1904.

NEW ZEALAND.

INDUSTRIES AND COMMERCE REPORT

(23rd August, 1904)

BY THE MINISTER OF INDUSTRIES AND COMMERCE, HON. SIR J. G. WARD, K.C.M.G.

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

Department of Industries and Commerce, Wellington, 16th August, 1904.

MY LORD,—

I have the honour to submit to Your Excellency the report of the Department of Industries and Commerce for the year ending 31st March, 1904.

I have the honour to be,

Your Lordship's most obedient servant,

J. G. WARD,

Minister of Industries and Commerce.

His Excellency the Governor of New Zealand.

IN presenting this my third annual statement I have great pleasure in intimating that the Department is doing good and useful work. The increase of business conducted by it has continued during the past year. A considerable extent of work has been done, both by correspondence and by interview, with firms and persons from oversea countries in connection with the trade and commerce of the colony.

The Head Office is still being used to a great extent by commercial people visiting the colony, who are supplied with information which enables them to do their business with the least possible loss of time, and in many cases the information supplied leads to business of a satisfactory nature, and of considerable value to the colony. The Department itself does not undertake trade of any nature for or on behalf of any one; it acts as a medium to obtain and distribute information, and to assist traders and producers in finding fresh markets, and, if possible, to further develop existing ones.

Special attention is being paid to obtain the most reliable market reports from the United Kingdom and South Africa, which are circulated throughout the colony weekly for the information of traders and producers. The publication in the *Board of Trade Journal* of the appointment of the Secretary of the Department as Corresponding Secretary in New Zealand to the Commercial Intelligence Branch of the British Board of Trade has led to an immense number of inquiries from all parts of the world as to the possibilities of trading with the colony. Manufacturers of all description of goods are addressing the Department as to the prospects of trade and asking for the names of traders in the colony in the different articles manufactured, and buyers of dairy-produce, frozen meat, wool, &c., are inquiring almost daily as to the sources and extent of supplies and the manner of obtaining same.

The Commercial Agent for the colony in South Africa, Mr. J. G. Gow, is now fully established at Durban, from whence he makes periodical visits to the other principal centres in South Africa. The results of the establishment of the agency in South Africa have been of advantage to the colony, but would have been more so if it had not been for the universal depression which is at present prevailing all over that country.

The Produce Commissioner (Mr. H. C. Cameron) in London is doing good work, and is kept busy attending to the large shipments of produce which are continually going forward from the colony to London, reporting on same, and keeping the Head Office advised as to the fluctuations of the different markets, which are immediately placed at the disposal of traders and producers.

While in South Africa Mr. J. A. Kinsella was reappointed Dairy Commissioner, and instructions on behalf of the Department of Industries and Commerce were cabled to him to proceed to England *viâ* the Argentine and to prepare commercial reports dealing with the position and possible developments of the produce trade of this colony with South Africa, and to report generally on the conditions of the produce trades in the Argentine and the United Kingdom.

The initiation of the steam service to and from the west-coast ports of the United Kingdom has opened new markets at Cardiff, Bristol, Liverpool, and Glasgow, which the colony has for years hoped to obtain, and is to be congratulated upon having at last accomplished. The possibilities of trade in these markets—especially if the port of Manchester is added, which is very

probable—are very much greater than is generally thought, and, once having established the steam service, it should be followed up vigorously with such steps as are considered necessary to obtain the fullest benefits from the additional markets with which the colony is now placed in touch.

An offer to establish a steam service between Noumea and this colony has been received from the Union Steam Ship Company (Limited), and negotiations are still in progress. It is hoped that a mutually satisfactory arrangement will be arrived at, and that the service will be an accomplished fact shortly.

This colony does not progress as it should do in the direction of cultivating a trade with the Far East, and to a great extent this is due to the various lines of steamers running from the East terminating their routes and turning round at Melbourne and Sydney. Three well-equipped lines of steamers are running regularly to time-table dates between Australia and Japan, calling at Manila and Hongkong *en route*. In my opinion, the time has arrived when negotiations should be opened with one of these companies to extend their service to one or two ports in this colony. If this were done we should soon participate in the business that is at present passing between Australia and the East. More than this, New Zealand would be brought within the eastern circle of the tourists' and travellers' route, which at present does not extend beyond Australia.

During September last it was currently reported throughout the colony that the White Star Line of steamers, which run a monthly service from Sydney and Melbourne to London and Liverpool *viâ* South Africa, had reduced the freight on butter from Australian ports to London and Liverpool to ½d. per pound, and as this was giving Australian producers an advantage over New Zealand of £2 13s. 4d. per ton on the output of butter, it was considered advisable to look into the matter with a view of obtaining the same advantage for this colony. The full correspondence relative to the matter was laid upon the table of the House of Representatives during last session, from which it will be found that the statement was premature, and that the reduction was special and temporary, and was subsequently withdrawn.

The successful carrying-on of the butter industry and the marketing of the colony's output with a view to obtaining the best results is a matter of the greatest importance to the prosperity of the colony, because this industry leads to closer settlement of the land, which is an important consideration in a colony of limited extent, and in proportion to the value of the output provides very much more employment for labour than any other industry. The present system of independent action amongst the factories in disposing of their outputs is not satisfactory, and is not achieving anything like the best possible results. Some factories sell on the spot, some consign for sale and returns, and others sell c.i.f., with the result that the output of the colony gets into so many hands that concerted action is impossible. Competition amongst the holders and consignees in the United Kingdom takes place, which brings about the lowering of prices, and other unsatisfactory conditions prevail, the results of which all fall upon the producers in the colony. If arrangements could be made by which the whole butter-output of the colony should be concentrated for sale through one channel, it would be a great step forward, and it is in the interests of the producers to bring about this desirable condition of affairs.

Negotiations for the establishment of a steam cargo service between Canada and this colony are in progress, but so far have not resulted in anything tangible. The subsidy proposed by the New Zealand Government is a small amount compared to what is required to obtain a suitable service. The Canadian Government have been approached with a view to find the balance of subsidy required, and as the present preferential tariff, if assisted by good opportunities of direct shipment, will greatly develop trade between Canada and New Zealand, there is reason to hope that the Canadian Government will join in finding the subsidy required to establish a valuable connection, which would be of immense service to the further development of the trade of both countries.

The matter of an attempt to secure a monopoly of the frozen-meat supply of South Africa has had the attention of the Department during the past two or three months. The leaders of the movement in South Africa are said to be a combination of London and Cape Town meat-salesmen who have large interests in the Argentine, and the object of the suggested monopoly is to secure the trade for Argentine meat to the complete exclusion of meat from the Australian Colonies and New Zealand. To prevent the accomplishment of the purpose of the monopoly a resolution has been passed in the Natal Parliament indorsing the principle of an additional duty on imported foreign frozen meat. The Commercial Agent for this colony, acting under my instructions, took a very active part in bringing about the passing of this resolution, and was then directed to proceed to the Transvaal to interview the authorities there with the same object in view. The result of the representations has been satisfactory. The resolution passed by the Natal Parliament is not effective unless indorsed by the Customs Union of South Africa, which includes the Transvaal and Cape Colony. With a view to checkmate the success of the monopoly inquiries were made as to what frozen-storage is available to be secured by the New Zealand Government, if required, for the storage of frozen meat and produce from this colony. The result of these inquiries is that certain cold-storage is at present under offer to the Government at Durban and Delago Bay, which, if it is found necessary to secure the same, will effectually prevent the monopoly from succeeding in excluding New Zealand meat from the markets of South Africa.

The policy of assisting traders and producers to exploit and open up new markets is so general nowadays, that no possible opportunity should be lost in endeavouring to extend the distribution of this colony's products. The results are so important to the well-being and prosperity of the colony that where there is seen any chance of extension vigorous and practical steps should be taken to promote the same. Steam services of every description should be induced to extend their operations to New Zealand, because there is no doubt that nothing promotes trade like steam communication. Trade follows the flag, undoubtedly, but nowadays it is the flag of the steamship-line, not particularly the flag of any country, though naturally we favour the supporting of our own.

During the Secretary of the Department's (Mr. T. E. Donne) absence, representing the colony at the St. Louis Exposition, the important duties devolving upon him are intrusted to Mr. G. S. Munro, Acting-Secretary, whose report with those of Mr. Cameron, Mr. Gow, and Mr. Kinsella are attached, and each of which contain valuable information.

SIR,— Department of Industries and Commerce, Wellington, 30th June, 1904.

I have the honour to submit herewith the Departmental report for the year ended 31st March, 1904.

G. S. MUNRO, Acting-Secretary.

The Hon. Sir J. G. Ward, K.C.M.G., Minister of Industries and Commerce, Wellington.

MARKET REPORTS.

The Department aims at placing at the disposal of producers and traders reliable periodical reports on the demand and current prices for New Zealand produce in all the principal markets. These reports are received regularly from the South African and London officials of the Department, and are immediately communicated to the public through the medium of the Press.

Special reports on any particular line of produce are obtained at the request of any one interested, either by post or cablegram, if by the latter means payment of the cost incurred is required; and, in the case of foreign markets, where there is no resident representative of the Government, all commercial information relative to any line of produce is obtained through the medium of the Commercial Intelligence Branch of the British Board of Trade.

At the request of the Agent-General, the full particulars of each shipment of frozen meat, dairy-produce, and hemp are cabled immediately each steamer sails, or as soon after as possible. These particulars are recorded for public information in the London office, where any one interested can ascertain exactly the quantities of New Zealand produce which are on the water in transit to the United Kingdom. I understand that reliable information of this nature is very much appreciated by purchasers of our produce in the United Kingdom, and enables them to operate with confidence, as they know the information supplied is absolutely reliable, and free from any taint of interest.

SUBSIDISED STEAM SERVICE TO SOUTH AFRICA.

This service has been satisfactorily carried out during the past twelve months. During July last, owing to the heavy demands for space for shipment of oats to South Africa the contractors were forced to put on an extra steamer to relieve the contract steamer. This steamer, the "Cooeyanna," loaded almost entirely with oats and live sheep. Since then the tonnage placed at the disposal of shippers by the contractors has been in excess of their requirements.

I attach a schedule showing the sailing and arrival dates of each steamer, the average duration of passages, and the quantities of the principal lines of cargo carried:—

Name of Steamer.	Date of Sailing.	Date of Arrival in South Africa.
Norfolk	30 April, 1903 ...	13 June, 1903.
Essex	14 June, " ...	Voyage abandoned owing to accident.
Cornwall	30 June, " ...	11 August, 1903.
Cooeyanna	14 July, " ...	Not a contract steamer.
Essex	28 August, " ...	3 October, 1903.
Suffolk	10 September, " ...	24 October, "
Dorset	29 September, " ...	19 November, "
Somerset	24 October, " ...	22 December, "
Rippingham Grange	2 December, " ...	15 January, 1904.
Fifeshire	11 January, 1904 ...	23 February, "
Everton Grange	12 January, " ...	Not a contract steamer.
Norfolk	19 February, " ...	6 April, 1904.
Surrey	6 March, " ...	14 April, "
Devon	1 April, " ...	10 May, "

Average passage from New Zealand to South Africa *viâ* Fremantle, including all stoppages: 44 days.

Total shipments by steamers of the service for the year ending 31st March are as follows: 249,995 carcases mutton, 7,508 quarters beef, 6,452 carcases lamb, 275,043 sacks oats, 27,409 boxes butter, 2,350 crates poultry, 21,112 sacks bran, 6,265 sides pork, 1,294 sacks pumice, 177 cans canned fish, 855 sacks barley, 24 horses, 75 head of cattle, 147,926 superficial feet timber, 1,836 sacks peas, 575 sacks grass-seed, 7,569 sacks wheat, 62 sacks beans, 300 sacks wheatmeal, 710 cases boned beef, 1,708 crates frozen fish, 2,398 cases potatoes, 15,369 live sheep, 587 crates cheese, 234 sacks pollard, 1,930 cans pressed meats, 75 crates rabbits, and 1,529 packages of sundries.

Shipments to Fremantle were as follows: 15,290 carcases mutton, 2,122 sacks oats, 889 sacks bran, 1,600 carcases lamb, 70 crates frozen fish, 74,326 superficial feet timber, 30 cases cheese, and 50 cases pressed meats.

It will be noticed that a considerable quantity of frozen mutton has been shipped to Fremantle by the subsidised steam service, but unfortunately the quantity of general cargo is limited owing to the operations of the shipping ring which controls the coastal trade of the Commonwealth. This subject was referred to in my last annual report, and the position remains the same, except that the restrictions mentioned do not apply to shipments of refrigerated cargo.

A steady volume of trade with South African ports has been maintained during the past year, carried on by the subsidised steam service. Owing to the serious depression which is general throughout South Africa the trade has been restricted chiefly through the tightness of the money

market in that country. However, there are indications at present of an improvement. The bulk of the shipments of produce made from New Zealand to South Africa during the past year has been made largely on behalf of Australian merchants, who only fill their requirements in this colony when they are unable to purchase on better terms in their own colony. During the drought of 1902-3, when local supplies were scarce, Australian merchants were compelled to purchase supplies for South Africa heavily in this colony, and by doing so they conserved their trade, and when supplies of produce were available at home they ceased to purchase in New Zealand, and our own exporters have found it necessary to exert themselves to secure and hold a portion of this trade for our colony. Further remarks on this subject come within the province of the Commercial Agent for the colony resident in South Africa, to whose report attached I beg to refer you.

Frozen-meat Trade.

In referring to this important branch of the produce trade of the colony in my previous reports I have always advocated an extension of the markets with a view to relieve the congestion which occurs in London, and to reduce the competition amongst the brokers who handle New Zealand meat. Steps have now been taken in the direction indicated, and the manifests of recent steamers prove conclusively the wisdom of the extension. The markets of Liverpool, Cardiff, Bristol, and Glasgow are now added to the trading opportunities of the colony, and, without any fear of being considered optimistic, I venture the opinion that the trade with those centres will be a very important factor in the prosperity of the colony. Further remarks on this subject come within the province of the Produce Commissioner stationed in London, whose extensive report is attached hereto, and to which I beg to refer you.

Steam Service to and from the West-coast Ports of the United Kingdom.

The important step of calling for offers to supply a steam service to and from the west-coast ports of the United Kingdom was taken in December last. Three tenders were received—from the Shaw, Savill, and Albion Company, the New Zealand Shipping Company, and the Federal and Houlder Steamship Lines. Before the acceptance of any offer, that of the New Zealand Shipping Company was withdrawn, and subsequently the offer of the Federal and Houlder Steamship Lines was accepted. It is gratifying to note that neither offer required subsidy, and that these new markets are now available to the producers of the colony without any burden to the taxpayers of the colony. The service was initiated by the "Surrey" on the 6th March last; since then the "Devon," "Dorset," and "Suffolk" have sailed, and the complete justification of the establishment of the service is demonstrated by the latter steamer, which sailed on the 2nd June with a full cargo for South Africa and the west-coast ports of the United Kingdom, the total estimated f.o.b. value of which was £82,500, and which included 35,000 carcases mutton, 33,000 carcases lamb, 2,783 boxes butter, 14,250 cases of rabbits, 414 crates poultry, 810 boxes boned beef, 2,869 sacks peas, 23,324 sacks oats, 2,351 sacks bran, 615 sacks beans, 1,978 sacks wheat, 533 sacks barley, 219,976 superficial feet of kauri timber, 156 cases cheese, 275 live sheep, and a large quantity of sundries.

The steamer "Suffolk" has since been followed by the s.s. "Buteshire," with a cargo valued at £84,000, of which the following are the particulars: 36,314 carcases lamb, 16,325 carcases mutton, 501 quarters beef, 18,241 crates rabbits, 1,690 boxes butter, 800 boxes boned beef, 56 crates poultry, 50 cases frozen fish, 1,798 cases preserved meats, 110 cases cheese, 200 boxes potatoes, 13,482 sacks oats, 5,874 sacks bran, 2,520 sacks wheat, 2,597 sacks grass-seed, 500 sacks potatoes, 116 sacks peas, 445 sacks beans, 10 sacks tares, 10 sacks oatmeal, 43 bales hemp, and 2 crates sundries.

The present service is without doubt answering the purpose effectively of opening up new markets for New Zealand produce.

Compulsory Government Grading of Grain for Export.

Applications for the position of Government graders have been called for recently, and the appointments are about to be made at all the principal grain-exporting ports of the colony. The tariff of charges will be fixed at such a scale that this section of the Department should be self-supporting, and, in any case, if there should be a small deficiency, the money will be well spent if the proposed step tends in any way to improve the quality of shipments of the colony's produce, and by reliable work to create confidence and promote trade with outside markets.

Departmental Expenses.

The expenses incurred in carrying on the Head Office for the year ending the 31st March last amount to £1,240 7s. 8d., made up as follows:—

	£	s.	d.
Salaries	716	5	0
Clerical assistance	296	8	0
Rent of offices	137	10	0
Travelling-expenses	4	19	0
Contingencies	85	5	8

The expenses of the South African Agency for the same period amount to £1,044 6s. 5d., made up as follows:—

	£	s.	d.
Salaries	450	0	0
Clerical assistance	36	10	2
Rent of offices	21	18	6
Travelling-expenses and allowances	499	10	11
Contingencies	36	6	0

The expenses of the Produce Commissioner of London for the same period amount to £1,254 0s. 9d., made up as follows:—

	£	s.	d.
Salary	400	0	0
Clerical assistance	191	8	7
Contingencies	4	5	11
Travelling-expenses and allowances	658	6	3

The latter item is unusually heavy, as it includes the cost of Mr. H. C. Cameron's visit to the colony to give evidence before the parliamentary Committee appointed to report on the frozen-meat trade.

APPENDIX A.

SIR,— Durban, 2nd April, 1904.

I have the honour to send a report of my year's work in South Africa. I can hardly realise that it is twelve months since I set foot in this country; such however is the case. Whatever the ultimate result may be, it seems to me that among the many wise steps taken that of establishing representation in South Africa by our esteemed Government will yet be proved to be one of the wisest. I came here with the fullest confidence in the productive powers of New Zealand; here it was for me to discover one of the best possible markets anywhere in the Empire. There are many reasons for this assumption; for on the one side we have excellent facilities for coping with the trade on terms equal to any, and on the other the backward state of this country with regard to such matters, and the indisposition of the local people to do much towards providing supplies for their own needs. The common tendency is to produce nothing which they can import: hence our opportunity.

On my arrival in Durban it became necessary for me to make myself acquainted with the place and people commercially, and more to make both acquainted with me. This was not so easy a matter as one might at first suppose; though colonials themselves, the people of South Africa, and more especially the people of Natal, look upon their oversea cousins with a good deal of hesitation, not unmixed with suspicion. As one small illustration: On my arrival, thinking that the little courtesy commonly extended in New Zealand to representatives of other Governments would be common to all parts of the Empire, I proceeded to interview the General Manager of the Natal Government Railways. Not at first taking my full credentials with me may have been a bar, but even after I had presented my full credentials, I was not fortunate enough to secure the concession which we in New Zealand consider one of the least things we can do. But as I did not come for personal considerations, such little matters may be passed over, except as an illustration of how carefully one must feel his way. I am proud to say that, so far as opinions are concerned, more recent experience has confirmed my first impressions to the effect that the market is ours if we are prepared to take possession of it. What use has been made of the opportunity it is the purpose of this report to make plain. At the outset, as your representative I had to encounter an attitude created by those who had been here before me. Produce of different kinds had been sent to the South African market with a reputation that it was New Zealand produce; in many instances it was of very inferior quality, and had created a very bad impression indeed, so much so that I had to call all my past experience to my aid in order to secure attention at all. The one fact, however, that the New Zealand Government had sent over a special representative, meant a great deal with shrewd business men—and it must be remembered that the business men here are of the shrewdest. There was an outcry for solid information, and that was the first task to which I put myself. Naturally enough, as the New Zealand Government had sent a man to look after commercial interests, a good many thought that there might be direct trade with the Government, and I must say some aspects lent colour to that thought. Although not regarded as perfect, the people on the whole have supreme faith in what the Government does in the way of commercial movements; even the Natives know the value of the Government seal. The demand for information has not grown less with the passing months. An interest has been awakened, not only in the products but in the country, in the people, and in the legislation. Among those who have during the past twelve months gone from South Africa to New Zealand are not only those who claim New Zealand as their home, but some of the smartest business men from South Africa.

