

1889.  
NEW ZEALAND.

# NEW ZEALAND COURTS AT PARIS EXHIBITION

(REPORT UPON THE).

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

No. 1.

THE AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

SIR,—

7, Westminster Chambers, London, S.W., 28th June, 1889.

I now beg to send you the first proofs of the catalogue of New Zealand exhibits at the Paris Exhibition. It has not been possible to print it finally in time for this mail, still less to translate it into French; but I need not delay any longer a brief report of what has been done.

There are two Courts, as you are aware, one of them being in the Palace of Industries, at the Champs de Mars, and the other in the Agricultural Galleries at the Quai d'Orsay. The chief exhibits shown in the Industrial Palace are minerals, wool, hemp, kauri-gum, birds, modelled Maori figures, and photographs; in the Agricultural Gallery, cereals and grasses, woods, preserved meats and fish, maps, pictures, and photographs.

The bulk of the auriferous and argentiferous ores are exhibited in the Industrial Palace, in an extensive show-case divided into compartments, containing the quartz and minerals sent by the various mining companies in both Islands; there are also two trophies, comprising antimony, copper, and other ores, and several glass show-cases containing selected specimens placed on glass stands and trays. The various samples and specimens are distinguished by proper descriptive cards, and as none of them are above the line of sight they are all equally capable of being examined by visitors.

A large amount of interest has been manifested in the minerals, and frequent inquiries have been made as to the extent and nature of our mineral resources generally. It is a pity that no specimens of coal were sent, as the coal industry has so greatly increased of late years.

The amount of wool being hardly sufficient for an adequate representation, I asked Messrs. Redfern, Alexander, and Co., and Messrs. Jacomb and Son, to select a number of fleeces in addition, to be resold at the close of the Exhibition. Mr. Seaward (of Messrs. Jacomb, Son, and Co.) was sent over to set out every fleece separately to the best advantage; and he did his work so well that I may safely say (not having done it myself) that the New Zealand wool is the best-shown of any wools in the Exhibition.

With regard to hemp, I asked Messrs. Weddell and Co. and Binnie and Co. to select some of the best sorts, to be added to those sent from the colony. I also obtained through Messrs. Hale and Son, leading brokers, additional samples of gum, showing the varieties in kind and value up to the highest market-price of £15 per cwt.

Sir Robert Herbert, K.C.B., contributed an attractive exhibit of New Zealand birds, and those selected some time ago for Sir James Maitland were also placed in a prominent position in the court.

It will be remembered that two of the models of Maori figures which we exhibited at the Colonial and Indian Exhibition in 1886 were not disposed of: these, with two others, were dressed with mats, spears, &c., of Native manufacture. Sir Walter Buller gave me valuable help in the preparation and dressing of the figures, which at once became the greatest attraction of the court, and are always surrounded by a crowd.

The exhibits of inlaid woods have been much admired, and it is a pity that many more of the same kind were not sent.

I have referred in a previous letter to the trophy representing the amount of gold raised in the colony, which is a prominent feature in the court at the Industrial Palace. The valuable show-cases so kindly lent to me by Sir Philip Cunliffe Owen, a number of which I was able to place at the disposal of the Victorian Commission, give an ornamental appearance to both the New Zealand Courts, besides saving us many hundreds of pounds which must otherwise have been spent.

The New Zealand woods are shown in the Agricultural Gallery, where they have always attracted much notice, especially from country people of the working-classes. In accordance with Sir James Hector's suggestion, the specimens sent Home were all prepared anew, one-half of the surface being left to show the wood in its natural state, and the other half carefully polished.

The frame of the cereal trophy had been designed in the hope of its serving to display a thoroughly representative exhibit of the best New Zealand grain in the sheaf; but, unfortunately, the sheaves of wheat, barley, and oats sent to me were all of an inferior kind, and arrived in poor condition. Round the cereal trophy a number of glass jars are ranged, containing grain and seeds of various sorts, while grain is also shown in bulk. The separate show-cases sent by the Canterbury Farmers' Co-operative Association, the Auckland Roller Mills, the Auckland Chamber of Commerce, and other exhibitors, are placed in as good positions as the space allowed.

In this court also are shown all the preserved meats and fish of the various companies carrying on that industry. These exhibits have been the subject of frequent inquiries. Professor Kirk's framed specimens of New Zealand foliage have been divided between the two courts.

