydney and Melbourne will take a large quantity of iron from us, as low freights are easily obtained to those colonies.

It is expected that New Zealand iron can be sent to England and the United States at very profitable prices, as the iron made from sand in the United States by this process is found to be of so superior a quality for making high-priced steel that the whole of it is consumed by that branch of industry, and the price paid would yield us a large profit. India, China, Japan, and San Francisco open fields for exportation which we may shortly hope to compete for, as our location is most favourable for them as a base of supplies, and at certain seasons of the year freight can be had at a merely nominal rate; and a speedy enlargement of the works, as the requirements of the trade may demand, is provided for in the 20,000 unallotted shares. These shares, when allotted, will be offered to the stockholders at par in proportion to the shares held.

This company will take over the concessions obtained by Messrs. Chambers aad Gardner, consisting of 1,000 acres of land, and four miles of foreshore on the North Head and two miles of foreshore on the South Head of Manukau Harbour, and three miles of foreshore at Taranaki, which will supply all the ironsand necessary for many years to come. No other place on the West Coast offers such facilities for cheap coal and ready transportation of the finished product as Onehunga; as, from its location, we can ship from either the East or West Coasts, and from the North Head the sand can be put into barges at any state of the tide or weather without going outside the Heads, and brought to our own wharf. These considerations make these concessions particularly valuable, while the lease at Taranaki will be available for the manufacture of charcoal iron, as a good quality of charcoal can be obtained in that district at a reasonable price.

The New Zealand Government has offered a bonus of £1,000 for the first 200 tons of wrought-iron blooms, and an additional £1,000 for the first 200 tons of pig-iron, manufactured from ironsand, which this company will secure.

The patents owned by Messrs. Chambers and Gardner are so essential to the manufacture of iron by the direct process that it is impossible to manufacture iron from ironsand in payable quantities without them, thus securing to the company a virtual monopoly.

In view of the many advantages we possess—a large and constantly-growing market at our doors, and separated by so many miles from its present base of supplies, a practically unlimited supply of ironsand, suitable coal at a low price close at hand, and the cheapness of our process of working—we have no hesitation in offering the shares of this company as one of the safest and most profitable investments which have ever been before the public.

No. 10.

SUGAR-BEET.

MR. A. THIELE, Confectioner, Allen Street, Christchurch, to the Hon. Sir JULIUS VOGEL, K.C.M.G.

SIR,—

I beg to hand you a paper on the growing of sugar-beet, and the manufacture of sugar therefrom. I only give a brief outline, and could explain it better personally.

The growing of sugar-beet has now been carried on profitably and successfully for the last thirty-two years in France, Germany, and also of late in England. There are several sorts of sugar-beet, but the Silesian, French, and North German are considered to be the most profitable for agriculturists, and best-yielding in crops and percentage of sugar. The French differs slightly in size, the latter growing larger. By observations of my own, I can say there is not a better country than New Zealand, both in climate and in the land, suited for that purpose, and farmers must acknowledge that root crops are no more likely to be damaged by the sudden changes of weather which prevail in New Zealand than grain crops.

I had some seed sent a few years ago from my brother, who is a large shareholder in one of the factories. He sent me some North German seed, which I had grown on some land at Avonside. It produced 35 tons per acre, and, I have no doubt, on heavier land, would yield 40 tons per acre. The next spring I planted about a dozen roots for seed, and got about a bushel of seed from it, which I gave to Mr. Chudley, Duncan, and Mr. W. Baker, Colombo Road, who grew it for feeding cattle. I made a trial at the last Ashburton Exhibition of some inferior sugar-beet grown by Mr. Mayo, of Ashburton, from which I abstracted the syrup, and boiled it to sugar-pressure, and found it to yield 16 per cent., and have no doubt best sugar-beet would yield 18 per cent. In Germany 12 per cent. is considered to pay well.

The question is the cost of labour, which is higher here than in England and Germany, but can be considerably reduced, as a great many boys and girls are employed, which would bring the the adult labour to about 5s. per day, the factory guaranteeing work all the year round.