Three times since my arrival in Durban I have visited all the principal centres in South Africa, and, judging by the many references to me and my work in the newspapers, I am one of the best-known men in South Africa. The work which falls to my share often requires the activity of two men; it has frequently been remarked to me, if you had an active assistant to take some of the work you would still find quite enough to do. I have not the slightest doubt that in this Department extra energy and extra means at my disposal might mean extra grist to the mill. On my first visit to the ports farther south, I found facilities for unloading New Zealand cargoes anything but what they ought to have been. No one seemed particularly at fault: the inconvenience had simply not been taken into consideration; but when I, as a properly accredited Government representative, interviewed the proper authorities, these inconveniences, which had caused such annoying and expensive delays, were looked into, and very great improvements had been made, so that now ships from New Zealand have an equal chance with ships from any part of the world. In addition to looking into these matters which were at once forced upon my attention, on each of my three visits to the principal towns I have been able to get into the closest touch with a large number of the principal business men, and I must say, with one accord they displayed a wish to become better acquainted with our colony and with possibilities of trade.

The trade which has been already done between South Africa and New Zealand, in spite of the unparalleled depression, may be taken as a fair indication of what may come if we do our part in securing it. Some further idea of the trade with this port in connection with the goods we can handle may be gathered from the figures given in the Chamber of Commerce report:—

Customs duties were collected as follows:—

	1903. £	1902. £
On oats	16,000	3,000
On fodder	21,000	11,500
On butter and margarine	25,000	24,000
On preserved meat	17,000	16,000

The gross Customs receipts for 1903 were £1,197,000, as compared with £976,000 in 1902, or an increase of 22 per cent. With such facts before you, and with the remark of the Chairman of the Chamber of Commerce, "There are signs, however, that the dawn of better times is not far off," you will be able to estimate some of the possibilities of the future.

With regard to our own products, it seems to me that one of the first conditions is not merely to make success possible, but to make failure impossible. Where we have money and a people whose chief delight is to spend money, that taste and that money must be catered for. I regret to complain that in this respect New Zealand exporters have made some very foolish and injurious blunders.

Sheep.

The information which, on my arrival, I gave in regard to our sheep at once secured the attention of those interested, and created a desire on the part of would-be buyers to know more. With what information I was able to supply they became convinced there was something in the prospect. Had my verbal reports been properly substantiated with what actually came to hand, there can be no question that we should now be doing a very large trade in sheep alone. Some of the sheep were good, such as those sent by the "Dorset" and the "Essex." Those sent by the "Norfolk" had been good sheep, but the voyage had told upon them. The sheep on the "Cooeyanna" and the "Morayshire" were not good.

Fish.

Durban has a large market for fish, as indeed has all South Africa, and in the near future the demand may increase. There is a large local consumption, and this is supplemented by the up-country trade. But there is also a large supply, and this, of course, keeps the prices down. Our experience in this branch of trade has been unfortunate. In some cases the packing has been altogether too fragile, so that when landed the cases have not been in good condition—broken, and the contents unfit for sale or use. And the cases are far too large; boxes containing 14 lb. only have a far better chance of sale than those containing 28 lb. In some cases the fish have been so badly cleaned that it has all been condemned by the Sanitary Inspector, and has had to be destroyed, thus involving loss to the exporter and disappointment and annoyance at this end. It should be remembered that although South Africa offers a market for fish, New Zealand is not by any means the only country which exports fish. Fish comes here from all countries in large quantities and in splendid condition. New Zealand facilities and the keen competition should be quite sufficient to induce exporters to put out an article a credit to themselves and profitable at the same time.

Butter.

Good New Zealand butter comes an easy first in quality, demand, and price. One of the best evidences of its position is the attempt made to counterfeit it; to this matter I have before called attention. Any complaints made in connection with this matter refer not so much to any fault in the original quality of the article as to the putting up for market. If the tongue is the test of good flavour, the appearance of the article has a good deal to do with unfastening the purse-strings. Very frequently the cases have been too fragile; all cases should be airtight and well wired, not clumsy, but secure and strong.

Then, again, if we want the best patronage and the best price for our butter, it must be new butter, not butter nine months old. What trade can be done if we go the right way to work you may infer from the one item—viz., £25,000 collected in Customs duties in Natal on butter. It is for the exporters to decide upon the extent of the trade to be done; my duty is to give them the facts.

Cheese.

There is a fair demand for good-quality cheese here, but the quality must be up to that of the cheese sent out by other countries, and the packing must be such as to secure its landing in the very best condition.

Timber.

I have on several occasions sent to the Department reports concerning the openings for New Zealand timbers. I have also been able to send reports which experts have been good enough to furnish. During my recent tour to all the principal places in South Africa I heard nothing to weaken, but a good deal to strengthen, my previous convictions in connection with this trade. It should be remembered that many parts of South Africa are as empty of timber as a desert, and there is no question but that there must be in the near future a very large demand for such timbers as New Zealand can export. I have recently noticed that the Natal railways are taking up the hollow iron sleepers and substituting wood; this is on the overland line to the Cape. As in the case of other matters, in consequence of bad samples being shipped to South Africa, our timbers were in very bad repute when I came here; but the constant inquiries and expressions of approval during the past year prove, I think, that the stigma has been removed, and that we

have an opportunity. As I have before stated, some of the last samples have been in the hands of expert woodworkers, and they have expressed the highest satisfaction. But if we are to secure the contracts for the railways we must be able to put wood before them which has stood the test of years in trying circumstances. In this respect we might take a leaf out of the book of the sister Australasian Colonies; the manner in which they have equipped their representatives does them infinite credit, and is the best indication that they mean to succeed. In my opinion we should be able to secure a large portion of the South African timber trade. With an abnormal depression, and with a lull in everything, including the building trade, an increase in the value of the timber imported of £156,000 in one year is not without signification. I trust the various reports I have sent at different times bearing upon this subject will be the means of rousing New Zealand timber-exporters.

Oats.

In the matter of oats, I do not hesitate to say that New Zealand should have the largest say. You will notice by the figures quoted that the demand has so increased that there has been an increased revenue from oats alone to the extent of £13,000 in one year, and this in Customs duties. Other countries land oats here in splendid condition, although the original quality of the oats is in no way superior to the New Zealand product. The shipments landed at Port Elizabeth have in some cases been heated. In the cargo of the "Essex" the oats which came from Lyttelton were heated, whilst in the same hold there was a consignment of oats which was landed in the most perfect condition. The oats by the "Norfolk" were good. When at Port Elizabeth I pointed out the excellence of our oats, and the merchants there were eager to give them a trial. The military are quite prepared to accept tenders for the supply of such an article, and once again I point out that the matter is in the hands of the exporters, who must, if they value the trade, leave nothing undone to send a good article carefully graded.

Poultry.

With regard to poultry, there is practically an unlimited market here. So far the quality of poultry from New Zealand has been very good, and might be classed as excellent. So long as the quality is kept up and the packing is equal to what has been there need be no fear of any falling-off in the trade. It is not simply that there is a demand: for some reason there is the impression abroad that in Natal poultry-farming will not pay, consequently it is religiously left alone, and in the future will be still left alone.

Cable Addresses.

Merchants complain that in cabling to New Zealand they frequently realise considerable difficulty in obtaining quotations. All New Zealand exporters would act wisely to communicate with and send their cable addresses to the Industries and Commerce Department. Almost every day I have inquiries for the cable address of some New Zealand exporter, and frequently there is considerable difficulty in imparting the information required, and then the cable address cannot be given. It would be a small matter for each importer to give, in brief, the nature of his exports and his cable address, and in this manner a great deal of time and expense could be saved, and a great facility given to trade. It should also be noted that when quotations are asked for it is always c.i.f. which are required.

Coal.

For some time past I have used my best endeavours to secure the attention of South African buyers to our New Zealand coal. I have recently received an inquiry from the Chairman of the Table Bay Harbour Board for information. Enclosed you will find a copy of my reply to him. In addition to this reply, I forwarded all particulars of the Westport Coal Company. I trust, therefore, that the time is not far distant when our trade will develop in this direction also. The coal resources of Natal are not by any means such as to exclude the possibility of a good trade.

Potatoes.

Almost all the potatoes consumed in Natal are imported. In very large quantities they come from France and from Las Palmas. Although so far the attempts made with New Zealand potatoes have met with disaster, I am of the opinion that there is a good market; but as those who have made the attempt have been rather severely bitten, they are naturally shy. All that need be said upon this matter is: a good sound article at a reasonable price will command sale.

Rabbits.

There is a considerable consumption of rabbits in South Africa, and I am informed that the quality of New Zealand rabbits is very much appreciated. As this is an agreeable change in diet, and we have a considerable population accustomed to such meat, if the reputation can be maintained there should be a respectable trade done.

Tourist Department.

In connection with the Tourist Department I have to be a sort of perpetual walking encyclopedia. The occasional letters in the papers, the articles written by other visitors, the would-be settlers, prospective farmers, and mechanics who are in sympathy with progressive legislation are constantly either writing me or seeking information. The very least I can do is to answer their many inquiries, and this naturally takes up a very great deal of my time. As a matter of fact I have to put my best foot forward in order that my work proper never suffers, and I take every care that it does not. A recent visitor from Natal to New Zealand has been giving his impressions, which will in all probability attract some attention. He is well known, and his references to the scenery will very likely induce others to try the land. You may rest assured that I shall do what I can to spread information, but this means energy and time

New-Zealanders.

There has been, in consequence of the depression, a steady flow of New-Zealanders from South Africa. From many causes a large number have been practically ruined, and as they felt they must start afresh, they were more disposed to start under favourable conditions, for it should not be overlooked that the very conditions which in New Zealand are regarded as almost ideal are here looked upon with some suspicion. So much is this so, that whilst almost anything from the Old Country is welcomed, frequently the very finest ability from the southern world is given the whole width of the street. My reply to those who consult me about New Zealand is: There is room for the best, and only the best are wanted. My regret has been that when appealed to by New-Zealanders I have not been able to afford to them that employment which they sought, nor to make them independent of local conditions.

The Future.

I am entering upon my second year with all energy and determination to make the best of it. As far as one can judge, though there may be no immediate or speedy leaps and bounds, the worst is over, and we may soon hope to see indications of a brighter sky. Men in prominent commercial position, even some who were speaking very despondently a few months ago, are adopting a more hopeful tone, and I can only hope that the anticipations may be fully realised. With regard to New Zealand, I trust the exporters will make the best of their opportunity. Special attention may be called to the rapid development in shipping at several of the ports, notably at East London and Delagoa Bay, to which trade is rapidly wending its steps, and the reasons are not far to seek. East London is 666 miles from Johannesburg; Delagoa Bay, 395 miles; Durban, 483 miles. From Durban to Johannesburg is twenty-seven hours by rail; Delagoa Bay, twenty-four hours. Trade is going to these ports because of the convenience, and because they are catering for the trade.

Cold-storage.

At the present time there is very little to report of a startling nature in connection with cold-storage. Grieves is in liquidation; so also is "Arctic." Sparks and Young's shares are quoted at Cape Town at 11s.; Federals are at , with little sign of change. Until cold-storage business improves there will be no demand for pumice.

My Recent Tour.

In consequence of the large number of correspondents from different parts of South Africa seeking information with regard to New Zealand, I recently paid a third visit to all the important centres in South Africa, in each case forwarding an intimation of my intention and an announcement of my arrival, in order to give every facility to those making inquiries.

At Pietermaritzburg I interviewed the Minister for Agriculture *re* our seeds, the various produce-merchants, the army contractor, &c.

At Jahannesburg I had a very large number of visitors, including intending settlers and prospective tourists. The leading merchants I found quite satisfied with our produce. The managing director of the Anglo-French Exploration Company promised me that he would instruct the heads of the various departments to give our produce the preference.

At Pretoria the Director of Agriculture promised me that he would give our seeds a trial, although he was unable to purchase at present.

At Bloemfontein I met Mr. Palmer, the newly appointed Commissioner of Lands. He promised that he would correspond with Mr. Ritchie *re* our seeds. Bloemfontein, so far, does little in New Zealand products.

The kauri timber has given every satisfaction at Cape Town, and as times improve we may hope to hear yet more of this line.

At every centre I gave all possible attention to matters in connection with the Industries and Commerce Department, and have every reason to be pleased with the reception the merchants gave me.

At various places I met a number of New-Zealanders, whose one refrain was, "There is no place like home."

Subsidised Steamers.

The s.s. "Norfolk" arrived at Durban on the 7th April, and came alongside the wharf on the following day. She had on board over two thousand sheep for slaughtering purposes, not from New Zealand, but from Australia. The above trade should have been retained in the hands of New Zealand exporters, and had the shipments of sheep been up to the guaranteed conditions it would have been in our hands.

Mr. Kinsella.

I have no doubt that it will prove a great benefit to New Zealand exporters (as it is certainly a loss to South Africa) to have Mr. Kinsella back again. His visit to and experience gained in South Africa will, of course, give him a great leverage in connection with the trade, for if he knows what New Zealand can do, he has also a good knowledge of the conditions prevailing here. Mr. Kinsella accompanied me to all the cold-storage works, and with me interviewed the principal importers, all the time taking copious notes. The frequent references to him in the Transvaal papers are evidence of the appreciation of those who know his value. He has certainly made a very good impression upon all the people with whom he came in contact. His advice to the exporters should prove of the greatest value, and I am sure that if they take it it must make a great difference to my work here, and consequently to New Zealand.

I am, &c.,

J. Graham Gow.

The Hon. Sir J. G. Ward, K.C.M.G.,
Minister of Industries and Commerce, Wellington, New Zealand.

APPENDIX B.

SIR,— Cape Town, 31st March, 1904.

In accordance with your cabled instructions to proceed to England *viâ* Argentine, and to report fully on the prospects of New Zealand trade with South Africa, I have now the honour to hand you herewith my report referring to South African trade.

I have, &c.,
J. A. KINSELLA.

The Hon. Sir J. G. Ward, K.C.M.G.,
Minister of Industries and Commerce, Wellington.

PROSPECTS.

IN my opinion the prospects for a large and lasting trade between New Zealand and Africa are almost assured, particularly in agricultural and dairy products. In fact, I would almost stake my reputation on the fact that an enormous trade could be done for many years to come if New Zealand people go about supplying this great Republic in a proper and businesslike manner. When I say a businesslike manner, I mean that we must endeavour to give the purchaser in Africa exactly what he can sell, and the article must be exactly what will suit the consumer or handler, whether meat, butter, cheese, timber, or any other product, so far as meat and dairy-produce is concerned; if we are not alive to the fact that it is important for us to lay our meat, butter, and cheese down on the African markets in A1 condition we shall shortly find ourselves out of the swim so far as quality and price are concerned.

I shall deal with each article of importance under separate headings—that is, the products which I think it will pay our colony to give most attention to. Before doing so, I should like to give my reasons for prophesying that Africa will for many years be compelled to import large quantities of agricultural products.

In the first place, one has only to look to statistics, and to watch from a practical point of view the large quantities of meat, butter, cheese, and condensed milk which are imported yearly from various countries into Africa. It is only necessary to visit the Imperial Cold-storage and Supply Company's premises at Cape Town and Durban a few times to become acquainted with the enormous cargoes of meat and dairy-produce which pass through these places only, not saying anything of the various other cold-storages which also do a large business.

So long as disease in stock continues in the various colonies of the African Republic, particularly in the Transvaal and the Orange River Colony, I am of the opinion that it will be some few years before they will be able to grow enough live-stock to supply local demands.

For the above reasons I am satisfied that New Zealand should be able to get a good look-in with her beef, mutton, tongues, kidneys, rabbits, butter, cheese, &c.

BEEF.

The latest small shipments of New Zealand beef seem to be giving almost entire satisfaction in Africa. I have made inquiries in Cape Town, Durban, and up-country at Johannesburg, Pretoria, Krugersdorp, &c., and although Argentine beef is largely used, they seem to prefer our nice small plump quarters to the enormous fat quarters from the Argentine; and if we could supply customers promptly and in quantities to suit demands, there is no reason to doubt but that we, as a British producing colony, should get a large share of the trade against the Argentine, at a shade better prices than we can secure in the Old Country.

In catering for the African trade, so far as meat is concerned, we should aim to send only the finest quality, for the reason that it is a new market and other countries are endeavouring to lay down in Africa just exactly the kind of meat and produce the people ask for. The above being so, I say it behoves the producers and shippers in New Zealand to take example from other countries.

We must send the proper weight of beef, and, above all, careful attention should be given to the dressing of it, both in the killing process, and also in the covering which protects the meat from the rough handling it receives in Africa, particularly when it is remembered that a large quantity of the beef and mutton has to travel hundreds of miles up country to Johannesburg, Pretoria, Krugersdorp, Potchestrome, Standerton, &c., in the Transvaal, as well as the quantities that go to other States in Africa. This meat is conveyed in cars that cannot be termed the best in the world, and the handling is done by what can be rightly termed the very dirtiest class of labour. I have seen labour of all kinds in many parts of the world, and I am of the opinion that the dirty, oily, half-naked, strong-smelling Kaffir is the most undesirable man on earth to be allowed to handle the fresh or frozen food eaten by white men.

MUTTON.

I have seen a good deal of New Zealand mutton sold in competition with Argentine in different parts of Africa, and the earlier shipments were found to be rather heavy and too fat. However, the latter shipments arriving seem to suit the public better.

From my own practical experience of eating Argentine and New Zealand mutton and lamb, I have become convinced that we must send nice, medium-sized, plump sheep, not too fat, and, above all, have them well dressed and properly covered in cotton scrim and canvas, and every attention should be paid to landing the shipments according to contract, at least as near as possible.

BEEF TONGUES.

New Zealand tongues which I have examined in Africa are not what they should be; the tongues when opened up are found to be out of shape, long, flabby, and discoloured. The bulk of the samples which I saw were also packed in rough, untidy cases, much too long for the tongues. On the other hand the Argentine tongues are packed in neat, nicely dressed, and branded cases. The tongues also have the appearance of being chilled while in the natural form, after which they

are packed in cases to fit the tongues; the chilling of the tongues and packing in neat cases does not permit of their becoming discoloured, or admit of their becoming long, flabby, and out of shape before they are frozen. The tongues which I saw packed in this way opened up in fine condition, being of the natural colour and shape, and were giving entire satisfaction to customers.

These are points which shippers in New Zealand should pay attention to. When I have an opportunity of examining closely the methods of packing in the Argentine Republic, I may be in a position to offer a few suggestions which will, I hope, be of some value to producers and shippers in New Zealand.

Kidneys.

In dealing with this part of our trade, no matter how small it may be, I wish to emphasize the fact that I was disgusted with the few small shipments of New Zealand kidneys which I examined in Africa. Some of the shippers in New Zealand may come to the conclusion that my report is one on the lines of finding fault, but I beg to point out that my inquiries and investigations were of a practical nature, and that I am speaking of something which I have seen with my own eyes, and not of what some dealer was able to convince me were the facts.

In the first place I found New Zealand kidneys were sent to Africa in rough, dirty cases, and still worse, some in canvas sacks, being thrown in regardless of size or quality. How, then, I ask, are we to compete with the Argentine with this class of goods, packed in the manner above described? And in the face of the fact that handlers have shown me Argentine kidneys packed in neatly planed cases, with five dozen in each case, all of which are selected and sized before packing, and nearly all the cases are lined with a cheap parchment-paper.

There should be a fairly decent trade in this line if the goods are sent in a proper condition.

Tinned Meats.

In tinned meats I am afraid we do not stand much chance of developing a large trade, or even of getting a good cut-in, against the Americans. They have already practically got control of the bulk of the tinned-meat business in Africa. While the above is true, I may state that I have examined many tins of American tongues, and also a few samples of tongues from Great Britain, and after seeing these tongues and eating some of them, I say most emphatically that the New Zealand sheep's tongues are the finest I have seen or eaten, not only in Africa but in any other part of the world, and I am sure, if we could advertise as the Americans do, and if we were in a position to deliver our tinned sheep's tongues in quantities and at exactly the time the purchasers want them, we should be able to capture a large share of the African trade in this line. In tinned beef, the Armour people and the Australians have such a strong hold that I cannot suggest any way for our even getting a cut-in on anything like a profitable basis to the producers of New Zealand.

Hams and Bacon.

The great trouble with this part of our trade with Africa seems to be in the fact that purchasers cannot get the goods in New Zealand. One dealer in Cape Town informed me that he was prepared to place orders for almost any quantity of New Zealand hams and light bacon at 1d. per pound more than they were paying for Canadian, American, and English goods. Every man whom I met who had handled New Zealand hams and bacon spoke in the highest terms of its fine quality. Nearly all merchants prefer the light and medium-sized hams. I hope our New Zealand farmers will soon wake up to the importance of growing more pork. In such a great butter-making country as New Zealand, where skim-milk is in abundance almost all over the colony, every dairy-farmer should be raising and fattening pigs on the lines on which it is done amongst dairymen in Denmark.