New Zealand, as a separate "country," was entitled to two jurors, and one supplemental juror, on the International Jury. I nominated Professor Roberts-Austen as juror in the mineral class; but after consenting to act he found that his position as juror to the British section would prevent his also acting for us; whereupon I nominated Mr. Malfroy in his stead. Mr. Bowman, whose report on wools at the Colonial Exhibition you will remember, was kind enough to consent to act as our juror in the textile class; but I fear he will not be able to be in Paris when the jury in that class begins its labours. I have not nominated any supplemental juror.

The work of the International Jury will be rather complicated. First there is the "juries of classes," then the "juries of groups," and, lastly, the "Superior Jury." The juries of classes will examine all the exhibits, classifying in order of merit, and without distinction of nationality, the exhibitors to be rewarded; the juries of groups will then recommend to the Superior Jury how the rewards should be distributed; and the Superior Jury will decide in the last resort according to order of merit. The juries of classes are now engaged in visiting the various courts, and the jurors in the mineral and cereal classes have already expressed great interest in the New Zealand exhibits.

There are many points on which it will be necessary for me to ask for instructions, especially as to the disposal of the exhibits at the close of the Exhibition; but on these it will be time enough to address you later on. In the meantime I think I may say that your courts look as well as might have been expected, considering the exhibits that were sent to me. An amount of interest which was quite unexpected by me has, in fact, been expressed by a large number of visitors who have seen the courts; and I have often felt great regret that, since New Zealand was to be represented at Paris at all, the colonists, who are so deeply concerned in her industries and varied resources, did not combine to insure a much more effective and attractive display than the materials I had enabled me to make.

I have, &c.,

The Hon. the Colonial Secretary, Wellington.

F. D. BELL.

## No. 2.

The AGENT-GENERAL to the Hon. the COLONIAL SECRETARY.

SIR,—

7, Westminster Chambers, London, S.W., 12th July, 1889.

I now beg to send you some copies of the catalogue of New Zealand exhibits at Paris, in its final shape. I propose to strike off an edition of five hundred, and a supply will be sent in the next mail-box for distribution among the mining companies and exhibitors, and otherwise as you may direct.

Several of the juries of classes have visited the New Zealand Courts—especially the juries for minerals, wools, and cereals—and have expressed favourable opinions; and I have reason to think you will be satisfied with their awards. One of the students from the School of Mines has assisted Mr. Malfroy in translating the cards on the mineral exhibits into French, so that the right terms may be used.

Professor Kirk's valuable work on the forest flora, referred to in your letter No. 65, of 9th May, will be carefully exhibited.

I was very glad to get your telegram of the 1st instant, approving of Mr. Malfroy's services being retained. Both he and Mr. Lloyd, the Superintendent of the Courts, have done all their work extremely well.

I have, &c.,

The Hon. the Colonial Secretary, Wellington.

F. D. BELL.

## Enclosure in No. 2.

UNIVERSAL INTERNATIONAL EXHIBITION AT PARIS, 1889.—NEW ZEALAND COURTS.  
CATALOGUE.

*New Zealand Commission.*—Sir Francis Dillon Bell, K.C.M.G., C.B., *Executive Commissioner*; Hon. Sir John Hall, K.C.M.G.; Hon. Morgan Stanislaus Grace, M.L.C.; George Beetham, Esq., M.H.R.; William Montgomery, Esq.; Edward Withy, Esq., M.H.R.; Thomas Peacock, Esq., M.H.R.; Henry Brett, Esq.; Philip Robinson, Esq.; Patrick Comiskey, Esq.

*Officer in Charge of Minerals.*—Camille Malfroy, Esq.

*Superintendent of the Courts.*—E. H. Lloyd, Esq.

### INTRODUCTION.

#### *General Description.*

The insular Colony of New Zealand consists of two principal Islands, called the North and South Islands, and a small island at the southern extremity, called Stewart Island. There are also several small islets, such as the Chatham and Auckland Isles, that are dependents of the colony. The entire group lies between 34° and 48° S. lat. and 166° and 179° E. long. The two principal

Islands, with Stewart Island, extend in length 1,100 miles; but their breadth is extremely variable, ranging from 46 to 250 miles, the average being about 140, but no part is anywhere more distant than 75 miles to the coast.