Growing.—The land requires deep ploughing and harrowing in spring. The seed is planted generally two to three seeds about 12in. apart. As soon as the seed has come up it is required to be cleaned, as the weeds grow quicker than the beet. It is cleaned by boys with a hoe. About a month after comes the pulling and planting. The strongest plants should be left and the tender ones pulled away. Should, in some places, the seeds not come up, they must be replanted. One month after the seed will require to be cleaned again from weeds. Should farmers be short of food for their cattle the outer leaves may be stripped, which will give the plant clear growth and sun. When ripe, the beet must be lifted and the tops can be cut off for food for the cattle, and the roots carted to the factory and there pitted. In Germany, at present, all this ploughing and carting is done by bullocks, which are afterwards fatted from the pulp or press, which is like an oilcake, and sold in the English markets.

Working of the Factory.—The beet is first washed and cleaned, then grated and pressed; the liquor then, being strained and cleared, is put into boilers and boiled to treacle, from which the sugar is abstracted. For the clarifying of the sugar strontia is required. At the present time North Germany has no less than ten factories within fifty square miles: there is one in Anhalt-Cöthen, Dessau, Halle, Calbe, Bernburg, Eisleben, Lobegin, Salze, Shönebeck, and Assersleben. These factories employ no less than 3,000 persons yearly.

Starting of the Factory.—At Anhalt-Cöthen the factory started by shares, by a company with capital and growing shareholders. For each £10-share the farmer would have to grow five acres of beet, which at once secured to the factory the growth of the sugar-beet. The farmers get paid according to the quality of the beet, less the interest to equalize with the capital shareholders. The cost of a factory would be from about £18,000. By starting a sugar-factory in Canterbury other local industries would spring up, as, for instance, the burning of bones for charcoal, the manufacture of moulds for loaf-sugar, the importation of guano for manure, &c. At present we import yearly 200 tons of sugar from Mauritius, about 500 tons from Sydney, and about 500 tons Dutch or beet-sugar, which all could be manufactured here, and at the same time we could export from here to other places.

I have, &c.,

The Hon. Sir Julius Vogel, K.C.M.G. A. THIELE.

No. 11.

SALE OF FROZEN MEAT AND WOOLLEN FABRICS IN INDIA

(CORRESPONDENCE RELATING THERETO).

(No. 4178 of 1884.)

The UNDER-SECRETARY, Bombay, to Sir JULIUS VOGEL, K.C.M.G.

SIR,— General Government, Bombay Castle, 14th November, 1884.

With reference to your telegram, dated the 25th September last, to the address of Sir James Fergusson, inquiring whether there is any prospect of New Zealand frozen mutton and fine woollen fabrics manufactured in New Zealand finding a market in India, I am directed to forward

herewith copies of the papers noted in the margin,* together with copy of a minute by His Excellency the Governor, dated the 8th instant, furnishing information on the subject. The reply of the Commissary-General will be communicated to you when received.

I have, &c.,
W. N. SYMONDS,
Acting Under-Secretary to Government.

Sir Julius Vogel, K.C.M,G.

*Resolution of Government of Bombay, No. 3597, dated 2nd October, 1884.
Letter from the Secretary to the Chamber of Commerce, Bombay, dated 8th October, 1884.
Letter from the Secretary, Trades Association, Bombay, dated 24th October, 1884.
Letter from Municipal Commissioner for the City of Bombay, No. 7589, dated 23rd October, 1884, and enclosure, together with a copy of his letter, No. 13151, dated 27th February, 1883, and enclosure therein referred to.
Letter from the City Magistrate, Poona, No. 900, dated 6th October, 1884.
Letter from the Cantonment Magistrate, Poona, No. 1006, dated 16th October, 1884, and enclosure.
Memorandum from the Commissary-General, No. 33/6819, dated 23rd October, 1884.
Letter from the Secretary, Great Indian Peninsula Railway Company, to the Consulting Engineer for Railways, No. 180R/11877, dated 11th November, 1884.