We have also many other facilities for growing pork in New Zealand apart from the dairy industry. The fact that clover, rape, tares, vetches, and other suitable green crops for raising pigs on, can be grown with certainity and with very little labour, should make the production of pork a profitable business in the colony.

In Canada a large amount of revenue is derived from the pork industry, and farmers are becoming more alive each year to the fact that there is money in the business.

Poultry.

The same may be said of our poultry trade with Africa as may be said of our hams and bacon—namely, that the purchasers cannot get enough of it. A number of dealers informed me that they were delighted with the excellent quality of New Zealand poultry, and were anxious to secure regular shipments, but that the agents were not able to fill the orders.

When in Cape Town I had the pleasure of examining some consignments of Russian poultry, and also a few lots from Canada and England. The Russian birds were much inferior to the Canadian and English. The Russian birds were dark in the flesh and nearly all had black legs, which latter is an objection. On the other hand, the Canadian and English poultry were plump, and the meat was of a lighter colour, and nearly all the birds had smooth, bright-coloured legs.

Fish.

It may be asked by New-Zealanders what Kinsella knows about fish? In the first place I must point out that I was born on the banks of a great fishing-stream in Canada called Grey's Creek, where we, when only infants, caught many different varieties of fish. I have also had some experience in catching those splendid rock-fish—pickerel, perch, pike, &c., which are so well known to the British people and which are caught in such large numbers in the beautiful cold fresh waters of the St. Lawrence River.

My experience in New Zealand and Africa has, however, been more from a consuming standpoint, and I think there cannot be any more convincing argument than that of practical experience—that is, by eating the fish both fresh and after being frozen. New Zealand flounders, blue-

cod, pickerel, and whitebait are perhaps amongst the finest varieties of fish I have ever eaten. Flounders and whitebait when caught fresh in New Zealand and properly cooked are, I think, the finest fish in the world.

While the above is true, I am afraid New Zealand will not be able to do much with Africa in the fish trade, unless it is with blue-cod and tinned whitebait. During my eight months' residence and travelling in Africa, I was informed by many dealers, including the Cape Fishery Company, who have branches in Johannesburg and Pretoria, that the majority of New Zealand fish were unsuitable for the African markets. The reason given was that they were too dry after being cooked and also seemed to be void of flavour.

While in Durban at the beginning of January I discussed this question with Mr. Gow, our Trade Representative. We examined New Zealand fish in the cold-storages, and in order to prove the correctness of the statements above referred to, Mr. Gow and myself secured a few nice frozen flounders and a blue-cod, and had them defrosted and properly cooked in New Zealand style by an Australian lady. My reason for being anxious to do this was that I am always after practical tests. After having the fish cooked and a trial of eating them, both Mr. Gow and myself were in a position to speak authentically on the question. We found that the flounders through the freezing and defrosting process had lost nearly all that natural flavour so characteristic of them when eaten in New Zealand; besides, we found them dry and chippy. The blue-cod, on the other hand, seemed to have retained its flavour much better, and, in my opinion, the latter fish would find a market in Africa. With reference to whitebait, I would advise trial-shipments being made in tins.

Rabbits.

I had the pleasure of examining some New Zealand rabbits in the freezing-works at Durban and Cape Town. I also saw a few samples up-country at Johannesburg and Pretoria, and have eaten New Zealand rabbits after being frozen and defrosted, and I am glad to be able to say that they were very fine in quality, and most people whom I came in contact with who had had any experience with New Zealand rabbits spoke well of their superior quality.

I would like to point out to New Zealand shippers that it is equally important for them to send their goods to Africa in neat cases as it is in sending them to Great Britain. I would recommend that all rabbits be carefully selected, sized, and graded, after which they should be carefully packed in neat cases. Each case should be neatly branded; the words "New Zealand" should be on the case in large letters.

Butter.

I do not wish to find fault all round about our methods of shipping and the quality of our produce, but I do feel as though I am placing some hard cold facts before the butter producers and dealers of New Zealand which should at least receive their careful consideration. Before leaving New Zealand last year I was strongly opposed to the question of holding large quantities of butter in the cold-storages through the winter with a view to catching a higher market in the spring. My reason for this was that, in all my experience in other countries where perishable produce is held for any great length of time, I have found that although a larger price may be obtained, the question of deterioration, as a rule, cuts badly against the reputation of such produce, no matter what market it is sold on.

At the end of April last, just before leaving New Zealand, I made inquiries at the various freezing-works, and found that about a hundred and twenty thousand boxes of butter were stored in the colony. I at that time made recommendations personally and through the Press of the colony to a number of the owners to ship the butter while new to the British markets. This could have been done at a profitable price to the producers. Instead of that being done, the butter was held through the winter and a good deal of it shipped to Africa.

While on duty for the Transvaal Government, and when travelling about the country, I regretted to find some of our best brands on the market in an old-state condition, and although at that time I had no intention whatever of returning to New Zealand, I wrote the Rt. Hon. Mr. Seddon an unsolicited letter with reference to our meat and butter trade. Later on, when my re-engagement with the New Zealand Government took place, I, in company with Mr. Gow, made some investigations at Durban; I also examined a number of our brands of butter at Cape Town and Port Elizabeth in the month of January.

The quality of the majority of butters which I examined had deteriorated very much, and this could not be wondered at when I say that I saw some of the same butter before leaving New Zealand eight and nine months before I examined it in Africa. One brand which has a good reputation in New Zealand I found according to the date-marks to be twelve months old; of course, the handlers in Africa rarely look for date-marks, although they do pay attention to our grade-marks, and are most particular to see that the goods bear the Government's first-grade stamp. The fact that the dealers and consumers in Africa do not know the age of our butter naturally causes them to compare our old butter on the same counters with Argentine fresh. The latter butter would not be in the same street with ours so far as quality is concerned if our goods were laid down on the markets in a fairly fresh condition, or rather at short notice. As early as November I had the pleasure of examining some of New Zealand's stored butter in Cape Town in company with Mr. Gow, our Trade Commissioner. I at that time made the statement to him that it was to be regretted that New Zealand producers saw fit to hold such well-made butter until it considerably aged, and then to place it on a practically new market which should have a large outlet for our produce in future, and to which market we should send only the choicest quality.

Before leaving Durban in January, Mr. Gow informed me that he had heard very bad reports about a well-known New Zealand brand of butter which was handled by Reiners, Von Laers, and Co. On my way from Durban to Cape Town I was able to get ashore at Port Elizabeth for a few hours, where I examined the butter in question. Unfortunately for the reputation of New Zealand butter, the agents had quite a stock of this butter on hand at the time of my visit, and they

informed me that almost every package they had sent out lately to up-country towns was being returned on the score of inferior quality. I, however, did not wonder much at this statement after examining the boxes, for I found according to the date-marks that the butter was then about ten months old. I carefully examined a number of packages of the butter, and found it had deteriorated very much in quality, although the butter was well made in the manufacturing process. The butter possessed a stale, or rather tallowy, flavour. In fact, some of it could be termed rancid, and hardly fit for cooking purposes. I at that time advised the Department of Industries and Commerce of this brand of butter, and asked that the Dairying Division be instructed to bring the matter under the notice of the company or manufacturers.

If New Zealand producers do not get alive to the fact that it is just as important for them to send the very finest quality of butter, and that while new or in a fairly fresh condition, to the African markets, as it is to send it in the latter condition to Great Britain, they will, in my opinion, have no hope of competing successfully against the Argentine. I was informed by dealers in Cape Town and Durban that they had to pay more money for New Zealand butter than they were purchasing Argentine for, and that the quality of the practically fresh Argentine butter, which was being laid down in Africa in eighteen to twenty days, was preferred to our stored goods. A quantity of the latter was still held in the freezing-works, and was being placed on the markets in competition with the Argentine.

The only chance we have in competing with the Argentine is on the score of better quality, and I am confident that if our producers aim to get their butter on the African markets soon after it is made, the Argentine people cannot touch us so far as quality is concerned. I have examined a great deal of Argentine butter, and eaten it on the tables in various towns and cities in the Transvaal, Cape Colony, and Natal, and there are two things only in its favour: it is paler in colour than ours, which is preferred; it is also laid down fresher. On the other hand, the Argentine butter has the appearance of being poorly made; it has a very greasy appearance, almost resembling lard; it has no character, is almost void of texture, and I am confident if it was put to the test which some of our butter has had to undergo as described above—that is, if it was held for a whole year and exposed to all temperatures—it would, in my opinion, as an old experienced butter-maker, not be fit for anything else than axle-grease at the end of that time.

Although New Zealand butter has had hard luck on the African markets for the reasons above explained, it is a pleasure to a practical man to note how well it is made, the body, and texture. The general get-up, including boxes, branding, and finish, I do not think can be beaten in any part of the world.

I am pleased to be able to state that some of the later shipments of New Zealand's new season's make of butter which I examined in Africa opened up in excellent condition, and, as I have just explained, if our people would endeavour to send such butters to Africa, I reckon we are sure to get a good look-in against all competitors.

Amongst the brands which I examined, and which could be called choice (and I say this without in any way advertising them, but merely giving them credit for assisting in building up a reputation for New Zealand butter as a whole), was "Bell Block" (Anchor Dairy Association), "Eltham," "Taieri and Peninsula" (Dunedin), "Defiance," and "Pakeha."

Owing to the continued prevalence of disease in stock, and the slow manner in which the land is being settled with good British settlers in many parts of Africa, I have become convinced that there will be a large outlet for our dairy-produce for years to come. It will take a few years for Africa to produce enough milk to fill the requirements of the cities and towns alone, or, in other words, to produce fresh milk enough to take the place of the enormous quantities of imported condensed milk consumed at the present time.

One point which I have omitted is the question of wiring all butter-boxes for the African markets. This is very important. The timber used for some of the boxes is also too light to stand the rough handling.

Cheese.

So far as cheese is concerned, we do very little business with Africa at the present time, and unless we adopt some better system of laying our cheese down in a sounder condition there is very little hope of our establishing anything like a decent connection on her markets. My investigations proved that the few shipments of cheese sent by us to Africa are landed on the wharfs in Cape Town and Durban in what might be termed a disgraceful condition. A large percentage of the cases were found to be in a filthy condition, and many of them broken. What is worse still is the fact that the cheese itself is seriously injured in quality during transit by being carried in the warm holds of the ships in what certainly is a hot voyage. The cheese is roughly carried as ordinary cargo, and the facilities for handling, &c., are very much inferior to the methods adopted for our British shipments. The above being true, it is only reasonable to expect that the cheese will suffer serious deterioration.

This rough treatment and severe heating of the cheese starts the butter-fat, and causes the curd to become dry and chippy, or in other words, crumbly. It seems also to develop a strong acid taste, and the cheese goes off flavour very quickly. Our cheese that goes to Great Britain which is carried in cool-chambers open up in fine condition, and instead of being dry and flinty it breaks down neatly and shows a proper texture; besides in the majority of cases it retains its flavour for a much longer period than when it is exposed to a high temperature. It is also free from cracks, and does not show butter-oil on the surface, as do our African shipments.

Recommendations.

Where there is a demand for large cheese, or, rather, when cheeses are sent to Africa weighing 65 lb. to 70 lb., the cases should be made of fairly heavy dressed timber, and they should be wired or strongly bound with $\frac{5}{8}$ in. galvanised hoop-iron, so as to stand the rough treatment which they are subject to on the steamers and wharfs. I would also advise having the battens

slightly closer together than for the British shipments, so as to prevent rats from getting access to the cheese through the cracks. This latter is not so necessary when cheese is carried in cool-chambers and when it is stored in the freezing-chambers on arrival at Durban and Cape Town.

The medium cheese weighing about 30 lb. to 35 lb. is in better demand in Africa than the large sizes. The bulk of small shipments which I examined there were packed in a fairly satisfactory manner, although some of the timber, as in the case of the large cheese, was too light, and the cases were not wired or hooped.

From all my experience in Africa I found that the most preferable size of a Cheddar cheese we can send to that market is the loaf, weighing about 8 lb. Loaf-cheese should be packed in closely made cases, and the timber should be dressed. The cases should also be plainly and neatly branded. There should be thin boards about ¼ in. thick in the form of small partitions between each cheese.

In hot climates it is important that the cheeses should not be allowed to touch each other; this causes friction of the two surfaces, and tends to start the butter-fat, and makes the cheese flatten on the sides, which pressure afterwards starts decay. Besides, if the small cheeses are divided in the cases they will also be found to open up freer from mould. A better manner still of packing loaf-cheese for the hot climates of South Africa is to put them up in small cases of six cheeses each, packed in dry sawdust and coarse salt.

Even yet a great quantity of goods is packed on mules in the up-country districts, and that very often in the roasting sun. The latter being so, it is not wise to put more than six cheeses in a case, which makes the handling and packing on the mules much more convenient.

During the time the war was on it will be remembered that a few trial-shipments of loaf-cheese were sent to Africa by the Agricultural Department at the request of the Agency-General. These were packed in small cases in sawdust and salt, and it was reported that the cheese opened up in splendid condition, and gave entire satisfaction in Africa. The cases in which these cheeses were shipped cost a little more money than the ordinary loaf-cheese case, for the reason that I had them specially made with two of the sides ventilated by boring a number of small holes in the boards, and inside on the ventilated ends I had placed a rough canvas scrim which kept the sawdust from running out. The two ventilated ends being opposite each other permits of a sort of current of air passing through. If it is cold air, it helps to preserve the cheese; if hot air, it may affect the cheese a little, but it has also a good effect in the carriage of the cheese, particularly where they are packed by mules in hot climates, for the reason that the warm air dries the sawdust and prevents dampness and mould. Although the extra expense of the cases and the dry sawdust and salt is much greater than that of packing the cheese in the ordinary way, I am of the opinion that dealers in Africa will pay a much higher price for goods put up in this way, for the reason that they are anxious to give their customers a good article, or, in other words, something they can sell and something the consumer will eat. If we aim to do this, we are not only opening up a trade for our produce, but we are building up a reputation on the score of good quality.

If we continue to ship cheese to Africa, I would advise a slight change in the manufacturing process. I am convinced that we should make a slightly firmer cheese, in order that it may stand the carriage over and the hot climate of Africa. We need not necessarily hand-stir too much of the moisture out of the curd, but a shade more hand-stirring and a little higher cooking or heating, and the addition of, say, ½ lb. to ¾ lb. more salt to each 100 lb. of curd will be an advantage.

The most important recommendation I have to make is that of some arrangement being made with the shipping companies to have cool-chambers fitted on the direct steamers which carry our produce, whereby the cheese can be kept during the voyage at a temperature of between 45 and 50 degrees Fahr.

I maintain that if we are seeking for trade on a new market we should aim to land our cheese in the very best possible condition, no matter how small the quantity be at the beginning of such trade.

I have, &c.,
J. A. Kinsella.

APPENDIX C.

Sir,— Westminster Chambers, 13, Victoria Street, London, S.W., 15th April, 1904.

I have the honour to submit a short report concerning the work carried on by this Department during the past twelve months. As during that period regular reports on matters affecting the New Zealand produce trade in this country have been made to you and forwarded to the Department of Industries and Commerce, Wellington, by each San Francisco mail, it is unnecessary now to submit a report which might be merely a repetition of what has been already written.

In the reports referred to—fifty-one in number—the usual subjects of interest to producers in the colony have been fully treated, and attention has further been given to one or two lines of produce not formerly dealt with. General reports were made on the following subjects: Dairy-produce (butter and cheese), with special reference to markets and distribution in this country; frozen meat (mutton, lamb, and beef), shipments, discharge, and distribution; fruit-pulp, prospects of sale, processes, &c.; hemp, general market and condition; cocksfoot-seed; hops; fruit-shipments. Special reports treated on: Co-operative wholesale societies and distribution of New Zealand meat in Great Britain; direct shipments from New Zealand to British west-coast ports; seizure of sulphurised raspberry-pulp by Health Officer at docks, London; claims on damaged cheese ex s.s. "Papanui," and legal action regarding same; New Zealand butter at London Dairy-show; Baverstock's elevator and conveyer; the London trade and hemp-grading; Ivel agricultural motor; direct trade between New Zealand and Chile; Central Chamber of Agriculture and meat-marking; amendments to rules of Home and Foreign Produce Exchange as affecting New Zealand dairy-produce; fraudulent supply of meat under army contract.

The cablegrams sent each week to the Department of Industries and Commerce have during the year been somewhat amplified, the particulars given being fuller than formerly, and information concerning one or two new lines being added. These cables have given market details of mutton, lamb, beef, butter, cheese, hemp, and cooksfoot-seed regularly, while information regarding other lines such as fruit-pulp and hops have been included at intervals. Stocks of New Zealand hemp on hand, and quantities of Argentine mutton, lamb, and butter imported into the United Kingdom have also been cabled each month. During the wool-sales the prices and state of the market here have been supplied, and recently prices for Bradford cops have also been quoted at periodical intervals. Arrangements are now being made to supply regular quotations and particulars for kauri-gum.

The correspondence conducted by this Department has consisted mainly of replies to inquiries ranging widely over the field of New Zealand produce and commerce. In several instances newspaper and other misstatements regarding the colony's production, capabilities, &c., have been replied to.

The methods of inspection of New Zealand produce adopted in the previous year have been continued. Regular visits were made to the docks, and special attention was paid, on the arrival there of vessels, to the refrigerated produce. Extracts were made from the refrigerating logs showing the temperatures, &c., maintained during the voyage, these being supplied in reports to Wellington. Dairy-produce was also inspected in merchants' warehouses. Regular visits were made to Smithfield, and close touch was kept with the state of that market and with the distribution of New Zealand meat throughout the country. Opportunity was taken on several occasions of inspecting parcels of hemp that had been submitted to arbitration for quality, and information concerning this was sent to the colony with useful results.

During the year the managing bodies of the English and Scottish co-operative wholesale societies were interviewed at Manchester and Glasgow respectively in connection with proposals that these societies should enter into relations with the colony for the distribution of New Zealand meat.

Among sundry duties may be mentioned attendance at various shows, exhibitions, conferences, and meetings connected with producing and trade interests; interviews with business callers and visitors; and the regular perusal of a wide range of trade journals. In December a lecture was given on "Agricultural New Zealand" at the South-eastern Agricultural College, Wye, Kent, the college authorities having made a request to that effect.

During the year two steamers from New Zealand landed produce at west-coast ports. In July the s.s. "Rangatira," after discharging the London portion of her cargo, took a shipment of meat and oats to Cardiff (Barry Docks); and in October the s.s. "Rakaia" came direct to Liverpool with shipments of frozen rabbits, oats, butter, and sundry other lines, afterwards proceeding on to London. Full reports concerning these shipments, treating of the discharge, handling, and disposal of the produce, were made at the time and forwarded to Wellington. Only by the s.s. "Rangatira" was there any New Zealand mutton or lamb delivered at the ports mentioned. In regard to the latter shipment it is to be regretted that a considerable part of the same should have been purchased by River Plate meat companies for their trade. Those interested in the New Zealand meat trade in this country considered that the value of the direct shipment was very much discounted by this. The fact of River Plate concerns having to do the distributing of New Zealand meat was strongly commented on, it being considered that such a system of business did the New-Zealanders no credit. For the visit of the s.s. "Rakaia" to Liverpool the rabbit trade was mainly responsible, as explained in the report mentioned.

For a considerable portion of the year I was absent from London. Having received instructions to proceed to the colony, I left here in the second week in May, and arrived at Wellington on the 17th June. For some time I was occupied in Wellington in giving evidence before the Extension of Commerce Committee, which was making investigations concerning the distribution of New Zealand meat in this country. At Nelson, Motueka, and Christchurch I met the fruit-growers and delivered addresses on "Fruit and Fruit-pulp on the British Market." Addresses were given by me at various centres in both the South and North Islands on "The Distribution of New Zealand Meat in Great Britain." I was also able to pay a hurried visit to the Wairarapa and Taranaki dairying districts, and to visit many of the dairy factories there.

The opportunities I had in the various centres visited by me of meeting and discussing generally with directors and others matters relating to the New Zealand produce trade has been of the greatest value to me in the conduct of the Department here. In being able to give information and to answer questions directly to persons interested, I felt also that I was getting more closely in touch than I had hitherto done with those whose interests I to a considerable extent represent here.

Owing to the time at my disposal in the colony being limited, it was impossible for me to visit all centres or to accept many of the kind invitations sent me to give addresses on produce matters. I regret that I was unable to visit the dairy factories in the South Island, and to meet the directors of them, as I had intended doing.

During my absence the work here was carried on by Mr. R. H. Hooper, who performed the duties intrusted to him in a highly satisfactory manner. The reports made by him and the cables forwarded were complete and full of valuable information. It was very pleasing on my return to find that the work of the Department had been kept by him fully up to date, so that I was able without any loss of time to again take up the threads of my work.