The total area of New Zealand, in round numbers, is about 100,000 square miles, or 66,000,000 acres—the North Island being 44,000 square miles, or 28,800,000 acres; the South Island being 55,000 square miles, or 36,560,000 acres; Stewart Island being 1,000 square miles, or 640,000 acres. It will thus be seen that the total area of New Zealand is somewhat less than Great Britain and Ireland. The North and South Islands are separated by a strait only thirteen miles across at the narrowest part, presenting a feature of the greatest importance to the colony by facilitating inter-communication between the different coasts without the necessity of sailing round the extreme points of the colony.

#### Configuration.

New Zealand is mountainous, with extensive plains lying principally on the eastern side of the mountain-range in the South Island, while in the North Island they lie on the western side, the interior or more mountainous parts being covered with dense forest; while those of the South Island are for the greater part open, well grassed, and used for pastoral purposes. In the North Island the mountains occupy one-tenth of the surface, and do not exceed from 1,500 to 6,000ft. in height, with the exception of a few volcanic mountains that are very lofty, one of which, Tongariro (6,500ft.), is still occasionally active. Ruapehu (9,100ft.) and Mount Egmont (8,300ft.) are extinct volcanoes that reach above the limit of perpetual snow, and the latter is surrounded by one of the most extensive and fertile districts in New Zealand. The range in the South Island, known as the Southern Alps, is crossed at intervals by low passes; the greatest height of the main range is from 10,000ft. to 14,000ft. in Mount Cook, and it has extensive snow-fields and glaciers.

#### Vegetation.

A considerable part of both Islands is clothed with valuable timber. The proportion of forest-land to the whole country, ascertained in 1873, was as under:—

	Percentage of Forest-land.
North Island—	
Auckland ... ..	7·20
Hawke's Bay ... ..	8·19
Taranaki ... ..	65·56
Wellington ... ..	42·85
South Island—	
Nelson ... ..	28·86
Marlborough ... ..	18·38
Canterbury ... ..	2·07
Otago ... ..	} 11·84
Southland ... ..	

The indigenous forest of New Zealand is evergreen, and contains a large variety of valuable woods, which resemble the growths of Tasmania and the continent of Australia, most of them being harder, heavier, and more difficult to work than the majority of European and North American timbers. They vary, however, very much among themselves. Many varieties are very durable, and manuka, totara, kauri, black-birch, kowhai, and matai appear to be the most highly esteemed on the whole. The total value of timber exported from the colony since 1875 to the close of 1888 amounted to £1,366,616. A number of the native forest-trees and plants furnish good dyes from their bark. The Natives were acquainted with most of these, and dyed their flax mats and baskets with them.

Amongst the smaller plants the *Phormium tenax*, or New Zealand flax, is of especial value, the total export of this fibre from 1864 to 1888 being valued at £883,009. Large tracts of country are also covered with indigenous grasses of high feeding-quality, which support millions of sheep, and have thus been productive of great wealth to the colony. Many of the more valuable trees of Europe, America, and Australia have been introduced, and have flourished with a vigour scarcely ever attained in their natural habitats. In many parts of the colony the hop grows with unexampled luxuriance; whilst all the European grasses and other useful plants produce returns equal to those of the most favoured localities at home. Fruit, too, is abundant all over New Zealand. Even in the latitude of Wellington, oranges, lemons, citrons, and loquats are found, whilst peaches, pears, grapes, apricots, figs, melons, and, indeed, all the ordinary fruits of temperate climates, abound. Roots and vegetables of all kinds grow abundantly.

#### Population.

The population of New Zealand increases very rapidly. A census is taken every three years. The estimated population on 31st December, 1888, exclusive of the aborigines, was 607,380, showing that the population has increased two and a half times since the inauguration of the public-works policy in 1871. This rapidity of increase has of course been much assisted by immigration; but the high birth-rates, coupled with the low death-rates, usually prevailing in the colony have also contributed largely to this satisfactory result. The birth-rate of the year 1887 was 32·09 per 1,000, whilst the death-rate for the same year was 10·29 per 1,000.