Enclosure No. 1.

New Zealand Frozen Meat and Woollen Fabrics, Inquiry by the Government of New Zealand whether there is any Prospect of finding a Market in India.

(No. 3597.) General Department, Bombay Castle, 2nd October, 1884.

TELEGRAM from Sir Julius Vogel, K.C.M.G., Colonial Treasurer of New Zealand, dated Wellington, 25th September, 1884:—

"Is there any prospect of New Zealand frozen mutton and fine woollen fabrics manufactured New Zealand finding market in India? Your reply to New Zealand will greatly oblige."

RESOLUTION.—Copies of the telegram should be forwarded to the Municipal Commissioner for the City of Bombay, the Commissary-General, the Secretary, Bombay Chamber of Commerce, and the Secretary, Bombay Trades Association, for favour of early opinion.

2. The Municipal Commissioner should also be requested to report the amount of beef and mutton, best and otherwise, that is daily brought into the Island of Bombay, and the average prices of such meat. The City and Cantonment Magistrates of Poona should be requested to furnish similar information as regards the City and Cantonment of Poona.

3. The Agent, G.I.P. Railway, should be requested to report the approximate rates which would be charged by the railway company per truck for the carriage of frozen meat from Bombay to Poona.

4. It should be understood that the meat in question is of the best quality, and that it can be delivered in excellent condition at about 4d. a pound wholesale.

W. P. SYMONDS,
Acting Under-Secretary to Government.

To
The Commissary-General,
The Military Department of the Secretariat,
The Municipal Commissioner for the City of Bombay,
The City Magistrate, Poona,
The Cantonment Magistrate, Poona,
The Agent, G.I.P. Railway,
The Public Works Department of the Secretariat (Railway),
The Secretary, Bombay Chamber of Commerce, } By letter.
The Secretary, Bombay Trades Association. }

Enclosure No. 2.

The SECRETARY, CHAMBER of COMMERCE, Bombay, to the ACTING UNDER-SECRETARY, Bombay,

SIR,— The Chamber of Commerce, Bombay, 8th October, 1884.

I have the honour to acknowledge the receipt of your letter, No. 3597, of the 2nd instant, communicating a telegram received from Sir Julius Vogel, K.C.M.G., dated Wellington, 25th ultimo, and requesting that Government may be favoured with the information therein asked for.

In reply, I am directed to state that if the frozen mutton can be laid down in India at prices that will compare favourably with those ruling here for fresh mutton, and if the woollen fabrics (provided they are of suitable descriptions) can be laid down at prices to compete with importations from Yorkshire and Germany, the Committee of the Chamber have no doubt that a market will be found for both. Everything depends on prices. The Committee would recommend trial shipments.

I have, &c.,
J. GORDON,
Secretary.

The Acting Under Secretary to Government,
General Department, Bombay.

Enclosure No. 3.

The SECRETARY, BOMBAY TRADES ASSOCIATION, to the UNDER-SECRETARY, Bombay.

SIR,— Trades Rooms, Bombay, 24th October, 1884.

With reference to your letters 3597 and 3834, of the 2nd and 20th instant respectively, I am directed by the Committee of the Bombay Trades Association to state that they do not think

there would be sufficient demand for colonial frozen meat in India to render the importation remunerative, for the following reasons :—

1. The highest price that the very best kind of meat fetches in Bombay is 4 annas—or, say, 3¼d. per lb.—and as large cargoes, consisting of 5,000 or 6,000 carcases of Australian and New Zealand frozen meat are sold in London wholesale at 5½d. or 5¾d. per lb., and retailed at from 7d. to 9d., it is not likely that the meat could be imported to Bombay at a much lower rate, or retailed under, say, 7 annas a lb.

2. The consumption would be very limited, as natives will not touch meat slaughtered or handled by Europeans, and of Europeans and native Christians only a very few would pay more than double the price of Indian meat. The superiority of the New Zealand meat to any Indian meat but the very best grain-fed mutton is, of course, admitted.