I have, &c.,

H. C. Cameron,

Produce Commissioner.

The Agent-General for New Zealand, London.

REPORT ON VISIT TO THE ARGENTINE REPUBLIC.

SIR,— Agent-General's Office, London 4th June, 1904.

I have the honour to submit herewith a brief report of my recent investigations in connection with agriculture, dairying, and other commercial enterprises in the Argentine Republic.

I have, &c.,

J. A. KINSELLA,

Dairy Commissioner.

The Hon. Sir J. G. Ward, K.C.M.G.,
Minister of Industries and Commerce, Wellington, New Zealand.

INTRODUCTION.

IN making a general report on the agricultural and pastoral industries of that great, or, I may say, vast prairie country, the Argentine Republic, I feel as though I had had only a mere glimpse over her extensive lands, owned and controlled by a great Spanish race. First of all, I may point out that in order to permit of a thorough, or, rather, a general and practical knowledge of this vast country being obtained, it would be necessary for one to remain in the country for at least a year and a half or two years; even then it would require almost constant travelling and very careful observations and inquiries in order to become acquainted with the details connected with farming, climates, &c. I therefore submit that it would not be reasonable to expect that I should write all of this brief report from actual observations during my stay in the republic. I have, however, travelled a great deal while there, and, in my opinion, no better means could be adopted of obtaining sound information than of practical observations throughout such a vast agricultural country.

When one gets into the dairying and wheat districts and has personal chats and discussions with the people who are actually engaged on the land, he is, in my opinion, in a position to get more reliable information than could be obtained from any other source. Although I found it difficult while in the country districts to carry on a conversation with the native Spanish people, owing to my not being acquainted with their language, yet I was able to obtain a good deal of practical information with regard to farming, &c., in the country.

Travelling by rail is rather expensive in the Argentine, and while I was fortunate in obtaining a few free passes over the railways, my expenses, on the other hand, ran into a fairly large sum. I endeavoured, however, as far as possible to keep down expenses—at least, unnecessary expenses.

Without going into history it may be well for me to point out that the Argentine Republic is a cosmopolitan country, which has been populated largely from Europe. The country had in the earlier days the task of supplanting savagery by civilisation; in the end, however, the savage races had to give way to the Caucasian races, or otherwise be annihilated by them. The spirit which animated the Latin races after the discovery of North America by Columbus led to the formation of many exploring parties in Spain. Amongst the first to explore the country—now the Argentine Republic—was Don Juan Diaz de Solis. He first struck a large river, which he named the "Sweet Sea," or "Navara Dulac," which is now known as the great river La Plata or River Plate. After landing he was killed by the Red Indians. This took place as far back as 1515. Many other explorers met with a similar fate, until the great General San Martin finally suppressed the Indians, and it was only then that things settled down on a sound basis in the Argentine Republic. In what is known as the Avenue de Mayo, in front of the National Government Buildings in the City of Buenos Aires, stands a fine statue of that great general, whose name will always be remembered by all Argentinos.

The President of the Republic in office at the time of my visit was General Roca. When I was in the Argentine they were on the eve of a new election, which would be for the purpose of determining who would be their next President. I was told that the old President under their laws cannot be re-elected by the people; it therefore follows that an entirely new President must be appointed by the voice of the people. It was in 1880 that General Roca was first elected President. After six years of office he was followed by Don Miguel Juarez Celman, who resigned in 1890. After a great revolution Dr. Carlos Pilegrini became President in 1892. Dr. Lewis Saenz Pena was elected President, after which, in 1890, Dr. Jose Euriburn was appointed. In October of that year General Roca again became President. During my short stay in the Argentine I heard so many nice things from all quarters with reference to General Roca's admirable qualities and his great administrative powers that I have much pleasure in introducing his name to the public of New Zealand. The fact cannot be got away from that under General Roca's wise administration the Argentine Republic had gone ahead in leaps and bounds, and has, generally speaking, prospered. And by his determined purpose to maintain peace, the impending war with Chili has been averted, and it may be fairly said that permanent peace has been established in the country.

The Argentine is a protectionist country; its resources for conducting the Government are largely raised from the Customs duties. In 1899 the imports into the country subject to duty were $102,080,738 gold. This statement may be wondered at, but when I say that the Argentine has over 120,000,000 sheep and the United States has only about 62,000,000, you can arrive at your own conclusion on this point. Exports from Argentina for 1902 and the first quarter of 1903 were $220,000,000 gold, and imports $100,000,000 gold, making a grand total for foreign trade of $320,000,000 gold, equivalent to £64,000,000. Nearly all products produced and manufactured in the Argentine are not heavily taxed when exported to Britain or her colonies, whereas, on the other hand, nearly everything she imports from foreign countries is heavily taxed. This is on similar lines to the system in vogue—the retaliation system—which has long since been adopted in the United States of America; whereas in the case of goods shipped from the Argentine to Great Britain the open-door policy still exists. Without for a moment thinking of touching on political matters, I think I could safely suggest that the sooner Mr. Chamberlain's scheme of preferential

tariffs is adopted for both Great Britain and her colonies the better. I am glad indeed to note that our Prime Minister, the Rt. Hon. Richard Seddon, has been one of the first to move in the direction of taxing foreign goods shipped into New Zealand, and of gaining a preference for some of that colony's products which are shipped to British markets.

Dairying in the Argentine.

In dealing with dairying in the Argentine Republic, I propose to speak more on the practical side of the question, for the reason that most New-Zealanders interested in this industry have already become acquainted with the theoretical part of what the Argentine is doing in this branch of agriculture, through the Australasian agricultural papers.

In the Argentine Republic only a very few years ago the dairy industry had practically no existence. The milk of the millions of cows which were in the country was utilised for no other purpose than for raising the calves. It must, however, be remembered that the Argentinos have always been producers of meat and hides, and even in the early days of the country they bred many good beef cattle.

At the present day we find the milk-supply business of many of the small towns, and even the suburbs of the large cities, such as Buenos Aires, carried on in a very primitive fashion. The milk for city and town supply is in some cases brought in in cans on horseback, the cans being slung at each side of the horse, and the motion of the horse causes the milk to be churned, thereby producing a soft butter. This butter is collected or gathered and sold to the clients; and the milk, which can hardly be termed buttermilk, is also sold at a fair price, owing to the large percentage of fat still left in it. Many of the (native) Spanish people, strange to say, yet prefer this mushy soft butter to a good article produced in a butter-factory.

Another system of reaching the city milk-purchaser with what they term a pure milk is by driving the cows around the streets and milking them into small graduating measures or tin mugs in front of the houses. The cow is very often stopped a dozen times, or at least the process is carried out in front of a dozen purchaser's premises. The calf must always be tied to the leg of the cow, otherwise the cow will not give down her milk—so the owner of the cow claims.

All this, however, is being gradually done away with, particularly in the large City of Buenos Aires. In the latter city you will now find many fine places for drinking milk, milk shakes, &c. These places, as a rule, are painted white inside and are kept scrupulously clean. The milk handled by the milk-shops is sent in from the large estancias (farms) in the country. They have also a few factories where milk is pasteurised and sterilised for city supply; and there is at the present time a large company being formed, and an enormous building is being erected for the purpose of pasteurising and sterilising milk, which will serve nearly the whole of the City of Buenos Aires. I was also informed that it is proposed to manufacture maternised milk.

Before dealing with the actual butter-making part of the business, I shall describe roughly the methods of milking which prevail in most milking districts of the Argentine. The herds, large or small, are driven into what may be called milking-yards, which are fenced with wire, generally a special woven wire manufactured in the republic. Nearly all of the dairy-cows in that great republic are milked with the calf by the mother's side; as a rule, it is tied to the leg of the cow. Although the milking-yards are not very large, you will very often find large herds of cows milked in them. The animals are milked for a great length of time in the same yards, until 8 in. or 10 in. of manure collects. They are then changed to another place, and this manure is allowed to dry, after which it is cut into squares and stacked up like wood, and utilised for fuel. This system is carried on in districts where wood is scarce and coal dear. As can be imagined, after a heavy rainstorm, it is not a very pleasant business to milk cows in a milking-yard such as described above. Of course, at a few of the "estancias" they have fairly decent places for milking.

There are two systems of milking; at least, two of them I have seen personally, and these systems seem to prevail nearly all over the milking districts of the Argentine. The idea seems to prevail amongst the native people that if the calf is taken away from the mother she will not give down her milk, and will, therefore, be rendered useless as a milker. I was astonished to find the people of the Argentine carrying on the milking business in this crude manner. When in Africa, I was not surprised to see the Kaffirs in Natal milking their cows in nearly the same manner as the majority of the cows in the Argentine are milked. The Kaffirs in Natal firmly believe that no cow will give milk unless the calf is with her at the time the milking takes place. The slight difference between the Kaffir system and that which is in vogue in the Argentine is that the Kaffir allows the calf to suck whenever he can get a chance during the process of milking. As stated above there are two systems of milking in the Argentine. One is to allow the calf to suck a portion of the milk from the mother before the operator begins the milking process. After the calf has taken his share of the milk, he is tied to the mother out of reach of the udder. The other system, and one which is generally adopted, is to milk about two-thirds of the milk from the cow, and then to unfasten the calf and allow it to suck the balance. This latter portion of the milk, which, as a rule, would be about one-third of the milking, and which also contains the largest amount of butter-fat, the calf gets. I am quite sure that if this portion of the milk of the bulk of the Argentine cows was tested, it would be found to contain 5½ to 7 per cent. of butter-fat. Butter-fat at 10d. per pound is pretty expensive feed for raising calves, particularly where a farmer is aiming to dairy for a profit.

The milking is done largely throughout the dairying districts by Bastous; very few of the native "Spanish" people care to indulge in this kind of labour. The Bastous, I am informed, emanated from the southern part of France. They are said to be a very industrious people, and make first-class milking-hands. They seem a contented people, and although they do not have the same facilities for entertaining as the people in the cities do, they always seem to have their own fun on particular holidays. The homes of the Bastous on the farms or estancias are not very

elaborate; any sort of a rough hut of slabs or sods, covered with a tin or thatched roof, answers the purpose. In such a comparatively mild climate as the Argentine they do not need nearly as much protection as we do in the cattle districts of our country, particularly in the South Island of New Zealand. It can, therefore, easily be imagined what an advantage a country like the Argentine, as a dairying country, has even over Canada, United States, and Russia: abundance of grass and water and sunshine almost the year round.

In the Argentine, silos for the curing of green fodder are a thing almost unknown; there are a few, but they can hardly be called "silos." Where the cattle are fed on any fodder, it is principally alfalfa or full-grown maize. The maize is rarely ever cut green and fed to the cattle, as is done in other countries. In some cases the maize is fed to the cows in the ear. In most dairying districts of the Argentine it is, however, not necessary to provide much, if any, winter food for the cattle, grass being in abundance the winter through. I think the Argentine is the finest grass country in the world. This, together with the beautiful water, which can be obtained nearly all over the country at a reasonable depth, makes stock-growing cheap and easy. In many districts farmers do not require to sink more than 15 ft. to 20 ft. in order to strike a good supply of water.

Of course, in some places it is necessary to sink artesian wells. Where this is done the water-supply is never-failing. It is also claimed by experts that the water-supply, generally speaking, throughout the Argentine is a very pure one. This may be accounted for in some of the districts which I visited by the fact that the water in many wells filters through sand-beds—that is, after you go down a certain depth. Take it all round, I think the Argentine has the clearest and probably the best water for butter-making purposes that it is possible to find in any country.

The following is a list of the names of the butter-factories in the Argentine and their respective daily outputs at the time of my visit at the end of March, 1904:—

Name of Factory and Situation.	Daily Output in Pounds.
La Union Argentina, Buenos Aires City	30,837
La Tanilera, Tandil, on the Great Southern Railway	5,506
Progresso, Buenos Aires City	5,506
Co-operacion de Cremerias Buenos Aires City	8,149
La Martona, Vicenete Casares, on the Great Southern Railway ...	4,405
La Union Gaudarense, Gaudara, on the Great Southern Railway ...	4,184
La Delicia, Florencio Varela, on the Great Southern Railway... ...	1,762
La Vritel, Chascomus, on the Great Southern Railway	1,541
La Celia, Navarro, on the Great Southern Railway	1,321
Molino del Oeste, Buenos Aires	4,405
Lagranga Blanca, Marina, and other small factories in Buenos Aires Province and the other provinces	7,709

I give the above information so that our dairymen may know the size or outputs of the Argentine factories. For these statistics I am indebted to Señor J. B. Rospide, representative of the newspaper *Haritza*.

As I mentioned at the outset, dairying in the Argentine is practically a new industry. The first separators were introduced in the years 1890 and 1891. The butter exported from the Argentine in 1891 was 1,320 kilos. Previous to 1901, salted butter in tins was an article of import into the Argentine. In 1895, 400 tons was exported; in 1901, 1,500 tons; and in 1902, over 4,000 tons. According to the latest statistics issued by the Ministry for Agriculture, the export of butter for 1903 was 5,696 tons, an increase over last year of 1,696 tons. The Argentine Year-book draws attention to the fact that if this rate of increase is maintained, an annual export of 50,000 tons may be looked for shortly. It further states that to obtain this it would only be necessary to milk half the available number of cows in the Argentine, which are estimated at nearly twelve millions.

"So important is this industry becoming," says the Argentine Year-book, "it would be a mistake to consider it other than subsidiary and complementary to what must always remain the principal business of the country, the breeding of cattle and sheep for exportation, either as live-stock or through the freezing establishment; its development, in fact, should be regulated in such a manner that the abstraction of butter from the milk may not be permitted to interfere with the life and growth of the young animals on whose weight and quality so much depends." If it were not true that calves of good quality and weight could be raised less than a third cheaper on skim-milk with the addition of pea-meal, ground maize, or linseed-oil cake than they can be produced on butter-fat, I would then say the extract quoted was good advice to the farmers.

Butter-making.

So far as the actual work of butter-making in the Argentine is concerned, the system adopted in most factories is somewhat different from ours in New Zealand. The bulk of the cream at most factories comes in in what I would call an overripe condition—that is, for the butter-maker to have control over it, or, in other words, for him to be able to ripen it uniformly with a good starter.

The fact of the cream arriving at the factories in this condition may be accounted for by the following reasons: First, dirty milking-yards; second, dirty milkers; third, dirty, rusty cans. And the most dangerous source of infection, in my opinion, is the carrying of milk and cream long distances by rail in these rusty cans. A great deal of the milk is brought to the creameries in small cans on horseback. Large quantities of cream are also brought to the railway-stations from the small estancias or farms in this same manner. It is an astonishing thing to see a native coming to a small siding or station with six or eight cans of cream slung from each side of the horse's back. They also very often take double that number of empty cans back with them.

Very few saddles are used by the natives in the Argentine. They have a sort of home-made arrangement which is composed of heavy bands around the body of the horse, and the top of which is made of strong leather, two rolls of some material covered with leather are faced on each side of the centre of the horse's back, and a large hook on one side, which permits of hitching the horse to a load of any kind by means of a chain or rope—a very handy arrangement indeed.

New Zealand dairymen will understand that this is not a good system of conveying milk or cream to a butter-factory or skimming-station after reading my remarks on the methods adopted for churning butter for city and suburb supply.

Now, getting back to the butter-making process again: I found that the grading of cream would hardly be possible, for the reason that you get so many hundred different qualities of cream at all degrees of ripeness, particularly at a large factory like La Union, where they turn out in the flush of the season about 20 tons of butter per day, and where they get the cream in from over fifty separating stations, mostly by rail, besides the many small estancias that forward cream direct. The grading and ripening of cream with a starter in the Argentine is therefore not practised very much. In most of the factories, with the exception of two or three, the cream is allowed to ripen on what might be called the self- or chance-ripening system. Most of the factories are substantially built and fairly well equipped. The large factories have any amount of freezing-capacity. The chilling of the cream is done by means of movable coils, through which cold water or brine is circulated. The vats are in nearly every case shallow, and the coils are worked up and down in the vat perpendicularly, not, like most of ours, on the horizontal principle. Generally speaking, the cream is not churned at nearly as low a temperature as we work on in New Zealand, the result being loss of fat in the buttermilk and injury to the texture of the butter in the working process. Most of the Argentine butter which I examined, both in the country and on the African markets, had the appearance of being overworked, and I was thoroughly convinced of that point after watching the process in some of the large factories. The Argentine butter is much paler in colour than the New Zealand article. This may be accounted for partly by the food eaten by the cattle, and perhaps the breed of cow may have something to do with it. Then, also, the large amount of friction given the butter in the working process tends to grease it, and make it, as it were, have the appearance of hog's lard. A good deal of the butter exported is not salted. This latter is even paler than the salted butter. I have, of course, always found from experience that salt adds a little colour to the butter. While in Cape Town and Durban I learned from a number of dealers that the Argentine pale butter was very well thought of. It, however, only required a glance to see that New Zealand butter was the finest-made butter sent into Africa, but the mistake was that they did not get it there while it was newer.

I am in hopes that we may by experimental work get some method of reducing the high colour in our butter without ruining the body and texture, as the British expert buyer thinks so much of the latter. My advice to New Zealand producers in the past has been rather against the manufacture of unsalted butter in large quantities for export, on the grounds of the greater liability of deterioration in transit during the long voyage, as compared with fifteen days from the Argentine or a few days from Denmark. The Argentine is differently situated and can afford to take the risk, for the reason that they can land their butter in London in such a short time compared with the time it takes our butter to reach the British consumer. This month, April, there is an arrangement being entered into which will enable the producers in the Argentine to land their butter in London in fifteen days, so when they get such a quick fortnightly service as this they can lay their butter down in the Old Country in a fairly fresh condition as compared with ours. The butter-boxes are not so good in the Argentine, the timber not being so suitable. Like the Canadian boxes, the sides, bottoms, and covers are often in three pieces, tongued and grooved. The Argentine people, however, have paid more attention to the question of making the boxes for the African market of much heavier timber, and also to nailing them better. I commented strongly on this matter when dealing with New Zealand butter shipments in my African report.

During my hurried visit to the Argentine I had the pleasure of visiting two butter-factories controlled by Lovell and Christmas and Mr. Henry Reynolds. The latter manages the business, besides buying from other factories for export. Mr. Reynolds was one of the pioneer dairymen in the Waikato, Auckland Province; he has also the honour to be among the first to start butter-factories on what could be called a good sound factory system in the Argentine. The first factory visited was at Progresso, in the City of Buenos Aires. This factory is quite close to the railway-station, which makes it very convenient for receiving cream. It is equipped with a good plant and plenty of freezing-power. At the time of my visit there they were turning out about 5,500 lb. of butter per day.

The other factory controlled by Mr. Reynolds is situated at Tandil, on the Southern Railway. I had the pleasure of spending a few days at this factory along with the manager, Mr. Gerlach, who at one time resided in New Zealand. At the time of my visit this factory was turning out about the same quantity of butter as the Central Factory at Progresso, in Buenos Aires, where the whole of the business is transacted. The factory at Tandil is a fine building, equipped with a good plant. The boiler is of Italian make, 80-horse power, fitted with a fuel-saving condenser, which permits of the water entering the boiler almost at boiling-point. Mr. Reynolds informed me that this boiler was installed at a much lower cost than either an English or American boiler. They have also a very powerful engine and two Linde freezing-machines. Four large churns are placed in a row in the butter-making room. They are of an American make, well known to me, called the "Squeezer." The butter is churned, worked, and salted in the churn. The cream is elevated into shallow vats, where it is cooled down by means of movable coils on the same principle as that in use at the Central Co-operative Factory at Christchurch. Although this factory was turning out less than 3 tons per day at the time of my visit, it has a capacity of 10 or 12 tons per day. In connection with the capacity question, I find the very reverse in the Argentine from what I have experienced in New Zealand—viz., that instead of building the factories too small

to cope with even the second year's business, they build and equip for about four times the first year's capacity, and I believe it pays in the end.

Although they ship the butter regularly to the central factory at Buenos Aires, they have a freezing-chamber capable of storing 2,500 boxes of butter in case of emergency. Although Mr. Reynolds has been in the country for about five years, he does not seem to give his pointers on butter-making away to his opponents. I found the system adopted in his factories more on the lines of New Zealand butter-making. In referring to Mr. Reynolds's business I cannot pass without stating that I am deeply grateful and very much indebted to him for his kindness to me during my stay in the Argentine. Mr. Reynolds did not spare time or money to assist me in gaining information; he was also able to secure passes over one of the railways for me.