The North Island contains a Native population of about forty thousand, divided into many tribes, and scattered over 45,156 square miles. The South Island Natives number but about two thousand, and they are spread over an immense tract of country, living in groups of a few families on the reserves made for them when the lands were purchased; for the whole of the South Island has been bought from the Native owners by the Government. As a rule, the Maoris are middle-sized and well-formed, the average height of the men being 5ft. 6in.; the bodies and arms being longer than those of the average Englishman, but the leg-bones being shorter and the calves largely

developed. In bodily powers the Englishman has the advantage. As a carrier of heavy burdens the Native is the superior, but in exercises of strength and endurance the average Englishman surpasses the average Maori.

#### *Scenery.*

The scenery of New Zealand forms one of its most attractive features. In the South Island the alpine region is rendered easily accessible by fiords that penetrate with deep water from the sea-coast into the heart of the Snowy Mountains. In the vicinity of Mount Cook the great glaciers, some of which exceed in size those of Europe, are easily reached by rail and coach; while in the North Island the wonders of the volcanic district, including thermal springs which possess medicinal qualities, can now be approached with equal facility.

#### *Sport.*

New Zealand cannot fail to become a tempting resort on a yet larger scale for sportsmen from all parts of the world. Almost all the streams and watercourses are well stocked with ordinary trout, and several of the larger rivers and lakes with salmon-trout, the latter reaching 25lb. in weight. The low lands teem with pheasants and quail, and in the mountains of Wellington and Nelson large herds of red-deer are now domiciled, enabling sportsmen during the open season to enjoy stag-hunting.

#### *Climate.*

The climate, which is singularly healthy, resembles that of Great Britain, but is more equable: the extremes of daily temperature only varying throughout the year by an average of 20°, whilst London is 7° colder than the North and 4° colder than the South Island of New Zealand. The mean annual temperature of the North Island is 57° and of the South Island 52°, that of London and New York being 51°. The mean annual temperature of the different seasons for the whole colony is—in spring 55°, in summer 63°, in autumn 57°, and in winter 48°. The climate on the west coast of both Islands is more equable than on the east coast, and the contrast between the respective rainfalls is most striking. Thus, in the North Island, Napier on the east has only half the amount of rain that falls in Taranaki on the west. But the South Island, with its longitudinal range of lofty mountains, exhibits this feature in a still more marked manner, for the rainfall on the west is nearly five times the amount on the east. The excess of precipitation on the coast is clearly illustrated by the distribution of the glaciers on the opposite sides of the range. Those on the west slope have an excessive supply of snow, and descend to a line where the mean annual temperature is 50° Fahr., while on the east slope they descend only to the mean annual temperature of 37°. The winter snow-line on the Southern Alps on the east side is 3,000ft., and that on the west side is 3,700ft.

#### *Government.*

The country is divided into counties and Road Boards, to which, and to the municipalities, local administration is confided. The seat of Government is at Wellington, which has a central position.

The Colonial Legislature, which meets once a year, has power generally to make laws for the peace, order, and good government of New Zealand. Parliaments are triennial.

Any man of twenty-one years and upwards who is a born or naturalised British subject, and who has held for six months a freehold of the clear value of £25, or who has resided for one year in the colony, and in an electoral district during the six months immediately preceding the registration of his vote, is entitled to be registered as an elector and to vote for the election of a member of the House of Representatives; also, every male Maori of the same age whose name is enrolled on a ratepayers' roll, or who has a freehold estate of the clear value of £25. The duty is imposed upon the Registrar of each electoral district of placing on the electoral roll the names of all persons who are qualified to vote. Any person qualified to vote for the election of a member of the House of Representatives is also, generally speaking, qualified to be himself elected a member of that House.

#### *Commerce.*

About three-fifths of the whole import and export trade of the colony is in direct connection with the Home-country, the remainder representing the commerce carried on with Australia, America, Mauritius, and South Sea Islands. The imports for the year 1878 amounted to £8,755,667, and the exports to £6,015,700, the former being equal to £20 13s. 6d., and the latter to £14 4s. 1d. per head of population. In 1888 the imports were £5,941,900, and the exports £7,767,325. The total value of import and export trade for the year ending 31st December, 1888, amounted to £13,709,225, the exports containing the following chief items: Wool, value £3,115,008; gold, £914,309; agricultural produce—grain £653,311, butter and cheese £197,170, frozen meat £628,129; kauri-gum, £380,933; tallow, £124,950; timber, £179,312.