3. The consumption, small as it must be, would be limited to the presidency towns, as fresh meat is much cheaper in the Mofussil than in Bombay; and, where mutton-clubs exist, it is so good that no one would take colonial meat in preference, even if they could get it.

In regard to the woollen fabrics, the Association would beg leave to refer Government to the Chamber of Commerce, as the New Zealand manufactures are apparently unknown to the tradesmen who have been consulted on the subject.

I have, &c.,

The Acting Under-Secretary to Government, General Department, Bombay.

W. J. Farrow, Secretary, Bombay Trades Association.

Enclosure No. 4.

(No. 7589 of 1884–85.)

The Municipal Commissioner for the City of Bombay to the Secretary, Bombay.

Sir,— Municipal Commissioner's Office, Bombay, 23rd October, 1884.

With reference to Government Resolution No. 3597, dated 2nd instant, I have the honour to submit herewith a statement showing the average daily consumption of both beef and mutton, together with the average ruling prices. I have also the honour to state that on receipt of a previous Resolution, No. 318, dated 29th February, 1883, on the same subject, I then had the pleasure of submitting to Government the information called for under this office, No. 13151, dated 27th February, 1883, with statement annexed, and which tabulated the weekly consumption of meat in the City of Bombay, as well as the ruling market prices of the same.

2. For the reasons given in my previous communication on this subject, it will be seen that, so far as the Island of Bombay itself is concerned, the Frozen Meat Association could not hope to meet with any success in the proposed undertaking; but at the same time I see no reason why the association should not meet with encouragement were its efforts more directed towards supplying the shipping with frozen meat.

3. The consumption of beef in the shipping is considerable (October–May), particularly during the fair season when we have in harbour naval and Indian marine boats, troop-ships, and besides a large number of mercantile vessels; and, if the quality of the meat is what it is assured to be, there would, I think, be no difficulty in its finding a ready market in the shipping.

I have, &c.,

The Secretary to Government, General Department.

Douglas Bennett, For Municipal Commissioner.

Sub-Enclosure in Enclosure No. 4.

Memorandum showing the Daily Average Consumption of Beef and Mutton in the City of Bombay, and the Average Ruling Market Prices of the same.

Per Day.	Number of Carcases.	Total Average Weight.	Average Ruling Prices per lb.				Or in English Money, Average per lb.	
			First Sort.		Second Sort.			
			From	To	From	To	First Sort.	Second Sort.
		lb.	R. a. p.	R. a. p.	R. a. p.	R. a. p.	£ s. d.	£ s. d.
Beef for Europeans, Eurasians, and Native Christians	55	13,928	0 3 0	0 3 6	0 1 6	0 1 9	0 0 3¾	0 0 1⅞
Mutton for Europeans	346	12,135	0 3 0	0 4 0	0 1 6	0 2 0	0 0 4	0 0 2
„ Natives	926	27,685	0 2 6	0 3 6	0 1 3	0 1 9	0 0 3½	0 0 1¾

P. C. Higgins, Superintendent of Markets and Slaughterhouses.

Enclosure No. 5.

(No. 13151 of 1882–83.)

The Municipal Commissioner for the City of Bombay to the Secretary, Bombay.

Sir,— Municipal Commissioner's Office, Bombay, 27th February, 1883.

Referring to Government Resolution, in the General Department, No. 318, dated 29th ultimo, I have the honour to report that the weekly consumption of beef and mutton is as shown in the accompanying tabulated statement; the average ruling price is also given in the statement; and regarding the question of importing frozen meat the Superintendent of Markets reports as follows:—

"I don't think it would pay to import frozen meat from the colonies for the Bombay markets for the following reasons:—

"(1.) The distance being so great and the European consumption is small, and the prices of fresh meat comparatively low, and in other parts of India it is much cheaper than in Bombay.

"(2.) The natives will not touch any kind of meat slaughtered or handled by Europeans.