The most important factory in the Argentine, and perhaps the largest butter-factory in the world, is La Union Argentina, which is situated in the City of Buenos Aires. The cream comes into this factory from three different provinces—viz., those of Buenos Aires, Santa Fé, and Entre Rios. This factory in the flush of the season turns out about 20 tons of butter per day. At the time of my visit in March they were making close on 16 tons of butter per day. Cream is received from over fifty skimming-stations, besides the large number of estancieros who send their cream in direct to the factory. The skimming-stations are, generally speaking, pretty well equipped, but not properly managed so far as close and careful skimming is concerned. The separators used in the Argentine are of the Alexandra make, the Sharples Tubular, the Baltic, and a very few Radiators. The Alpha De Laval predominates in the Argentine, but so far as I could learn the tubular Sharples machine takes a lot of beating. La Union Factory is fitted out with an enormous amount of steam, engine, and refrigerating power. The freezer is of about 50 tons capacity. The boilers are upwards of 100-horse power. Eight large trunk churns are installed; the churns are practically the same as those in use in New Zealand. The butter in the butter-making room is worked by two enormously large circular butter-workers, and they work four times as much butter at one single working as we do in New Zealand.

After taking careful note of the building and plant of La Union I came to the conclusion that with very little extension of the butter-making room nearly double the quantity of butter could be turned out with the present boiler, engine, and freezing-power. In other words, in order to make 35 or 40 tons of butter per day the extensions need not be on a larger scale or very expensive. In La Union they have splendid freezing and chilling chambers, which are capable of holding large quantities of butter in case they need to store at any time.

In 1902 this company issued an illustrated pamphlet in Spanish, giving a description, or, rather, the history of the company. I have much pleasure in quoting a few particulars from this pamphlet. They estimate in connection with this concern the rent of one cuadra (150 square yards) of camp land at $15 per annum. The care and milking of 120 cows requires three practical men. The wages of each man is $35 per month, with board and lodging. Ninety-five per cent. of the cows are of a Durham cross and type. Taking as a base the production of 13,000 kilos per day already reached by the company, the following data will show the importance of the establishment: The daily output represents 312,000 litres of milk obtained from 81,000 cows, the value of which is $5,265,000, and the rent of which amounts to $800,000 per annum. In the dairies contributing to the production of the society are employed 2,025 men. The management and staff of the factory and branches is composed of 156 employees.

The above company was registered in June, 1899, statutes reformed in October, 1901; capital, $500,000 in 5,000 shares of $100 each. No shareholder can hold more than 100 shares. The business is conducted on co-operative lines. In 1901 the company acquired the rights and properties of the Compania Escandinavia Argentina (Limited). The directors are Senor A. Yrazu, president; G. Munoz, manager. The vice-president is Señor Agustin de Uribe. The board of directors is composed of eight directors in addition to those already mentioned; amongst them are Dr. Augusto Tiscornia, and Señor Martin Pezoimburu.

I wish to express my thanks to Señor Yrazu, the president of the company, for his kindness in showing me over the whole premises.

It is claimed that the increase in the production of butter in the Argentine between 1891 and 1901 was over one hundred and fifty fold; in Australasia for the same period, according to Mr. Bateman, it was only thirty fold. In 1891 only 1,320 kilos. of butter was exported from the Argentine, while in 1902 4,125,000 kilos. was sent abroad.

Most of the cream is purchased on a commercial butter basis; that is, the estancieros have not become educated to accept so much per pound of butter-fat according to test. They demand so much per pound of butter, with 10 or 10½ per cent. added to the Babcock test, whether the manufacturer can turn out sufficient commercial butter to correspond with the test or not. This, in my opinion, is a wrong and unfair basis of carrying on a dairy business from the manufacturer's point of view, for the reason that a large quantity of the Argentine cream is injured in transit, thereby rendering it impossible to get a decent overrun. We in New Zealand think we have trouble with the testing and with our suppliers, but I believe we have the finest system of testing and paying for butter and cheese in the world; further, I think we have the most contented lot of factory-suppliers I have ever seen. In the Argentine nearly every large estanciero has a milk-tester. The one in use all over the country is the Gerber. The client sends in a slip with his cream each day, giving the test as made at the estancia, and if the factory's test does not come up to this there is trouble. They, of course, do not take into consideration the obsolete methods of carriage, &c., which the cream is subjected to, which nearly always causes the cream to become partly churned, and which renders it impossible for the butter-maker to get a 10-per-cent. overrun according to the farmer's test. I have almost become disgusted with articles appearing in dairy papers with reference to 16 to 19 per cent. overruns. When overruns of this kind are made there is, in my opinion, as a rule, cheating in the weighing going on, and too much water and salt left in the butter.

In the Argentine, where the farmers or estancieros do not possess plants of their own, they deliver their milk to the nearest skimming-station. Then, again, where the cream is skimmed or raised by deep setting for account of the senders, or is purchased outright, in either case it is carted or railed to the factories at large cost for carriage. I have no idea when the proper system of payment for milk will be adopted in the Argentine—that is, by paying on the butter-fat basis. It is estimated that there are about two hundred and twenty skimming-stations in the Argentine Republic, where skimming by centrifugal machines is done.

This business covers four provinces—Entre Rios, Buenos Aires, Santa Fé, and Cordoba.

In dealing with the dairy industry of the Argentine I have endeavoured to refrain from making comparisons between it and New Zealand and Australian methods. I reckon that it is my duty only to give the true practical facts as near as possible as I found them, and then to let our farmers and dairymen make the comparisons and judge for themselves as to what this enormous country is capable of doing in dairying and what we have to compete against. It only requires a run over the various lines of railways to convince a person of the enormous extent of the country and its vast richness. On each side of the different lines you will see thousands of fat cattle and sheep, and it must be remembered that at the time of my visit it was their autumn, when one would expect to find the grass partly dying out, but so far as I could see the pastures were in excellent condition, and late crops on the grand fields of alfalfa and maize were indeed a sight.

One can imagine the carrying-capacity of the Argentine when it is realised that the province of Buenos Aires alone is two and a half times as large as the wonderful New York State in North America. It is estimated that this province alone has about 10,500,000 head of cattle, over 82,000,000 sheep, and about 2,230,000 head of horses. In 1901 the total value of agricultural and pastoral products from this province alone was $740,000,000. We must, of course, figure on the fact that this province has a population of about 1,300,000 people. I am strongly of the opinion that if the people of the Argentine would adopt a better system of milking, yarding, and feeding the cattle, they would in a very few years turn out 50,000 tons of butter instead of 6,000 tons. While in the Tandil district I met a Mr. A. Leanes, who has had a lot of experience in dairy-farming in the Argentine. He is now on an estancia of 20,000 acres, and has a thousand cows. At the time of my visit he was milking between five and six hundred cows. He sends the cream to a butter-factory, and utilises the skim-milk for pigs, &c., on the farm. Señor Leanes informed me, upon inquiry, that the value of his land was about £2 10s. per acre, and he further stated that two acres of the grazing-land would carry one cow—that is, the year round. This land is situated about two hundred miles south of the City of Buenos Aires. I found it almost impossible to get from a farmer or estanciero the exact profit made per cow on the estancias.

Caseine.

I was not surprised to find that caseine was manufactured in fairly large quantities for export in the Argentine when I saw that little or none of the skim-milk was fed to the calves. As pointed out at the beginning of this article, the Argentinos prefer beef to butter-fat, or rather prefer raising the calf on butter-fat instead of skim-milk and meal.

I visited the large estancia owned by Dr. Santamarino, at Tandil. Tandil is 210 miles from Buenos Aires, on the Southern Railway. Near the town of Tandil is one of the great sights or curiosities of the Argentine Republic—viz., the "Rocking-stone." This stone weighs thousands of tons, and sits on a small pivot. To prove that this great rock moves, all you require to do is to place a bottle under it, when it will be smashed by the slight rocking of the stone. It is said that one of the old Presidents at one time undertook to pull this marvellous rock off its perch by hitching 400 bullocks to it, but the trial was not a success.

Coming back to Dr. Santamarino's business, which is situated near the Rocking-stone, I must say that this is a very interesting estancia. We should call this a "large ranch" in the northern United States of America, or a "run" in Australia. The estancia is over four square leagues in extent. In 1901 they installed separators in a factory at the homestead. At the time of my visit they were working five separators, and over 15,000 litres of milk per day was separated. In the flush of the season between four and five thousand cows are milked. They are also adding about five thousand more to the herd, all of which are already tamed for milking. On this large estancia there are thirty "tambos" or stations. Each one of these "tambos" is well fenced and watered. They also have paddocks of maize and lucerne. Besides, on each "tambo" will be found fairly good buildings. This sort of a farm will sound large to our New Zealand people. It, however, requires enterprise and capital to carry on a business of that kind. Dr. Santamarino has also lately erected a large building and equipped same with an up-to-date plant for manufacturing caseine. He not only manufactures the skim-milk from his own herd into caseine, but many of the estancieros who have separators sell their skim-milk to him. Mr. Reynolds's butter-factory at Tandil also supplies a large quantity of skim-milk to the doctor's business. I was informed that the caseine fetches about £30 per ton in London. Coke is burnt for drying the milk, and the expense is not a very light one. The great trouble is to get details from such an experimental business. I would not recommend this system of dairy-farming in New Zealand, particularly the milking process. I am quite sure our New Zealand farmers can make a great deal more money by feeding the skim-milk judiciously to calves and pigs than by manufacturing it into a rough caseine for export. During the first quarter of 1903 80,000 kilos. of caseine was exported from the Argentine.

Dried Milk.

The manufacture of dried milk is practically a new business in the Argentine. While in the country I visited Mr. L. Gahnan's estancia at Navarro, in the Province of Buenos Aires. A new plant has just been installed in Mr. Gahnan's butter-factory. A company has also been formed for the manufacture of dried milk in large quantities for export. At Mr. Gahnan's factory three

machines with a capacity of 80 gallons per hour are set up. The machines are made by Lane and Co., of Edinburgh. The process is a very simple one. The machines are nothing more than two large steel cylinders, 20 in. or 22 in. in diameter and about 6 ft. long. These cylinders are set close together; when heat is applied I should judge, with the expansion, they are only 1-16 in. apart. They are heated by means of applying dry steam to the inside of the drums. The milk is delivered directly on to the hot cylinders by means of a perforated pipe, which throws a fine spray on to each cylinder, the high temperature causes a thin coating of milk to adhere to the cylinder, and while the latter is revolving the dried milk is shaved off by means of thin knives, which latter must be perfectly true and set close to the cylinders. The dried milk when it is being delivered from the cylinders has the appearance of very thin white tissue paper. These large sheets of milk if touched with the hand will break readily. This substance is received from the cylinders into two large boxes, where wooden mallets are used for breaking up the dried milk, which is afterwards passed through a fine sieve, in order, as it were, to size it. After being passed through the sieves the milk has the appearance of fine meal made from a light-coloured American corn. It is then filled in barrels exactly like a 200 lb. flour-barrel, which are lined with parchment-paper. The dried milk is then ready for export. Any New Zealand dairyman or others interested can see a sample of this milk at the Dairy Commissioner's Office, Wellington.

If this system proves a success, a milk which is so easily handled and shipped is almost certain to meet with a good demand, particularly in a country like South Africa. I may explain that the sample of milk to which I gave a trial test did not prove a success, for the reason that the caseine did not seem to dissolve, thereby leaving considerable sediment.

The Meat Industry.

One of the great industries of the country is "saladeros," which signifies salted or jerked beef factories. These factories also make extract of beef, &c. About $45,000,000 is invested in this business. The principal market for this "tasago" or salted or jerked beef is found in Brazil. Before these saladeros were established, the only exportable animal products were grease from boiled-down animals, tallow, and hides. Now they have fifteen or sixteen of these saladeros, and, from statistics given by Señor Ronaldo Tidblom, there were slaughtered at these institutions for making jerked beef 403,000 cattle in 1901 and 253,100 in 1902. It is also said that about 250,000 head of steers are sent into Uruguay and Rio Grande (Brazil) for the purpose of supplying the saladeros there. The total export of jerked beef for 1901 was 24,296 tons, and for 1902 22,304 tons. It is claimed that this jerked-meat industry cannot be done away with by the establishment of meat-freezing works, for the reason that Brazil and Cuba will always require and must have tasago. These countries also take leaner and lighter cattle for this purpose from the Argentine than those sought after by the freezers and exporters.

Although I am not an expert on meat-freezing works, I am going to give some practical facts with reference to what is being done in this, the greatest of industries in the Argentine. During my short stay in the republic I was successful in getting through some of the most important freezing-works in the Argentine. The first freezing-works which I visited was at the Town of Campana, and by the kindness of Mr. Graham, representative of John Cook and Sons, I was able to get a look over the whole premises. This was the first meat-freezing works started in the Argentine, and dates back only to 1883. It belongs to the River Plate Fresh Meat Company. They have a killing-capacity of upwards of six thousand sheep and four hundred steers per day. This company also started the first export chilled meat business to Great Britain in 1901.

The chilled-meat industry is becoming an important factor in the Argentine meat trade. The advantages in favour of chilled meat over either live cattle or frozen beef for export, as claimed by the Argentinos, is, that the price is higher on the British market than for frozen beef, and also that the expenses incurred in handling live-stock for export are much higher—that is, transport, &c. The River Plate Fresh Meat Company are now extending their premises. They have erected large buildings where the sheep will be housed over night. This is found necessary owing to the fact that when it rains the sheep get wet and muddy, which makes the killing much harder and more disagreeable next morning. This idea might be adopted to advantage in New Zealand. These buildings or large sheds need not necessarily be very expensive.

At Campana they have a good wharf where the large Home steamers come alongside. The mutton and beef is taken direct from the freezing-chambers, where the small trucks are run right into the chamber, and during the loading a set of outside insulated doors are shut and opened to allow the trucks, which run on a narrow railway, to pass in and out. This scheme seems to work well. The steamer "Langton Grange" was loading a large shipment of beef and mutton at Campana at the time of my visit. This was being shipped by John Cook and Sons, of Australia. The chilled meat for the British markets is loaded in a similar manner, only instead of having the trucks run to the wharf in the open, they have built a sort of insulated shed or tunnel, which protects the carcases from exposure to the hot sun. This company owns large grazing paddocks or estancias, where the surplus stock are kept, also paddocks for resting the stock in close proximity to the works.

I may also mention that in connection with the chilled-meat business operated by the River Plate Fresh Meat Company in 1901 they exported 29,919 quarters of beef, and from the 1st to the 31st January, 1902, their exports were 38,148 quarters. Later figures I was not able to obtain. There seems, however, to be a rapid increase in the exports to Great Britain, and from what one can learn from recent reports from London, this factor in the meat-market at Home seems to be alarming the Beef Trust of the United States and the Australian shippers. It is claimed by shippers in the Argentine that their meat is competing fairly successfully with the meat from the United States, and that they are in a position to lay it down in London cheaper.

The next freezing-works I visited, those of the Campania Sansinena de Carnes Conegladas, are the largest in the Argentine. Through the kindness of Mr. M. Leishman Runciman, of Runciman

and Co., I was shown through this institution, and a marvellous place it is. It was started a year later than the River Plate Works, and has been many times enlarged and added to both in buildings and plant. This works is situated at the Barracas, Buenos Aires. The Sansinena Company are canny about giving much information regarding the operating of their business. I was, however, able to see how they handle the sheep and steers during the killing process. At most of the works in the Argentine, including the River Plate Factory at Campana, they have a system of placing men at different jobs, such as carrying the sheep to the bleeding-benches, and others to do the bleeding. Then they are carried to the hooks, where they are skinned by a different man from the one who takes the internals out. The same is the case with steers—for instance, they have a special man for skinning and cutting the knuckle part of the leg, &c.

In my opinion, there seems to be too much handling of the sheep by hand in most of the works in the Argentine. I am also convinced that we have not much to learn from the Argentine so far as the killing of beef and sheep is concerned. The exact capacity of the Sansinena Works I was not able to get, but was informed that they had a killing-capacity of over seven thousand sheep and four hundred to five hundred steers per day.

There are other important freezing-works in the Argentine. There is the Las Palmas Produce Company (James Nelson and Sons, Limited), which is a fairly large concern. Three new and important freezing concerns were started in 1902: one at Bahia Blanca, by the Campania Sansinena de Carnes Congeladas; also a new one, the La Blanca, at the Boco, Buenos Aires. This latter company only started operations in April last. They have a first-class works with an improved plant, and have a killing-capacity of 4,000 sheep and 300 cows or steers per day. The next works visited was the La Plata, at the Town of La Plata, on the La Plata River. This works was in course of construction when I was there. They are putting up enormous buildings and equipping the place with an up-to-date plant. From information received, and from the appearance of the various cattle districts in the neighbourhood of La Plata, and also the thousands of fat cattle one sees in this part of the country, I am of the opinion that this works may become one of the most important in the republic. Mr. C. A. Macdonald, owner of the Hercules refrigerating business in Australia and South Africa, was installing three large freezing-machines at the time of my visit. These three machines will have a capacity of 120 tons each. Mr. Macdonald is also installing three Hercules machines of enormous capacity in a new freezing-works on the River Plate, quite close to the City of Buenos Aires. Mr. Macdonald has had the planning of this latter works, and I think it is the finest laid-out or designed works in the country. The engine and freezing-room is going to be the most complete I have ever seen. In connection with these works they have erected an enormous building where the hides will be treated by different processes. This hide and fellmongery department will be in charge of an expert from Germany. To see the great smokestacks in course of erection at these new works would give one the idea that the company intend doing some business. After travelling for a few days in the Argentine I came to the conclusion that it was the country of smokestacks. Often you will see in the distance a great stack towering high in the air, and upon inquiry you may be informed, "Oh! that at one time was a boiling-down works," or perhaps it might be a brewery or a soap-factory. Before leaving the question of the last two new works just described, I wish to express my deepest appreciation of the kindness extended to me by Mr. C. A. Macdonald and his son during my stay in the republic.

To see the millions of fat cattle dotted all over the country, and such an abundance of grass and water late in the autumn, I could not help but think that some day the Argentine will down the world in the growing of beef. According to figures given in the Year-book, the Argentine is working under better conditions in the growing of live-stock than any of the British colonies. It is claimed that at present the majority of the freezing companies are working with much less expense in the administration, &c., taking it the year round, and their output is much greater, thereby enabling them to pay in proportion enhanced values to the estanciero (farmer). Another strong point in favour of the Argentine estancieros is that they work steadily throughout the whole year, whereas according to statistics the upwards of fifty stations in the British colonies are only able to work on an average, taking them all round, a little over one-third of the year. So enormous is the business of growing fat stock in the Argentine becoming, that it is estimated by reliable authorities that within very few years they should be able to export two million steers either alive or through the freezing-works.

In order to give our people some idea of what they have to compete against, I quote the following figures from the Argentine Year-book for 1902 and 1903: In 1902 the exports of cattle or steers from the Argentine was 118,303 head. The number of cattle exported in 1903 is said not to vary much from 1902. The number of wethers shipped in 1902 was 122,501; horses, 16,008; frozen mutton, 80,073 tons; sheep-skins, 41,405 tons; salted cow-hides, 35,343 tons; dried cow-hides, 26,558 tons; salted horse-hides, 135,685; dried horse-hides, 282,138; wool, 197,936; jerked beef, 22,304; frozen beef, 70,018; tallow, 49,095.

I have much pleasure in quoting a few of the statistics just issued by the Ministry for Agriculture for 1903—that is so far as the meat industry is concerned. The principal exports in this industry were frozen sheep and lambs, 2,445,993; frozen beef, 84,628 tons; wool, 192,989 tons; sheep-skins, 41,475 tons; hides, 37,239 tons; horse-hair, 2,241 tons; tallow, 39,000 tons. The bulk of the frozen meat in 1903 was shipped to the United Kingdom and South Africa, but most of the wool went to France. The sheep-skins went to Germany, Belgium, and the United States, the bulk to the two former countries. The value of the wool exported from the Argentine in 1903, estimating it at $2.61 gold per 10 kilos., was $50,424,168 gold, or, say, over £10,000,000. Last year 1,202,100 cattle were slaughtered for dried beef. In addition to this, 269,000 were slaughtered for making extract and preserved beef.

I landed in the Argentine in February, and I noticed that the exports of frozen sheep and lamb for the previous month, January, were 194,731 carcases, and of frozen beef 72,150 quarters.