The official return of New Zealand imports and exports for the first quarter of 1889 has just been prepared, and will be gazetted shortly. The exports during the first quarter of 1889 amounted to the unprecedented value of £3,417,734. This is not even approached by any previous quarter, and is by far the largest quarter's export that ever yet left the colony. The imports during the same period amount to only £1,721,988, as against £1,755,662 for the March quarter of 1888, although the first is usually the heaviest quarter of the year in respect of imports, mainly on account of the season's importation of drapery, &c. Thus the quarter's exports were as nearly as possible double the imports in value. For the year ended the 31st March the imports were only £5,908,226, an exceptionally low total, while the exports were £8,201,609, the latter being the largest ever recorded in New Zealand for one year, exceeding the imports by nearly two and a half millions sterling. The New Zealand imports for the last fifteen years (1874 to 1888), inclusive, amounted to £111,452,422, exceeding the exports by £15,227,307.

*Principal Industries and Productions.*

*Grazing.*—Wool is undoubtedly the most important production of New Zealand, its value as an export being more than double that of gold. The mildness of the winter season, which does not require that any special provision for the keep of stock during that period should be made, and the general suitability of the country for grazing purposes, with the growth of a superior class of wool, caused the attention of the early settlers to be much given to pastoral pursuits: grass-lands were looked up as sheep- or cattle-runs. The success attending the pursuit enabled the runholders to a large extent to purchase the freehold of their runs, or the best portions of them; and by improvements in fencing, and sowing with English grasses, which thrive remarkably well in the colony, the bearing capabilities of the land were increased many fold. The extent to which pastoral pursuits have been followed may be estimated by the quantity of stock in the colony in 1886 (when the census was last taken). The numbers of the undermentioned kinds were as follows: Horses, 187,382; cattle, 895,461; sheep, 15,254,198; pigs, 369,992. These numbers do not include the animals in the possession of aboriginal natives, no estimate of which can be given: while, however, possessing a considerable number of horses, they own but small numbers of sheep and cattle. The export of wool has grown, since the first settlement of the colony in 1869, to an export in 1888 estimated in value at £3,115,008. In ten years the increase in the quantity has been at the rate of 124 per cent. During the last few years the export value of wool has diminished, this being attributable partly to the increased manufacture of woollen goods in the colony, and partly to the lower price of wool in the European markets.

Within the last few years new employment has been found for capital and labour in New Zealand by the establishment of refrigerating-works. Beginning in 1882 with an export value of £19,000, the shipments of frozen meat have increased in five years so rapidly that this item now occupies third place in the annual value of exports, the total declared value of frozen meat exported in 1888 being £628,129. At the works of the New Zealand Refrigerating Company, at Dunedin and Oamaru, there were frozen 146,591 sheep and 460 cattle during 1887; and at the factory of the Wellington Meat Export Company there were frozen 104,249 sheep and 660 head of cattle. The charge made by the latter company for freezing meat is stated to be  $\frac{3}{4}$ d. per pound in all. A large quantity of dairy-produce, chiefly of butter, was also exported to England the same year by the aid of refrigeration, and there appears good reason for supposing that the channel to the world's market thus opened by science will add very materially to the value of the pastoral and agricultural industries of the colony.