"The average supply of beef and mutton is up to the demand, excepting at the beginning of the rains, when there is a slight falling off in the quality of beef for a short time."

I have, &c.

E. C. K. OLLIVANT,
Municipal Commissioner.

MEMORANDUM showing the Weekly Average Consumption of Beef and Mutton in the City of Bombay, and the Average Ruling Market Prices of same.

Per Week.	Number of Carcases.	Total Average Weight.	Average Ruling Prices per lb. From	Average Ruling Prices per lb. To	Or in English Money, about	Remarks.
		lb.	R. a. p.	R. a. p.	£ s. d.	
Beef	390	97,500	0 3 0	0 3 6	0 0 3¾	At present rate of exchange, 1s. 7½d. per rupee.
Mutton for Europeans ..	2,427	84,945	0 3 0	0 4 0	0 0 4	
Mutton for natives ..	6,460	193,800	0 2 6	0 3 6	0 0 3½	

P. C. HIGGINS,
Superintendent of Markets and Slaughterhouses.

Enclosure No. 6.

(No. 90 of 1884.)

The CITY MAGISTRATE, Poona, to the UNDER-SECRETARY, Bombay.

SIR,— Poona, 6th October, 1884.

With reference to Government Resolution No. 3597, dated 2nd instant, I have the honour to report that the daily consumption of mutton in Poona City averages about 3,000lb. Beef is not used or brought into the city. The price of mutton is about 1 anna* and a half per pound.

I have, &c.,

A. H. PLUNKETT,
City Magistrate, F. C., Poona

W. P. Symonds, Esq.,
Under-Secretary to Government, General Department, Bombay.

Sub-Enclosure.

(No. 1006.)

The CANTONMENT MAGISTRATE, Poona, to the COLLECTOR and MAGISTRATE, Poona.

SIR,— Cantonment Magistrate's Office, Poona, 16th October, 1884.

With reference to paragraph 2 of Government Resolution No. 3597, dated 2nd instant (sent to me direct from the Secretariat), I have the honour to forward herewith a return showing the actual number of animals killed for the past twelve months for sale in the public markets in the cantonment. The weight is only an average of the several animals of each kind; each sheep or goat weighs about 38lb. They are killed in about equal numbers. Cows only, as a rule, are slaughtered, and weigh about 280lb. each. About 10 per cent. of all the above is first-class meat, and sold (mutton and beef) at 4 annas (say, 6d. sterling) per pound. The price of the other kind of meat averages from 1½ to 2½ annas per pound.

2. The frozen meat referred to would certainly find sale to a limited scale amongst Christian classes, as it is much cheaper than either beef or mutton, but it will not find market amongst the other classes of people such as Parsees, Mahomedans, Jews, &c., as these classes of people will not touch any meat which is not killed by a Mahomedan moolah or by one of their castes.

I have, &c.,

C. D. LA TOUCHE, Colonel,
Cantonment Magistrate, Poona.

The Collector and Magistrate, Poona.

STATEMENT of BEEF and MUTTON sold in the Public Markets in the Cantonment of Poona for the past Twelve Months.

—	No. of Cattle (sheep, Goats, and Cows).	Weight of each Cattle, in lb.	Total Weight, in lb.	Total No. of lb. per Month.	Ten per cent. of Total Weight, best.	Total of Other Sort, in lb.	Remarks.
Mutton	26,827	38	1,019,426	84,952⅙	8,495·2	76,456·8	
Beef	6,268	280	1,755,040	146,253½	14,625·31	131,627·31	

C. D. LA TOUCHE, Colonel,
Cantonment Magistrate.

* 1 anna—nominally, 1½d. sterling.

Enclosure No. 7.

(No. 33, 6819.)

The COMMISSARY-GENERAL to the UNDER-SECRETARY, Bombay.

Commissary-General's Office, Bombay, 23rd October, 1884.