It may be interesting to New-Zealanders to know the conditions under which men may start pastoral farming. I now speak of people with a small capital. The landowner, as a rule, provides a house, pens, and the necessary fittings, and camp land sufficient to carry stock and 800 sheep. The shepherd or estanciero buys a further 800 sheep. He takes charge of the whole flock and provides his own food, mutton excepted, which is to be taken from the flock. Whatever the profit from the flock may be it is divided equally between the landowner and the shepherd, after deducting the shearing and dipping expenses, which are advanced by the landowner. The shepherd or farmer is allowed to plant vegetables required for his family, also to keep poultry, milch-cows, bees, &c., and he can also plant fruit-trees. Contracts of this kind are generally entered into for a term of three years. At the end of each year the produce of wool, wethers, sheep, and skins sold is divided. The increase is divided at the end of the contract, when the shepherd may either take his share or capital in sheep, or renew his contract. The necessary capital for such a plan as this is very small: 800 sheep at $1, $800; six horses at $15, $90; furniture, utensils, and general expenses for first year, $250: total, $1,140. With this capital, and with sheep shearing 5½ lb. to 6 lb. of wool, the shepherd's portion of the profit may be estimated at from $450 to $550, without counting what he could make from butter, cheese, poultry, honey, &c.

The State lands which are available for sale or for renting, as given by the 1903 Year-book, number nearly a hundred million hectares, situated as follows: In Santa Cruz, 24,949,976 hectares; Chubut, 22,545,742 hectares; Rio Negro, 15,087,470 hectares; Chaco, 13,025,450 hectares; Neuquen, 6,174,158 hectares; Formosa, 8,676,180 hectares; Pampa, 3,124,802 hectares; Tierra del Fuego, 1,886,809 hectares; Misiones, 792,000 hectares: total, 96,262,487 hectares.

Seventy-five per cent. of the wool in the Argentine is of white-faced long-wool sheep (Lincolns and Leicesters), 20 per cent. of merinos, and only about 5 per cent. of black-faced and criollo sheep.

In 1901 228,358 tons of wool was exported, and in 1902, 197,936 tons. In 1903, 192,989 tons was exported, most of which went to France and Germany. I have seen a great many fine flocks of sheep in the Argentine, and some of the breeders pay extraordinary prices for stud stock at Home; notwithstanding this, and the fact also that they have such an excellent climate for the breeding of animals, their sheep on the whole, in my opinion, do not compare with best New Zealand and Australian sheep. You will, however, find some of the best stud stock that is to be found in any part of the world. Owing to the fact that my stay was such a short one in the republic, it was impossible for me to collect much practical information direct from the sheep-farmers—that is, with reference to the actual methods of handling sheep on the estancios.

Agriculture, Stock, and General.

When one travels over a portion of the Argentine, a country only one-third the size of the United States, he sees its immense plains formed by Nature, with a climate perhaps the most comfortable and salubrious in the world taking it the year round. It is a country also where railways find no natural obstacles in the way of their construction. You find on the Pacific Railway plains the great estancias (ranches) covered with fat steers and sheep. The latter, I may say, are to be seen in millions. Amongst the cattle I can safely say thousands are of the best breeds. You also see the great fields of linseed, corn (maize), and wheat, the principal agricultural products of the country.

The size of an estancia, or what we would call a "run" in New Zealand or a "ranch" in the United States, varies from 3,000 to 600,000 acres. About 20,000 acres might be said to be an average estancia. In conducting the business of cattle-herding or ranching in the Argentine, that is where cattle are raised and fattened for export, it requires expert men. These men in the Argentine are called Gauchos. They are, so far as riding and the care of cattle is concerned, similar to our cowboys in the North-west Territories of Canada, where they can lasso or tie up a wild steer or horse in lightning style without getting out of the saddle. The horses, generally speaking, are small-sized, but wiry and of marvellous endurance. They somewhat resemble our Canadian mustang horse. The cattle roam over the great plains, and many of the estancias are not fenced. It is therefore necessary to brand the cattle. They have an exhaustive set of branding regulations, which time and space would not permit of my detailing in this report.

In my opinion the republic is favoured with a combination of advantages over many other, or, perhaps, over almost any country in the world. I am still further of the opinion that if the Argentine agricultural and pastoral industries were developed on anything like up-to-date lines, within very few years they would be able to land their products on the markets of the world almost beyond competition. People may ask, Why? I say then that the above statements may be backed up by the following: First of all, perhaps, the success and future progress of the Argentine, so far as agriculture is concerned, may be credited to her geographical position or situation, and also to her favourable climatic conditions. Then there is the marvellously low price of land, and the fact of her being able to make use of labour on the land the year round. Next is the growing of alfalfa, of which four to six crops are often cut, the latter in the best districts. The Argentine also has the advantage of having cheaper labour than such great producing countries as Canada, United States, Australia, and New Zealand. It has, further, the advantage of breeding and the carrying of cattle for dairying purposes, and also of fattening its live-stock the year round with little or no extra feed. It has also the advantage of having lower ocean rates to the principal markets of the world than Australia and New Zealand, and only about 25 per cent. higher than North America. The Argentine also has the advantage of having a limited mileage of railway, which enables her to land her products at the ports of shipment at a very low cost. Then, again, severe droughts are almost unknown in the Argentine, and the pests which we hear so much of in our colonies, which it is claimed do so much damage to crops and pastures (such as the locusts), are, in my opinion, not nearly so bad as they are made out to be, and there is

no immediate cause for alarm from this source. The Argentine Government has ever since 1897 taken the most energetic measures to prevent the invasion of the crop districts by these pests, and has been very successful. They have spent $11,000,000 gold in this direction, with the result that in 1898 95 per cent. of 68,000,000 hectares was saved from the scourge, and in 1901 and 1902 they almost entirely eradicated the plague. About three-quarters of the soil in the arable districts is composed of alluvial deposits of volcanic and granitic origin, making the soil fairly light, porous, and free from stone, which makes it easily worked. The soil in most districts is strongly covered with vegetable deposits. It rests on a subsoil which varies from 25 centimetres to 1½ metres.

WHEAT-GROWING.

It was at one time the opinion of scientific men that the pampa soil of the Argentine was not very suitable for agriculture, particularly for the growing of a good quality of wheat. That idea, however, has long since disappeared. Excellent specimens of wheat can be seen all over the country now. There are many varieties of wheat grown, but probably the best suited to Argentine soil is the "Barletta." Some tests have been made, where it was found that this variety gives a weight of 83.250 per hectolitre, while one of the best Russian varieties weighed 84.500 per hectolitre. One must take into consideration the vast extent of the wheat districts of the great Argentine territory in order to realise that it is necessary to procure that particular seed which may be best adapted for the district he may be farming in. Want of knowledge in this direction is said to have caused serious deterioration in the quality of wheat in some provinces, particularly in the noted wheat province of Entre Rios. In the southern parts of the Argentine splendid results are said to be had from Hungarian and Russian varieties; those along with the first-mentioned, Barletta, seem to be very suitable for export.

In the southern parts of the republic you find a colder climate, which, perhaps, tends to make seed imported from colder climates do better. It is said, however, that excellent large, plump, bright seed from Manitoba, in Canada, and also magnificent seed from California does not do well in most districts. I have also learned from old Spanish wheat-growers that such excellent imported seed only requires a few seasons until it degenerates into a shrivelled-up inferior product; while, on the other hand, the best varieties of native grain which are suited to the different provinces seem to give general satisfaction both for milling purposes and for export. Among the varieties grown are to be found some French varieties, which are much in request for home consumption, but are not sought after by the British importer.

Before dealing briefly with a few practical facts as regards the actual practice of wheat-growing by the natives in the Argentina, I beg to quote a few statistics which I consider to be as reliable as can be obtained in the republic, seeing that they came from the Ministry for Agriculture and the latest Argentine Year-book. I suppose the largest harvest the Argentine ever reaped was in 1898 and 1899, when they exported over two million tons. Besides the exports, 1,750,000 tons was used for home consumption and for seed. According to the latest figures issued by the Ministry for Agriculture, the total wheat-production for 1903 and 1904 was 2,750,000 tons, of which 1,681,000 was exported. Besides this, 71,980 tons of flour was exported. The home consumption of wheat in the Argentine is now over 700,000 tons per annum. The quantity of maize produced by the Argentine will sound large to New-Zealanders. Last year she grew no less than 3,770,195 tons. In 1903 and 1904 there were under wheat alone in the Argentine something over 4,300,000 hectares. In the District of Tres Arroyos there is upwards of 150,000 hectares under wheat, and during my visit there I was informed that 40,000 hectares was recently purchased from the Government for agricultural purposes by one firm alone.

The cost of cultivating 100 hectares according to the latest statistics is found to be as follows: This crop gives twenty bags of 70 kilos., or about 1,400 kilos. to the square: For ploughing, $300; harrowing, $100; two ploughings, sowing, overseer, &c., $400; two extra harrowings, $100; 6,000 kilos. of seed at $5.50 per kilo., $330; interest on capital, depreciation, and payment of labour, $70: total cost, $1,300.

Speaking generally of the various provinces as wheat-growers in the Argentine, the Province of Buenos Aires contains the best land. This province is being rapidly opened up for agriculture. The centre part of the province is largely adapted for sheep-farming. The Province of Entre Rios lies near the River Parana and Uruguay. This is a great country, having vast rolling plains, and many small rivers, and some woods in places. This will also some day become a great wheat province, owing to its having such rich soil.

The Republic of Uruguay, although I did not get a look over it, is said to be coming to the front as a wheat-producing colony. This republic is controlled by an entirely different Government from that of Buenos Aires and the other provinces. I may add that this republic is noted for her frequent rebellions. Uruguay produces about 800,000 quarters of wheat. In that republic they have always maintained a gold currency.

Ploughing is done in a very rough, slovenly manner in most places in the Argentine. A Canterbury farmer would be scornful if he watched the ordinary "chacero" Italian tenant following his bullocks as he turns the most crooked furrow imaginable, leaving much of the grass to be seen on the surface. It is said, however, by old farmers that there is sometimes wisdom in light working of the land, particularly during wet seasons. It is found during the wet seasons with deep ploughing the wheat grows very much to straw, where the shallow-worked land returns a good crop. This would appear somewhat of a lottery business in wheat-farming. Idleness during the growing of the wheat-crop seems to suit the Italians. While that is true, it may be pointed out that no country offers better advantages for carrying on mixed farming the whole year round. There is no time of year when a farmer could not if he wished be busily engaged in ploughing, sowing, reaping, or threshing either wheat, linseed, maize, or lucerne.

They have a good deal of trouble with smut in wheat in the Argentine. Frosts in the southern part of the country also cause damage some seasons. With old lands where wheat has been grown for fifteen to twenty years, and where no plant-food has been put back in the soil, the land becomes tired and foul or sour, thereby producing poor crops.

Harvesting the Crops.

Generally speaking, the reaping is done in a very short space of time, for the reason that nearly every man, woman, girl, and boy works from early morn till late at night to save all of the crop before any of the grain is shed. Reaping-machines and horses are plentiful, but sometimes with a big crop labour is scarce.

Threshing is as a rule done by contract, and is begun as soon after the harvest as machines and men can be secured. Very often estancieros combine and purchase threshing-machines and do the threshing on a sort of share system, or, rather, on the co-operative principle.

The life of the Buenos Aires and Santa Fé wheat-farmer is, saying the least of it, monotonous, although I must say it is probably one of the healthiest climates in the world. Needless to say, the temptations of the ordinary estanciero to spend money are not great. They live very simply, but hardly ever does poverty exist. About the only amusement is playing the violin, guitar, or banjo. It is not a very pleasant feature for an Englishman to hear these Italian wheat-growers discussing matters among themselves when he does not understand them; but if you only get a twinkling of the language you become impressed with it. I know of no language except the Maori language which is so soft and sweet.

Getting back to the wheat business, which I wish to make as short as possible, I may point out that there are about three hundred and fifty railway-stations where wheat is shipped for export—that is, from the country districts. While passing I may mention that there does not seem to be much disposition to rapidly build up country towns, as is the case in Canada and the United States.

At the Port of Buenos Aires they have many enormous elevators on the principle of those at the head of Lake Superior in Canada, through which latter a vast portion of the wheat consumed in Great Britain passes. At the Port of Rosario they have also large elevators. The difference between the methods of handling wheat in the Argentine and Canada is that in Canada, particularly in Manitoba and the North-west Territories, the wheat is never put in bags; it is delivered direct from the machines into large wagon-boxes, from which it is shovelled direct into the elevators, which are dotted all along the line at each small town or siding. The wheat is all classed or graded and placed in different compartments high up in the elevators, after which it is run directly into the cars at a small cost. It is then conveyed to the head of Lake Superior, where it is again run or elevated into these enormous sky-pilot elevators, from which it is delivered into the vessels without very much hand-labour.

In the Argentine all the wheat, as in New Zealand, is put in bags and stacked up at the stations until sufficient cars are available to carry it to the sea-ports. I have seen as much as three hundred thousand bags of wheat stacked up at one station in the District of Tres Arios awaiting transport. In many cases the bags are placed directly on the ground, without any straw or boards underneath. In the case of heavy rains a considerable quantity becomes damaged; this is said to be the fault of the farmer, but I say it is the fault of the Government, for during my stay in the republic large quantities of wheat were blocked at the various stations owing to a strike on the railways; this strike hampered trade greatly, but it was finally settled peacefully at a great expense to the farmers. During the strike I had several quaint experiences while travelling. Nearly every train was paraded by Spanish soldiers; what they were there for one could not tell, for although they had swords, bayonets, rifles, &c., no person seemed to be getting hurt, as would be the case in North America when the Militia is called out for a like purpose. Sometimes we would stop two hours and a half at a railway-station, for what purpose no person could explain; nevertheless we stopped.

The Spanish soldiers are a great body of men. They are all undersized; they wear a uniform which seems to have been specially designed by the Government to act as a target for any foreign foe. They have all sorts of shiny belts and shoulder-ornaments, and the most conspicuous of all is a very high cap, the top of which is a deep scarlet, thus making a grand target in time of war.

General.

A word or two about the money of the country, railways, &c., may not be out of place. The money of the Argentine is on the paper basis; the minimum value of a dollar was fixed about the year 1900 at 44 cents gold, or 127 per cent. premium. The value of one gold dollar expressed in paper money varies between $2.27 and $2.35. I may also point out that the gold dollar of the United States is at about 4 per cent. premium over that of the Argentine Republic dollar.

The great plains of the Argentine are well equipped with railways, and extensive developments yet continue on a large scale. It is said that back as far as 1867 there were only about 360 miles of railway in the country, while in 1900 there were 10,601 miles of these railways; the Government owns about 1,500 miles, and nearly 9,500 miles are owned by foreign companies. In length of line the Argentine stands about eighth on the list of countries. The paid-up capital is about $560,000,000 gold. The total receipts, according to the Argentine Year-book for 1900, are over $400,000,000 gold. There are three gauges in railways in the republic. One is a very wide line, being a 5 ft. gange; it is really the standard throughout the country, although they have short lines with a 4 ft. 8½ in. gauge, and also a narrower gauge, similar to that in vogue in some of the out-of-the-way districts in the colonies, 3 ft. 3 in. (or 1 metre). I suppose one of the most interesting railway-lines in the republic which is now nearly completed is the Transandine, which touches the banks of the Mandosa River; this railway climbs to the summit of the pass of the

Andes, which are over 13,000 ft. above sea-level. Speaking generally of the railways, they are well constructed, although it is a very difficult matter to get good ballast in such great plains as the Argentine, which are lacking so much in the necessary material, stone and gravel-pits. The cars are very much like those employed in North America. There are comfortable sleepers and fine dining-cars on all through trains.

The total length of telegraph-lines in the Argentine is close on thirty thousand miles. About twelve thousand five hundred miles of this belongs to the Government; the Western Union Company alone has 192,705 miles.

With regard to the general industries of the country, the main products are agricultural, while others are developing fairly rapidly. Sugar may be classed as an agricultural product; they have forty-one sugar-mills in the Argentine. In 1870 the Argentine imported 22,000 tons of sugar, while in 1899 the tables were turned, when she exported nearly 60,000 tons of sugar. It was estimated that there is about $55,000,000 gold invested in the sugar industries in the Argentine.

They have sixty-two breweries in the republic, which brew about 450,000 gallons annually. Alcohol is also manufactured in large quantities. They have in the country between 180 and 185 distilleries; the annual product turned out is something over 3,000,000 gallons.

The wine industry is also an important one. The soil is very suitable for grapes, and vineyards cover vast areas of land. Along the great slopes of mountains such as San Juan and Neau Dosa, which lie west of Buenos Aires City, are to seen perhaps the best districts for wine-growing. In 1901 the Argentine had over 90,000 acres in vines, which was valued at about $10,500,000 gold. In 1903 she had 51,625 hectares under vines. In 1901 the stock of wine in the wine-warehouses or bodegas (bond) was about 871,000 gallons. In 1902 the importation of foreign wines was greatly diminished, and the increase over the 1901 production was enormous; 1903 figures could not be obtained, but the crop was a large one.

Although a good deal of machinery is imported into the country, the iron and steel industries are going ahead very fast; and although there is practically no coal and not much ore in the country, it opens one's eyes to see how important this industry is becoming. They have in the Argentine over two hundred iron-foundries, and 153 repair-shops. They manufacture nearly every class of machinery, including engines, boilers, &c. A large number of the railway-carriages and tram-cars are manufactured in the country; the only parts imported are the wheels. Steel safes are also made locally and are rapidly taking the place of the imported article. So far as the iron industry is concerned, the imports into the country since 1899 have decreased nearly 50 per cent. The capital invested in these industries is between $16,000,000 and $20,000,000 gold.

The excise tax on tobacco and its products amounts to over $10,000,000 gold in 1901. In 1903 no less than 167,000 tons of tobacco was exported. It is called "quebracho" in Spanish.

About $4,500,000 are invested in textile manufactures, which, including hat-factories and woollen-factories, give labour to upwards of 8,500 persons. They import 8,500,000 dollars' worth of linen which might be manufactured in the country.

As to mining in the Argentine, it is claimed they have valuable copper-mines, many of which contain silver and gold. They have also lately discovered rich veins of gold and also iron-ore. I may add, however, that these products have not been developed to any extent.

There is also borax, lead, and marble in the country. It is believed that the rivers of the Argentine are rich in gold and that dredging will shortly become a paying industry, but if they meet with the same experience as most dredging undertakings in our colony I should not care to invest very heavily in the new shares. They have formed a gold-dredging company in Buenos Aires, with the object of exploring and working the auriferous sands of the various rivers. One thing which is certain is that they will not meet with such obstructions as timber and rocks or boulders in the beds of the Argentine rivers, which are nearly all composed of sandy bottoms.

The Constitution and Civil Rights of the Country.

The National Constitution of the Argentine Republic is based upon the broadest principles of liberty and justice, and affords the most ample guarantees for the enjoyment of full civil rights by and for the protection of the material interests of all the inhabitants. In one of its first articles its principal objects are declared to be "to create national unity, to consolidate justice and internal peace, to provide for the common defence, promote the general welfare, and to assure the benefits of liberty to us, to our descendants, and to all the people of the world who may reside in Argentine territory." In this instrument, provision is made for a separate but correlative existence of the powers forming the Federal and the Provincial Governments, the constitutions of the various provinces being based upon the same republican representative federal system in accordance with the principles, declarations, and guarantees of the National Constitution. Thus, all the public Acts and judicial proceedings of one province have the full force of law and authority in the others. Act 20 of the National Constitution declares "that foreigners may freely exercise their callings of any profession for which they are qualified, navigate the rivers and coasts, make testamentary dispositions, marry in accordance with the laws of the republic, own and deal in real estate, and, exempt from differential taxation, travel, associate for lawful purposes, petition, and do all such things as may be legally done by born citizens of the State. They may obtain naturalisation papers on completing a term of two years' residence in the country, or such lesser term as may be fixed by the Executive Government in cases of proof of service to the State, such naturalised citizens being immune for a period of ten years from date of naturalisation from compulsory military service." Other articles of the Constitution provide for the free exercise of all religions, and establish the principle of official encouragement to European immigrants, especially laying down that the Government shall at no time limit, or reduce, or charge with taxes,

the entry into Argentine territory of foreigners whose object is to devote themselves to agriculture, industry, science, or the arts.