*Gold.*—Second to wool only in value as an export is gold, which was discovered in 1842, less than three years from the foundation of the colony; but it was not practically worked until 1852, when the mines at Coromandel first attracted attention to the district of Cape Colville Peninsula, which at the present time forms the chief seat of true mining operations in New Zealand. The yield from those mines has up to the present time been over four and a half millions sterling; but this is small when compared with the quantity of alluvial gold obtained more recently in the South Island. The principal quartz-mines in the North are in Coromandel and in the Thames districts, about thirty miles apart. In those localities the reefs have been "proved" to a depth of over 600ft. below sea-level; but the best mines have as yet been principally confined to the decomposed and comparatively superficial rock. Veins have been discovered, and gold obtained, at all levels on the ranges, from the sea-level to an altitude of 2,000ft. The quantity of gold that has been obtained from some of those quartz reefs is very great; and for considerable distances the quartz has yielded very uniformly at the rate of 600oz. to the ton. Such reefs are, however, very exceptional in New Zealand, as elsewhere. Auriferous reefs are also extensively worked in the schistose rocks of Otago, and they occur at all altitudes, from the sea-level to a height of 7,400ft., the most elevated gold-mine in the Australasian Colonies being that opened during the year 1878 on the summit of Advance Peak, near the Wakatipu Lake. Several promising reefs have also been found in the Westland goldfields, amongst which may be mentioned a reef of auriferous stibnite at Langdon's Creek, near Greymouth, which yields from a few ounces to 99oz. of gold per ton; but up to the present time these reefs have not received the attention they deserve, except at Reefton and a few other localities. The importance of Reefton as a well-established mining district may be judged of from the fact that nine mining companies there, during the single year ending 31st March, 1878, divided as profit the sum of £63,508 among the shareholders. So far as this more permanent form of gold-mining is concerned, there is every reason to feel confident that it is still in its infancy in the colony, and that it only awaits the judicious application of capital for its development to a vast extent. Alluvial gold is chiefly found in the South Island, in the districts of Otago, Westland, and Nelson, in which mining operations are carried on over an area of almost 20,000 square miles. The alluvial diggings at Collingwood were discovered in 1858, those of Otago in 1861, and in 1864 the goldfields near Hokitika proved a great attraction to the mining population of New Zealand. The richest alluvial diggings in Westland usually occur in places very inaccessible for water-supply, the streams having cut their channels much below the surface of the country, so that an organized system of irrigation is necessary to obtain the required amount of water for the gold-washing. The sea-beaches are often highly auriferous, but only the shallow leads have been hitherto worked, owing to the influx of water. The recent adaptation of the "Wellman" and "Ball" suction dredger will now enable the deeper leads all to be successfully worked, so that a good revival of this form of alluvial gold-mining may be anticipated. The value of the gold exported from New Zealand for the year 1888 was £914,309, making the total value of New Zealand gold exported, from the year 1857 to 31st December, 1888, inclusive, £44,956,885.

*Copper and other Minerals.*—Copper, which in the earlier days of the colony formed a very important item of export, has of late years almost entirely disappeared from the Customs returns. Its value as an article of export has been more than replaced by the more precious metal, silver, that which is exported from the colony being chiefly extracted from the gold obtained at the

Thames, which is alloyed with about 30 per cent. of the less valuable metal. Within the last two years, however, several mines have been opened where the ore is argentiferous galena, that yields 20oz. to 220oz. of silver to the ton. In some cases the galena is mixed with iron-pyrites that yields a fair percentage of gold. A mine has recently been opened in Nelson, at Richmond Hill, where the ore is a form of tetrahedrite, a mixed ore, containing silver, antimony, zinc, bismuth, and copper, the silver being at the rate of from 20oz. to 1,792oz. per ton. The total quantity of silver entered for exportation from New Zealand from the year 1869, when it was first exported, up to 31st December, 1879, amounted to 490,808oz., valued at £124,721. Other valuable mineral ores are found in various parts of the colony, such as chrome, lead, zinc, antimony, and manganese. No iron-mines are at present worked, though almost every known variety of iron-ore has been discovered in the colony; the workings being limited to the black sands, which occur plentifully on the coasts. There are also few soils or stream-gravels that will not yield a considerable quantity when washed. The chief deposits are, however, on the sea-shore of the west coast of both Islands, the best known being that at Taranaki. Hæmatite-iron ores are largely used for the manufacture of paint.