THE undersigned presents compliments to the Under-Secretary to Government General Department, and, with reference to his Memorandum No. 3832, of 21st instant, begs to state that the subject of the New Zealand frozen meat is under reference, and will be replied to as soon as possible.

E. ASTREHAN, Lieut-Colonel,
For Acting Commissary-General.

Enclosure No. 8.

(No. 180R, 11877.)

The SECRETARY, Bombay, to the CONSULTING ENGINEER for RAILWAYS.

SIR,— G.I.P. Railway Company, Bombay, 11th November, 1884.

With reference to Government Resolution No. 1838, of 1884, as to the conveyance by rail of New Zealand frozen meat from Bombay to Poona, the agent presumes it would require to be sent by passenger train, and desires me to quote as a special rate £14 10s. per ton to Poona. This will be the third-class goods rate.

I have, &c.,
F. W. J. VINING,
For Secretary.

The Consulting Engineer for Railways.

No. 12.

MINUTE by His Excellency the Right Hon. Sir JAMES FERGUSSON.

IT will appear by these papers that the success of the importation of frozen meat and woollen fabrics to Bombay can only be decided by experiment. The sale of the former would be chiefly confined to Europeans, and those of the richer class.

As a rule the meat supplied in the market is poor compared to Australian and New Zealand meat; but very good meat can be obtained by the larger consumers, and generally that supplied to Government House is little, if at all, inferior. A great many Europeans would pay a somewhat higher price for a really good article, say 6d. to 7d. per lb., instead of 3d. to 4d.

Ice can be procured to any extent from the Ice Manufacturing Company, and arrangements could be made for storing meat as in London.

There are no towns in the Bombay Presidency with so large an European population as would make it worth while to send the foreign meat there, except Poona. The rates offered by the railway will be sent when received.* The distance is 118 miles; but the native meat is somewhat cheaper in Poona than in Bombay.

The commissariat, who are large consumers, would certainly not buy meat at 4d. or 5d., when they can produce or buy it at 2d. to 3d. A large portion of their supply come from Government farms.

The New Zealand woollen goods are not at present known, neither is their price stated. I know them to be light in texture, warm and durable, and I feel sure they would be admired. Whether they would be taken up by wholesale importers in competition with established British stuffs is a difficult question of trade, in which comparative price would be a considerable factor.

My impression is that, while an experimental shipment is the only reliable test, no opportunity so favourable can be obtained as that which would be given by the Bombay International Exhibition, at present proposed to be opened in December, 1866. There might then be a refreshment-room opened at which colonial meat, soup, &c., might be eaten, and colonial meat of a similar kind be procurable on demand. Woollen goods might also be procurable as well as exhibited.

Calcutta has a much larger European population than Bombay, and the market for colonial meat ought therefore to be larger proportionably. The natives as a rule both insist on having meat killed on caste principles, and prefer it fresh killed. Some of the Parsees would eat imported meat.

8th November, 1884. JAMES FERGUSSON.

No. 13.

Sir JULIUS VOGEL, K.C.M.G., to the UNDER-SECRETARY, Bombay.

SIR,— Wellington, 18th December, 1884.

I have the honor to acknowledge the receipt of your letter of the 14th November, enclosing sundry memoranda and letters in reference to the sale of frozen meat and woollen fabrics in India, about which I telegraphed to His Excellency Sir James Fergusson.

I have to ask you to do me the favour to represent to His Excellency that the Government of New Zealand feel exceeding indebted to him and to the Government of Bombay for the kindness and promptitude with which they have afforded the information which was asked. It will be made public through the colony, and it is to be hoped will lead to the establishment of commercial relations between this colony and India.

I have, &c.,
JULIUS VOGEL.

W. P. Symonds, Esq.,
Acting Under-Secretary to Government, Bombay.

---

* The information has since been supplied by the Secretary to the Agent, G.I.P. Railway Company, *vide* his letter to the Consulting Engineer for Railways, No. 180R/11877, dated 11th November, 1884, among the enclosures.

By Authority: GEORGE DIDSBURY, Government Printer, Wellington.—1885.