Foreigners, after four or six years of naturalisation respectively, become eligible for election as national deputies or senators, but without being naturalised may hold administrative and official positions in the Executive Government. The Government of the nation is divided into three branches established by the Constitution—(1) the legislative power which makes the laws; (2) the executive power which carries them into effect; and (3) the judicial body which construes and applies them in cases of conflict. The executive power of the nation is exercised by the President, who must be born in the republic and profess the Roman Catholic religion. The President is the supreme head of the nation and has charge of the general administration of the country, assisted by a Vice-President and eight Secretaries of State, the latter being directly appointed by himself. The legislative authority is vested in a National Congress, consisting of a Senate and a Chamber of Deputies, the former numbering thirty, two for each province and two for the capital, elected by a special body of electors in the capital and by the legislatures in the provinces. A senator must be thirty years of age, have been a citizen for six years, possess an income of $2,000, and be a native of the province for which he is elected, or have resided two years therein. A senator is elected for nine years and may be re-elected. A third of the Senate is renewed every three years. The deputies are elected by the people in the proportion of one for every 33,000 inhabitants, or fraction not below 16,000. At the present time there are 120 deputies. The age qualification is twenty-five years, four years' citizenship being obligatory. They are elected for four years and may be re-elected, half the number retiring every two years. Both Chambers sit in ordinary session during each year from the 1st May until the 30th September. The Vice-President of the republic is Chairman of the Senate, but otherwise holds no political power. Should the positions of President and Vice-President become vacant the Senate has the power to fill the vacancies. The President is Commander-in-Chief of the Army and Navy, and appoints to all civil, military, and judicial offices, subject to the approval of the Senate, and has the right of presentation to bishopries.

Population and Immigration.

According to the census of 1895, there were in the country about 3,000,000 Argentines (all children born there of foreign parents are Argentines) and about 500,000 Italians; these latter by far the largest number of immigrants, and they are far better than the emigrants of the same nationality that go to the United States, from what I have seen. Some of the best and most intelligent people in all kinds of business and industries, especially in agriculture, are Italians. Next come the Spaniards, over 200,000 in number; next French, somewhat less than 100,000; next English, about 22,000; next Swiss, 15,000; and lastly the North Americans, as we are called, 1,400. These figures refer to the year 1895. The number of foreigners in the country at the 31st December, 1899, was 199,808, an increase of 20 per cent. on the returns of the year 1895. Immigrants in forty-four years, 1,935,077: Italians, in forty-four years, 1,198,550; Spaniards, 361,079; French, 162,636; British, 34,031; Austrians, 31,698; Germans, 27,834; Swiss, 24,873; Belgians, 19,082.

Colonisation.

The national and provincial Governments have made great efforts to promote colonisation on the large tracts of land which are available for settlement throughout the country. Private industry has also done a great deal in this same direction. The railway companies did a great amount of work in the early days of the opening-up of the roads, and largely by British capital new settlers were induced to settle on the agricultural and stock-raising land, particularly in Cordoba and Santa Fé, which is the central part of the Argentine. Many of the wealthier Spanish people have done a great deal to encourage settlement on the land. During the past few years the colonisation "stroeder" and the railways have organized about thirty colonies on the land, which cover more than 400,000 hectares, which also have twelve or thirteen new towns with a population of about 17,000 souls.

As pointed out in a previous article, the Government offers every facility for new settlers purchasing land on time payment.

Education.

In reference to education, the primary education is compulsory from the age of nine to fourteen; secondary education from fourteen to nineteen is optional, as also the university or higher education from nineteen to twenty-five or twenty-six. No man can enter into any of the professions, including engineering, and take a prominent position in the Government without being a graduate of the National University, and having taken the course outlined in the above division of ages.

In 1901 there were 470,000 pupils in the public schools, which are free to all, and free to people of all religions. Although the Catholic religion is the national religion, neither it nor any other religion is allowed to be taught in the schools.

In the National University there are four faculties—law and social science, medicine, exact physical and natural science, and philosophy and letters. In 1901 there were 3,562 students in the University.

Buenos Aires.

The City.

I cannot conclude without giving a description or some information about the beautiful and really great city of the world—Buenos Aires—and a brief outline of its characteristics, history, size, and general features.

Its early history is full of trouble. Founded in 1535, destroyed and rebuilt; and then from 1650, when there were four hundred houses. In 1852, when the noted President Rosas was turned

out, Buenos Aires had 76,000 inhabitants; in 1864, 140,000; in 1887, 400,000; in October, 1902, 864,513; and at the time of my visit this city had over a million souls. It is now the largest city in the world south of Philadelphia. Comparing its present rate of growth per decade with some other cities we find that Greater London has 20 per cent., New York 37 per cent., and Buenos 40 per cent.

The city is on the bank of the River Plate, a sloping bank over 60 ft. above the level of the water, rising up to considerable elevations in the centre of the city. It is about 120 miles from the sea at Monte Video. Its area is one of the greatest in the world, 44,830 acres; Paris has only 19,280, Berlin, 15,525. It is a good day's journey to go all round the city, as its perimeter measures thirty-nine or forty miles.

The style of the city is cosmopolitan, generally speaking, in buildings, in stores, in residences, in dress, in habits and customs of the people. It is made up of many nationalities.

There are seventy-five parks and small gardens outside main streets, with a combined area of about 1,400 acres. These parks are most tastefully laid out and more neatly kept than in any other country in the world, Paris, perhaps, excepted. The style of the houses of the wealthy people can be seen on Avenida Alvear.

The pavements are wood (nearly all hard, suitable wood of the country), asphalt, granite blocks, macadam, and rubble. No city has better pavements in the central part. In the outskirts, however, much of the pavement is very bad and uneven, merely rubble, but immense sums are being expended in substituting for rubble granite blocks and asphalt.

The streets are laid out in the form of a chess-board, and are generally about 360 ft. apart from centre to centre. In the old or the central part of the city the streets are narrow; it is difficult for three carriages to pass. There are, however, a few 33 ft. wide, and one or two avenues about 100 ft. to 110 ft. The finest street, said to be the best lighted in the world, is the Avenida de Mayo, which is in the centre of the city. As to the numbering of the houses north and south, this is perfect. It has a fine asphalt pavement and double electric lights in the centre. It was cut through the blocks a few years ago from the Casa de Gobierno (Government House), near the port, to the Thirteenth Street, somewhat less than a mile away. At the other end there is being built a beautiful Capitol building that will cost about $5,000,000 gold.

There is a project of national concession for a system of underground electric tram-lines, connecting the three main railway-stations with the Plaza Victoria, and in one direction extending by a surface-line far out in the country.

There is no city anywhere of its size, in my opinion, with more lines of street-cars; in fact, with the exception of two streets, there is a line in every one of the principal thoroughfares. And leading out to the pleasant suburban towns, Belgrano, Palermo, and Flores, there are electric lines similar to those in American cities using the overhead trolly. In fact, all the equipment from rails to trolly comes from the United States instead of from England. Very extensive changes are being made in all parts of the city, substituting electric for horse cars. There are now 275 miles of street-car lines, which carried in 1900 116,447,982 passengers. If there are any electric railways in any part of the world which should pay it should be those lines in the City of Buenos Aires, for the conditions are specially adapted to their easy construction, the material being suitable for tunnelling, and a great mass of people crowded into the "centre" with its narrow streets, where the present surface movement is often extremely congested. A United States citizen has the concession.

The climate in Buenos Aires, taking the whole year round, is said to be very agreeable. The parks are always green, vines and palms and a species of banana plant are seen everywhere, and flowers grow all the year in the open. They procure the plants from the semi-tropical regions in the north of the country and from Paraguay, where the *Victoria regia* and other beautiful plants grow wild.

The history of the lighting of streets in the city is very interesting, and shows that the city keeps pace with others in this respect. The first record of public lighting is said to be in 1778, when the city had lamps in the form of a tin of horse-oil, with a wick; then came tallow dips; then oil-lamps; then came gas in 1885, and in 1888 electricity began to replace it in part; and on the 31st December, 1900, the city was lighted with 889 arc lamps, 318 incandescent of 16 candle power, 14,084 gas-lamps, many with the Welsbach burner, and 8,590 keresone-lamps. And there were thirty-six electric-light stations, with a capital of $9,000,000 gold, and with a capacity of 23,300 electric horse-power.

The means of locomotion about the city are abundant—street-cars everywhere, and a very good and economical cab service. There are few coupés, no public hansoms, and only one or two private ones; but the street-carriages are two-horse victorias, which carry four people. The private turnouts are equal to any of those I have seen in the United States or Canada, especially the horses, which are of the best imported stock. The "Corso" and the approaches to it on a Saturday or Sunday afternoon are very attractive. It is when in the beautiful park of Palermo, one of the suburbs—broad avenues, beautiful shrubbery, lakes, and shady drives, and immediately in front the broad River Plate—that one is impressed.

The house-fronts, when kept in repair and painted, are neat and architecturally beautiful. The words "repair" and "painted" might be explained. There are no wooden houses, which these words might imply; they are nearly always made of rough brick, covered with what is called "revoque" in Spanish, a covering of plaster or staff mortar and sometimes artificial stone. The better class of houses generally have a base of granite, marble, or other natural stone 3 ft. or 4 ft. high, and then brick covered with "revoque." Sometimes the natural stone extends to the second story, and then invariably comes the artificial covering; after a while—two or three years—this begins to discolour and flake off, requiring painting and repairing; after ten years it begins to become an eyesore, and at the end of fifteen or eighteen years it must all come off at a very considerable expense.

The people show great taste in the arrangements of their stores, and particularly the shop-windows; from a butcher's shop to a confectioner's and a lace-store fine taste is visible everywhere. A walk along Florida Avenida, the principal shopping-street, a fine asphalt street with no street-cars on it, is one of the delights of Buenos Aires, and one never tires of it. If for a week you miss this promenade you hardly know the street, for the appearance of the stores has been greatly changed in the meantime by a complete change of the decorations.

The manner of living is Continental, not even English—a cup of coffee with a roll in the early morning; breakfast at 11 to 12.30 (which is a meal in courses), and dinner at 7.30, the principal meal of the day. This is the custom among all classes, high and low; and there is another custom (it is strange how soon you fall into it), tea or coffee or "matte" (a species of steeped herb—"yerba"), pressed into a peculiar little gourd used as a bowl and drawn out of it with a hollow silver tube called a "matte-stick," a sample of which I have brought home with me.

The Spanish language, which is the national language, is spoken everywhere; but, as might be expected in a cosmopolitan city, French, Italian, English, and German are spoken almost everywhere, particularly French.

As English money and Englishmen have done more than any to develop the country, have built, own, and run nearly all the railways, many of the great estancias, and other businesses, particularly commercial, the English have a large say.

The telephone service is in the hands of private companies; the capital invested is over $10,000,000 gold; there are about twelve thousand subscribers. There are no really long-distance lines, except one recently opened to Rosario district.

The city has a very extensive system of water and drainage works, costing nearly $40,000,000 gold, discharging the sewerage fifteen miles distant, and the storm-waters by great sewers, now being completed, into the river in front of the city. The city waterworks take their water above the city, where it is never contaminated.

The water of the River Plate is good but of a reddish colour or muddy. It is clarified in settling-basins before being delivered to the distributing-reservoir, built on one of the highest points of the city. The distributing-reservoir is a work of art, and well worth seeing; it is covered with glazed tiles over which is pressed brick. These works altogether have made Buenos Aires one of the healthiest cities in the world, as the death-rate proves. The Government is soon to extend the works at a cost of five or six millions gold. Ten years ago, upon the completion of the main works, the mortality per 1,000 was 30; now it is 16½. This compares very favourably with other large cities. London has 19.2, Glasgow 21.6, New York 19.7, Philadelphia 17.7, Boston 19.0.

Buenos Aires is well provided with newspapers. They have all told over one hundred and fifty monthly, weekly, and daily papers. There are five small English papers published, three German, one Russian, and one Basque; the balance are composed of 119 Spanish, eleven Italian, and nine French. There have also been established lately three periodicals in the Scandinavian language, also two more in Basque, one in Hebrew, and one in Arabic. It is said, and I believe truly so, that the national daily newspapers are as keenly alive to the necessities of modern thirst for daily information as in any country in the world. The supply of cable and telegraphic news from all parts of the world is really excellent. This latter may be said more particularly of that wonderful Spanish paper *La Prensa*. I only wish I could show a photograph of this wonderful newspaper institution. This building is one of the grandest structures in Buenos Aires. It stands in a prominent position facing the grand street Avenida Le Mayo. The *Prensa* building is devoted entirely to the morning paper. Of course, if the Wellington people received fifty thousand copies of it some morning instead of the *Post* and *Times*, it would not be of much use to them. I think I can say that there are no newspaper-offices in the world that can compare with this building in elegance and convenience in all its interior appointments. The room where guests from foreign countries are received is the most delightful sight I have ever seen. The stairs leading into the main entrance and the main banister is a masterpiece, being constructed in the most elegant design from solid blocks of granite and beautiful marble. The reception-room is such a masterpiece I could hardly describe it and give it justice.

The Harbour.

I must say something about the wonderful harbour of Buenos Aires, which is a revelation to any person who has never seen it. Particularly noteworthy are the new docks, which are very extensive, and lie along the immediate front of the city and connected with it. They were designed by the well-known English firm of engineers, Hawkshaw and Hayter, and carried out under the supervision of Mr. James Dobson, the resident engineer. The concessionaire was an Argentine. In 1885 the National Government began the construction of very large docks at Buenos Aires; hitherto all the business had been done from the anchorage, about twelve miles from the city, the intervening space being a great mud bar, the water from a depth of 25 ft. gradually shoaling to the shore-line at the city. This was so flat that it was necessary often to transfer the passengers and goods from the lighters, in which they had come from the vessels, to small boats and then to great wheel carts that went out a long distance in the water to meet the lighters.

In order to reach the docks from the sea, a channel has had to be excavated in the mud from the anchorage. This channel (the North one) is at low tide 21 ft. deep and 330 ft. wide, and about five miles and a half long from its intersection with a channel, which already existed by previous dredging from the other end of the port, at the mouth of a small, sluggish stream called the Richuelo. The tide of 2 ft. or 3 ft., depending largely upon the direction and force of the wind and very uncertain, permits vessels drawing about 23½ ft. to enter the port by the North Channel. The new port was connected with the older port, and now both channels are being used, and the depths in them are about as stated above.

The works are built in the most substantial manner—masonry walls founded on what is called "tosca" (loess), the hard substratum that is found in this part of the country. The four docks, or basins, are from 620 to 750 yards long, and are all 170 yards wide, connected by passage-ways 22 to 27 yards wide, over which passes by hydraulic turning bridges the foot, vehicular, and rail traffic. A sea-wall in front protects the entire port. On the city side are three- and four-story brick warehouses, thirty-two in all, with a total frontage of a mile and a half. Sheds, cattle-yards, railroad-tracks, hydraulic cranes and capstans, and other important appurtenances give the port modern facilities for handling cargo.

When the docks were opened at the southern end in 1899, the registered tonnage of vessels arriving and departing at the Port of Buenos Aires was 3,800,000; in 1901, 8,661,299, more than 100 per cent. increase. There are only twelve ports in the world of greater tonnage, and none of them show such phenomenal growth. In 1880, about the time that the works were proposed, the tonnage was 644,570, and the plans were made for 2,000,000 tons only. The Government has recently begun the extension of the North Channel straight out to the anchorage, and later will deepen it to 22 ft. or 23 ft. In the meantime the navigation uses a crooked channel beyond the intersection, which has been partly dredged. The depth of water in the northern entrance basin of the port is about 21 ft., but in the four great docks 23 ft., with tidal gates, so that the vessels at low tide may be afloat.

The plan also provides facilities for "inflammables"—coal, petroleum, gasoline, naphtha, and some explosives. The Standard Oil Company of New York is now arranging to bring bulk oil in tank steamers to Argentine, and the Shell Transport Company is preparing to make a specialty of the importation of fuel-oil from Texas and the Dutch East Indies.

The work of enlargement of the port is divided into sections, so that it can be carried out section by section, as the increase of commerce will require. The general plan also includes the protection and deepening of the entrance-channels.

One of the principal ports of the country is Rosario. Ocean navigation reaches it, and, for that matter, reaches Colastiné, the port of the City of Santa Fé, the capital of the province.

The Great Rivers of the Argentine Republic.

Before concluding this brief report on my investigations in the Argentine, I am fully convinced that a report touching on the possibilities of agriculture would not be complete unless some information or particulars were given of the vast rivers of that great republic. Although I have seen the majority of the most important rivers in the Argentine, and was very much impressed with their vastness, I am nevertheless not an expert on the subject of great rivers. I, therefore, beg to quote from the work of perhaps one of the greatest living investigators of the enormous rivers of South America, Elmer E. Corthell, D.R.S.C. I may also point out that Elmer E. Corthell has for years studied and investigated nearly all the large rivers of North America, and his comparisons of them with the rivers of South America must prove interesting to New Zealand people.

In the year 1899 the Argentine Government conceived a very extensive project of river and harbour improvements, and at that time asked the United States Government for an expert engineer to execute the plans. The result was that Elmer E. Corthell, D.R.S.C., was selected, and the extracts quoted are from the work on his two years' labours in the Argentine.

My object in bringing this question of rivers before the agriculturists of New Zealand is with a view to pointing out the advantages this great republic holds over many other agricultural exporting countries. In the first place it must be remembered that where a country has so many marvellously large rivers penetrating the agricultural districts, in some cases to the extent of four hundred miles, they afford an easy and ready means of conveying the farmers' products to the sea-coast at a much lower cost than by railways. That is not all. In many of the best agricultural districts these great rivers act as a valuable source of irrigation for the land. Even the smaller rivers assist in this direction, for the reason that when slight floods take place a valuable amount of plant-food is left on the land, which naturally tends to add to the general fertility of the soil. Dealing with this subject, Mr. Corthell says,—

"First, a deep shore-line of the Gulf of Mexico, in the United States, when the site of Galveston was far out in the waters and the coast was a hundred miles inland from the site of New Orleans—a wide and deep estuary a thousand miles long, reaching into the heart of the continent to between St. Louis and Cairo, where, at Cape Girardeau, it met the ridge of the Ozark Mountains stretching across the valley and holding back the ancient great lake, which covered Chicago 200 ft. deep and spread over all the great prairie States, and received and distributed over its bed the immense sediments of the Missouri and other great rivers in the north. Then came the cyclic change, lifting Florida out of the water and turning continental drainage north, cutting its way through the alluvion to Hudson's Bay. Then the breaking-down of the Ozark barrier, the draining of the submerged area, the subsequent filling of the estuary, and the advance of the alluvial lands into the gulf to their present line, 110 miles beyond New Orleans. A great and wonderful beneficence for the use and convenience of man by the Great Architect of the universe.

"Had not my engineering experience upon the Mississippi River and its delta drawn my attention to this extremely interesting ancient history of the great river of North America, I might not have been so deeply impressed by its remarkable similarity to that of the Paraná River in South America; and for both histories I am indebted to engineering investigators, General Warren in the first instance, and Colonel George Earl Church, an American engineer, in the second instance, the latter probably better acquainted by personal contact with the geography and hydraulics of South America than any living man. I am indebted to him and to the Royal Geographic Society, of which he is a director and a correspondent, for most of what follows in relation to this *ancient* history of the great rivers of Argentine and Central South America.

"There are four great breaks in the mountain-fringed continent, which we call its great commercial doorways—the Orinoco, the Amazon, the La Plata, and the deep indentation of Bahia Blanca—one in Venezuela, one in Brazil, and two in Argentine. The three river-basins occupy two-thirds of the entire area of South America.

"The two with which we are most interested are the La Plata and Amazon, which have areas respectively of about 1,200,000 and 2,722,000 square miles. But if we deduct from the latter the valley of the Tocantins, which has no direct connection with it, the valley of the Amazon is 2,368,000 square miles; its principal branch, the Maderia, has a volume of discharge nearly equal to the Amazon itself, and at the falls, which I shall refer to later, it carries annually a volume equal to that of the La Plata, which has a minimum flow of about 534,000 cubic feet per second and a maximum of over 2,000,000—a river 80 per cent. larger than the Mississippi, the Father of Waters, if we compare their mean annual discharges, the former being about 288 cubic miles and the latter 156 cubic miles. The Paraná (the 'Mother of the Sea' in Indian language), the principal affluent of the La Plata, is itself 46 per cent. larger than the Mississippi, its mean annual discharge being about 230 cubic miles.

"What a river the La Plata must have been in ancient times, when it had a maximum discharge of 4,000,000 cubic feet per second, well up towards the modern Amazon, estimated to be 5,297,000, and greater than the ancient Amazon!

"I have described the ancient conditions of the Mississippi—the Gulf of Mexico as a great estuary and a deep shore-line extending well into the heart of the North American continent. The same conditions existed in the contour-line of South America in the La Plata estuary. It extended fourteen hundred miles into the continent, and was four hundred miles wide, eleven times greater than the Empire State. It was the great Pampean Sea, receiving the drainage not only of the present Paraná and its tributaries, but of the great Maderia River, with its immense discharge of waters and sedimentary matters—the source of great alluvial formations discharging into a sea two-thirds the size of the Mediterranean.

"When, in the processes of nature, the great under-water plains of rich soil has been formed during the comparatively short period of less than one hundred thousand years, a dam was thrown across the Madeira by the rivers Grande and the Parapiti coming down from the Andes, and a deposit more than 170 ft. deep occurred forming this dam, which produced the ancient Lake Mojos with an area of about 115,000 square miles, larger than that of the Great Lakes of North America combined, which is less than 94,000. The remarkable action of these rivers and the changes caused by it are graphically told by Colonel Church in his paper upon 'Argentine Geography and the Ancient Pampean Sea.'

"'The Grande and the Parapiti entered the plain with a northern trend to contest with the great river of the north the possession of the gap. They struck it almost at a right angle, and slowly pushed their rival eastward over against the Chaco base of the "Chiquitos Sierras." Here the final conflict must have taken place, as the Grande and Parapiti threw their dam across the outlet of the Mojos River, thus cutting off its exit into the ancient sea. No doubt the giant stream waged fierce war for thousands of years to keep its channel open, alternately sweeping away the barrier and again yielding to the ceaseless volume of sand and clay, which, visible to-day, confirms the victory of the Grande and Parapiti. The dam having finally become permanent, the formation of the ancient Lake Mojos was assured. When it reached the level of the lip of Guajará-mirim its waters commenced to tumble over it and carve their way to the Amazon. Since then huge volumes of alluvium have poured down the northern slopes of the Bolivian Andes; the ancient lake is now almost loaded with material, but it is not yet entirely obliterated. The muddy silt which covers the surface of the basin is so fine that when an Indian goes up stream to the mountains his friends ask him to bring back a stone that they may see what it is like. Since forming the dam the Rio Grande has slowly been returning westward down the counterslope which its own alluvium creates.'

"During the process we have described the ancient lake and the Pampean Sea were connected, and their relation was similar to that of the Black Sea and the Mediterranean. Traces of it are still observable, notably the great, low, flooded morass of Xarayas, on the upper Paraguay River, and the ancient delta of the Paraná, including the Ybará Lagoon. The Selina Grande was also an arm of it—a great inland fiord. The sea, moreover, must have covered large areas of the provinces of Paraguay, Corrientes, Entre Rios, and Uruguay, and before the uplifting of the country it extended south-west to the Rivers Chadi-Leofu and the Colorado, lapping round the southern slope of the Ventana Range until the curved rim, concave to the north-east, which connects this with the Sierra de Cordova, was sufficiently elevated to completely cut off its south-western extension.

"This range was high enough to lodge the glacial rocks coming from the Andes, one of which, at Tandil, is so poised and delicately balanced that the hand can rock it, but it cannot be dislodged. This range later prevented the entrance of the destructive sea, protecting the great area from its waves.

"Then came another factor into the beneficent problem of the Creator. Instead of draining the waters from the great deposits under the Pampean Sea, as He did in North America, He lifted the Andes higher, and with them their Atlantic slopes, until the latter were ultimately lifted to their present level, forming the 'Plains of the Pampas,' the soil of which is 50 ft. deep and of surpassing richness—an area of 600,000 square miles, one-fifth the size of the United States and five times that of Great Britain. Thus by cyclic changes in the Northern Hemisphere, and by fluvial and sedimentary action and siesmic changes in the Southern Hemisphere, have been formed the great interior agricultural regions of the United States and Argentina.

"Let me now quote from Mr. Revy's work on 'Hydraulics of Great Rivers' (Argentine rivers which he surveyed), where he compares the rivers as we now find them with others well known,

"'Great as the volume of the Paraná River at its lowest summer level is, immense in comparison to the largest European river, and much larger than that of all the European rivers put together, it is but a small fraction of its flood-volume during exceptional rises; and we can only wonder at the magnitude of the sources which for months, nay, for whole years together, pour forth inconceivable masses of sweet water, every drop of which has been raised by the power of the sun from the Pacific and Atlantic Oceans above the tops of the highest mountains of Brazil and the Andes.

"'The Mississippi, in the United States of America, is not unlike the Uruguay in dimensions and other features—we have similarity in width, depth, currents, and fall, although the North American is the larger of the two. Comparing, however, the Paraná with the Mississippi, the former might claim the latter as his eccentric daughter under fourteen. The low-water dimensions measure a river's greatness, although things of different natures and character do not bear strict comparison. What we, however, understand by greatness is possessed in an exceptional degree by the Paraná.'

"In order, further, to compare the Paraná River with others, it may be stated that its annual flow is double that of the Ganges, three times that of the St. Lawrence, four times that of the Danube, and five times that of the Nile. We have records of 380 cubic miles in one year.

"There are differing conditions of importance between the Paraná and the Mississippi, explaining the causes of the greater discharge of the Paraná. While they both flow south, one flows from colder to warmer and the other from warmer to colder regions; and it is in the warmer regions in both cases that the rainfall is the greater. On the Mississippi, in the northern regions, where we find the greatest drainage-area, the rainfall is about 35 in. per annum; in the southern, where the area is less, the rainfall is 60 in. per annum. With the Paraná there is a rainfall of about 60 in. in the northern part, where the drainage-area is greater, and about 40 in. in the southern part, where it is less.

"The length of the Paraná River is about three thousand miles; its navigable length, between Cuyabá in the north and the mouth of the Paraná in the delta of the La Plata, is 1,825 miles. The Uruguay River, from San Javier to the delta of the La Plata, has a navigable length of 603 miles. The Paraná River is made up of the two important rivers which unite at the City of Corrientes, the Paraguay and the Alto Paraná. The length of the latter above Corrientes to the falls of the Yguazú is 365 miles and it is navigable nearly to that point. These wondrous falls excel in beauty, as well as exceed in dimensions, the Niagara Falls. The latter are 160 ft. high, as a maximum, and four-fifths of a mile long, including Goat Island. The Yguazú are 213 ft. high in one leap and 106 ft. in two leaps, and two miles and one-third long, with, at times, an immense volume of water. The gorgeous and varicoloured foliage of the luxuriant subtropical vegetation which abounds on all sides adds a charm to the falls. They rank among the most beautiful and wonderful works of the Creator. The 'remolinos,' or whirlpools, below the falls equal the famous whirlpool at Niagara.

"The Uruguay is an entirely different river in every respect from the Paraná. It is at times a mighty river rivalling the Paraná; at others it sinks into comparative insignificance. The Paraná is a great river at all times. The Paraná is a type of a truly great river; the Uruguay represents a mighty torrent of extraordinary dimensions. The Uruguay rises near the Atlantic seaboard in Brazil, in the Sierra del Mar, then runs west to the highland of the territory of Missiones. These highlands prevent it from uniting with the Alto Paraná River at that point, which is only about sixty-eight miles distant. Along six hundred miles of its course from San Javier to Concordia the bed of the river is filled with rocky ridges, which at low water prevent continuous navigation, but during the floods, which are quite sudden but not long-continued, the river is everywhere navigable. The river rises, in floods, at Concordia about 46 ft. Compared with the Paraná, it is a clear stream, carrying very little sediment in suspension. The Paraná is an entirely different river. Its source being in the tropical and rainy region of Brazil, on the flanks of the Andes, its floods are much longer-continued. At the confluence of the Paraná and the Alto Paraná at Corrientes the rise of the floods is about 33 ft.; at Rosario, 225 miles above Buenos Aires, it is from 19.7 ft. to 23 ft., or 23½ ft. in extreme floods. When these occur the river is about twenty-three miles wide, covering the entire country with a depth of 6 ft. to 10 ft., and extending to the highlands of the Province of Entre Rios.

"The physical characteristics of the bed of the river are consequently entirely different from those of the Uruguay; the bed of the latter is stable, that of the former very unstable. The sedimentary matters carried in suspension, however, are very much less than those of the Mississippi; probably only one-tenth of the amount carried in the Mississippi in times of flood. For this reason the changes in the bed and banks are less radical; the most noticeable change is the movement of the islands and bars down stream. For example, the Island of Espinillo, in front of the City of Rosario, lying in the middle of the river and about two miles and a half long, has moved, flanking, down stream about two miles and a half in the last fifty years, and by this movement the advancing bar of the island has approached the river-bank in front of Rosario and closed up the navigation channel. The maximum velocity in great floods often reaches 6½ ft. per second, although usually it is much less, equal to that of the lower Mississippi.

"Both rivers are susceptible of improvement by dredging, the one to Asunción, which is 842 miles above the mouth, and the second to Concordia, which is 230 miles above the mouth. In the Paraná there is nothing but sand to be removed throughout its entire length; in the Uruguay there are several places where it is necessary to remove rock and gravel. But, generally, the channel can be deepened by hydraulic or suction dredging.

"The National Government is under obligation, by the law passed by Congress for building the Port of Rosario, to make and maintain a depth of 21 ft. at low water in the Paraná River from the head of the Delta to Rosario, and in the delta of the La Plata to Buenos Aires a depth of 19 ft.

at low water, which is about 21 ft. at mean high tide. It has been proposed to make and maintain a channel of the following dimensions: From the mouth of the two rivers, at the Island of Martin Garcia, at the head of the La Plata estuary, to Rosario, a depth of 21 ft. and a width of 328 ft. Rosario to Santa Fé, 292 miles above Martin Garcia, 19 ft. deep and 328 ft. wide; Santa Fé to Corrientes, 10 ft. deep, and the same depth to Asunción. Santa Fé, or its seaport Colastiné, is the head of ocean navigation; above that point it is river navigation by steamboats.

"On the Uruguay River it is proposed to make a channel 19 ft. deep and 328 ft. wide from Martin Garcia to Concepcion del Uruguay, 137 miles above Martin Garcia, and thence 15 ft. deep to Colon, and 9 ft. deep and 8 ft. over the rock to Concordia, which is 230 miles above Martin Garcia.

"The low-water plane, or zero, in both rivers is that of extraordinary low water, so that, generally, the low water does not reach this plane within about half a metre to a metre. Consequently, there can generally be depended upon from 2 ft. to 3 ft. more water than I have stated. Between Rosario and Buenos Aires there are now no bars over which there is not 21 ft. of water at zero, although two of them need to be dredged and buoyed in order to make a straighter channel. This the Government is prepared to do.

"As to the Port of Rosario: a contract has recently been made, under the law of Congress, to make a modern seaport at this point, with all the latest and best facilities for handling cargo. The commerce of Rosario is at present 1,500,000 tons per annum. It is a very important exporting-point for cereals, and when the port is completed according to the plans adopted, it is expected to be an important importing-port as well. There are ports below Rosario, such as Villa Constitución, San Nicholas, and San Pedro, and above Rosario, Diamante, Santa Fé, Colastiné, and Paraná. On the Uruguay River, Concordia, at the head of steamboat navigation, is an important importing and exporting port for that section of the country. Its registered tonnage is about half a million tons, and the actual-weight tonnage about 100,000.

"The country between the Paraná and Uruguay Rivers is practically isolated from the rest of the country, and its situation is very similar to that of the country lying between the Euphrates and Tigris; for that reason it has been called the 'Mesopotamia Argentina.'

"There are at present in this area three railroad systems—the Argentine North-eastern, which runs from Corrientes, on the Paraná to Monte Caseros, on the Uruguay, and from there to Santo Tomé, on the same river; the Argentine Eastern from Monte Caseros to Concordia; and the Entre Rios Railroads, the main line of which connects Paraná and Conception del Uruguay, with branches to Victoria, Gualeguay, Gualeguaychú, and Villaguay. Within a few months a connecting-line will be completed to Concordia, forming a link between the Argentine Eastern and the Entre Rios systems. It has been proposed to unite these three systems and to extend the Argentine North-eastern from Santo Tomé to Posadas on the Alto Paraná, passing through the colonies which the Government is establishing in that territory. Posadas is its capital. The Central Paraguay Railroad, which runs in a south-easterly direction from Asunción, it is proposed to extend to Villa Encarnación, a small town on the opposite side of the river from Posadas; to change the gauge, which is 5½ ft., to the normal gauge of the other three railroads, which is 4 ft. 8½ in.; make a transfer by car-float at Posadas; extend the Entre Rios railroads to a port of deep water, either on the Paraná or Uruguay, and do a 'thorough' business between Asunción and this new seaport, which will be only a few hours distant from Buenos Aires.

"With the Paraná River improved to Asunción and the Uruguay improved to Concordia, with the railway systems united and extended to a good seaport, this great interior district of the country will have an ideal system of transportation, and the shipper may take his choice to ship by rail or by water, thus establishing a very useful and reasonable competition between water and railway, to the great advantage of the people.

"In reference to the Rio de la Plata itself, it is an immense shoal estuary. It is the depositing-ground of the great Paraná River. This estuary, in a not very remote period, extended above Santa Fé; this is shown by the comparison of old maps, of which ninety-two have been collected and copied and placed in the Library of the Ministry of Public Works. These maps date from the year 1529 to 1885. Even in this comparatively short period, remarkable changes are shown in the delta of the Paraná, which is now a true delta, almost exactly in the form of the Greek letter Δ. It is forty miles across its face; it slowly extends itself in the head of the estuary, and through the delta nearly a dozen outlets of the Paraná River find their way. It is very much like the deltas of the Danube, Ganges, and Mississippi.

"The superficial extension of the Rio de la Plata exceeds 18,000 square miles; it is about 186 miles long and varies in width from 186 miles at the ocean, between Capes San Antonio and Santa Maria, to 1.12 miles at the extreme point of the head of the estuary, at Punta Gorda.

"To understand the physical conditions of the estuary, it is necessary to divide the Rio de la Plata into superior and inferior, or upper and lower. The Rio de la Plata Superior lies above a line extending between La Plata and Colonia, the Inferior below that line to the sea. Over a distance of about twenty-five to thirty miles between Martin Garcia and the anchorage of Buenos Aires there is a normal depth through the best channels of from 16 ft. to 20 ft. at low water.

"The National Government has recently completed the dredging over the San Pedro bar lying in this region, increasing the depth of 18½ ft. to 21 ft. where there was formerly only 15 ft. In the Canal de las Limetas or Nuevo Canal, by natural forces and by the constant movement of steamers there has been obtained a depth of about 19½ ft. or 21½ ft. at mean high tide. Opposite Farallon, a rocky point on the Uruguay shore and opposite Buenos Aires, there is along the course of navigation about 19½ ft. at low water. The Government has buoyed with luminous buoys the entire route from Buenos Aires to the mouths of the Paraná River, the Bravo, and the Guazú, and has placed a floating semaphore below Martin Garcia for the benefit of navigation, recording constantly by signals by day and by night the depth of water in the channel It is now proposing to

connect this semaphore by a telephone cable with the telegraph cable of Martin Garcia, so that communication may be established between the ships lying at anchor (waiting for the tide or passing near the semaphore) and the offices of the agents at Buenos Aires or Monte Video.

"A careful study of the different conditions in the delta of the La Plata shows that the only method of improvement in such a vast expanse of water is by dredging and buoying the best channels. In the lower Rio de la Plata there are very serious conditions. A bar on which there is a least depth of 20 ft. at low tide lies between the anchorage of Buenos Aires and Monte Video. The material in this bar is very soft, and vessels plough their way through it on ordinary tides, but the great extent of the bar is the serious condition. Between the 24 ft. curves straight through this bar there is a distance of 24 sea miles. To make a channel by dredging would require the removal of probably ten and a half to thirteen million cubic yards; and it is very doubtful if, on such broad extension of water and in such soft material, a channel could be maintained. But it is hoped that the plan now proposed of anchoring five lightships in the line of navigation and in the direction of the current, and which can be seen from each other, will have an effect upon the bar by the continued movement of deep steamers through it. The examination of the Rio de la Plata Inferior has been intrusted by the Government to the Ministry of Marine, which is making very extensive surveys and examinations over the entire area.

"The estuary at this point is forty-six miles wide, and five high towers on shore and others anchored within the area to be surveyed are necessary in order to cover this great Punto Indio bank."

"These are the general physical conditions of the Rio de la Plata and its great tributaries.

"The very important project of making a deeper channel of access to the Port of Buenos Aires and enlarging the port, to give it not only a greater area and more facilities, but greater depth in the enlarged part, is now before the Government, and the plans for it (made by myself) have been approved. There are alternate projects to meet the commercial necessities of the country: one is to deepen the present Port of La Plata and endow it with more facilities, where vessels drawing 24 ft. or 25 ft. may come in and go out at any stage of the tide; or to build a deep-water port, with a depth of not less than 30 ft., on the seaboard outside of the difficult conditions of the Rio de la Plata. A concession has been granted and the project submitted to the National Government for an artificial port in the great bay of Samboronoon, which is nearly opposite Monte Video, and another concession for a port at Mar Chiquita, near Mar del Plata on the ocean, has also been granted.

"In addition to the great drainage basin of the La Plata, there are further south the large rivers Rio Negro and Colorado, which, combined, have a drainage-area of 464,000 square miles. The channels are not susceptible of improvement for a large commerce, but they will in the future furnish water for an extensive irrigation and steamboat navigation."

Measures, Weights, Values, etc.

Owing to the fact that I did not have the time to figure, or, rather, convert all the statistics which I have quoted from the Spanish metric system into English, I quote the following particulars:—

Measures.

Miles and Kilometres.—8 kilometres = 5 miles approximately (4·971 miles); 100 kilometres = 161 miles approximately (160·932 miles).

Acres and Hectares.—1 hectare = 2½ acres approximately (2·471 acres).

Argentine "Baras" and Yards.—100 "baras" = 97·70 yards.

A metre = 39·37 English inches.

Weights.

Argentine Ton and English Pound.—1 Argentine ton = 2,025·60 lb.

Argentine Ton and Argentine Pound.—1 Argentine ton = 2,000 lb.

Argentine Ton and Kilogrammes.—1 Argentine ton = 918·80 kilogrammes.

One hundred kilos. (called a "quintel" or "fanega" in Spanish) is 220 lb. in English = 3·67 bushels of 60 lb.

One hundred kilos. is an Argentine ton.

2,205 lb. in English = 4·6 quarters of 480 lb.

Values.

£1 sterling (*litra esterlina*) has the fixed value of $5.04 Argentine gold (*calle pesos "oro sellado"*). The gold dollar in August, 1903, was of 127.27 per cent., or, in other words, $100 gold was equivalent to $227.27 currency.

APPENDIX D.

E.—Works of Reference.

The following commercial publications are on hand at the Head Office of the Industries and Commerce Department, and are available there for public reference:—

Ceylon Handbook and Directory for 1902.
Canadian Trade Index. 1901.
South African Trade. General. By T. Nichol Jenkin. 1902.
South African Trade. Engineering. By Ben. H. Morgan. 1902.
South African Trade. Textile and Soft Goods. By S. W. Witham. 1903.

Annual Report of the Co-operative Wholesale Societies (Limited), England and Scotland. 1902.
The Delagoa Directory (Lorenzo Marques). 1902.
The Shippers' Guide to South and East Africa.
General View of Commerce and Industry in the Empire of Japan. Prepared by the Paris International Exposition of 1900.
American Trade Index. Published by the National Association of Manufacturers, Philadelphia, P.A., U.S.A. 1900.
Sources of the Agricultural Imports of the United States. 1896-1900.
Distribution of the Agricultural Exports of the United States. 1896-1900.
Export Hand Adressbuch von Deutschland. 1902-3.
Report upon the Trade of Kobe, Japan. 1901.
Annual Report, Chamber of Commerce, Port Elizabeth, South Africa, containing complete Trade Returns and Statistics. 1902.
Annual Report, Chamber of Commerce, Durban, South Africa. 1902.
Guide to South African Ports. Issued by William Cotts and Co. 1901.
South African Customs Union Tariff. 1902.
Regulations of the Port and Harbour of Natal.
Report of Port Captain, Colony of Natal. 1902.
China Imperial Maritime Customs. Return of Trade and Trade Reports. 1901.
Tariff and Regulations, Port Elizabeth Harbour Board.
Engineer's Report, Natal Harbour-works. 1900.
Straits Settlements: Return of Imports and Exports for 1901.
Tables relating to Trade of British India with British Possessions and Foreign Countries up to 1901.
Review of the Trade of India up to 1901.
Report of the Annual Meeting of the Associated Chambers of Commerce of the United Kingdom held in London, March, 1903.
Thirteenth Annual Special Issue of the *Timber Trades Journal and Sawmill Advertiser*. 1903.
Forty-first annual Report of the Cape Town Chamber of Commerce; with the President's Address, Statistics, and other Commercial Information. 1902.
Dock, Port, and Harbour Regulations for Table Bay, Cape of Good Hope, dated November, 1902.
Fairplay. Weekly Shipping Journal, London.
Guide to South Africa. Issued by the Union Castle Steamship Company. 1902-3 Edition.
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