*Coal.*—The extensive coalfields existing in New Zealand are a most valuable possession to the colony. Coal-mines are being worked in the provinces of Auckland, Nelson, Canterbury, and Otago, including Southland; those in the provinces of Auckland, Nelson, and Otago producing at present the largest quantities. At Mount Rochfort or Buller mines the seams are on a high plateau, are 10ft. to 40ft. thick, and from 900ft. to 3,000ft. above sea-level. Accurate surveys of this coalfield show it to contain 140,000,000 tons of bituminous coal of the best quality, and easily accessible. A railway seventeen miles in length is now completed along the level country at the base of the ranges in which the coal occurs. Inclines worked by steel ropes bring down the coal from an altitude of 2,000ft. At the Brunner Coal-mine, on the Grey River, Nelson, the working-face of the seam is 18ft., and it has been proved to extend one-third of a mile on the strike without disturbance, and to be available for working in an area of thirty acres; the estimated amount of coal being 4,000,000 tons in this mine alone, most of which can be worked above the water-level. Coal-pit Heath is a second mine lying more to the dip of the same seam. A third mine is being opened on the south side of the river, which, with a 370ft. shaft, will command 300,000 tons. The coal from the Brunner Mine, Nelson, which has now been worked for twelve years, yields vitreous coke, with brilliant metallic lustre. A railway has been constructed by Government to connect the mine with the port, and harbour improvements are in progress whereby a larger class of vessels than at present will be enabled to enter the river. The small quantity of this coal hitherto obtainable in New Zealand and Australian markets has been eagerly bought up for gasworks and iron-foundries, whose managers generally pay for it from 10 to 20 per cent. more than for any other coal. Engineers of local steamers esteem it 20 per cent. better than the best New South Wales coal for steam purposes. Coke made from it is valued at £3 per ton. Coalfields in other parts of the Nelson District have also yielded excellent coal. At Pakawau, and in the same formation at Collingwood, thin seams of hard, bright, bituminous coal have been worked. The area of this coalfield is about thirty square miles. The facilities of access and shipping, and the abundance of iron-ore and limestone, will probably make this an important mining district. In the Province of Auckland, at the Kawakawa Mine, Bay of Islands, the coal is taken from a seam 13ft. thick, containing much sulphur. This coal is now very extensively used by steamers. The total consumption of coal in the colony for the year 1887 amounted to 665,850 tons, of which, 558,620 tons were derived from New Zealand mines, the balance being imported from New South Wales. The total amount of coal raised in the colony up to the present date exceeds 5,000,000 tons.

*Shale.*—In 1866 attention was directed to the resources of the colony in respect to petroleum, and some very fine oils were found. There are three principal localities, and these produce each a distinct kind of oil—the Sugar-loaves, in the Taranaki Province; Poverty Bay, on the east coast of the Province of Auckland; and Maunatahi, Waiapu, East Cape. The oil from the first has a very high specific gravity—0.960 to 0.964 at 60° Fahr.—water at 1. It has thus too much carbon in its composition for its commercial success as an illuminating oil, but is capable of producing a valuable lubricating oil. The second kind, from Waiapu, Poverty Bay, is a true paraffine-oil, resembling the Canadian oil. The third produces a pale-brown oil, nearly or quite transparent; specific gravity, 0.829 at 60° Fahr.; which burns well in a kerosene-lamp for some time, and is therefore of a very superior class. It contains only traces of paraffine, and produces 84 per cent. of an illuminating oil fit for use in kerosene-lamps by means of a single distillation. Specimens of oil-shales have been found at Kaikorai and Blueskin, in Otago; and at Orepuki, in Southland, extensive and apparently valuable formations of shale have been discovered. Since 1857 the total value of minerals raised in New Zealand has been £50,981,028.

*Agriculture.*—Allusion has been made to the area of country occupied by mountain-ranges in New Zealand, and the general position they occupy with reference to the geography of the country, and it may be further stated that, with the exception of the higher Alps, every part of the country is more or less adapted for settlement of some kind. A clearer idea of the value of the country and the purposes to which it is applicable is, however, obtained by the comparison of the rock-formations, the decomposition of which produces the soils. In the whole of the colony there are about 12,000,000 acres of land fitted for agriculture, wherein the form of surface is suitable, and about 50,000,000 acres better adapted for pasturage; but from these estimates allowance must be made for about 20,000,000 acres of surface at present covered by forest. The greater portion of the best and most available land has been for some time taken up, and can now only be obtained from the original settlers at enhanced prices. The Government, however, offers every facility for the acquisition of Crown lands by *bonâ fide* farmers or settlers, either by direct purchase or by a system of deferred payments spread over a period of years. The price of Crown lands varies from 10s. to £2 per acre. The progress made in agriculture has been very rapid, and the number of persons engaged in this pursuit is, as compared with other

countries, very large, about one in every five of the adult male population being in this way possessed of a permanent stake in the country. The extent of cultivated land (exclusive of gardens attached to residences, and native holdings) enumerated in March, 1886, was 4,231,700 acres, and in February, 1886, the number of holdings was 37,658. The exports of agricultural and farm produce increased from £262,930 in 1875 to £1,157,603 in 1887. The exports of dairy-produce alone have more than doubled within the last three years.

The average yield of wheat for the year 1887-88—a bad year—was 22·94 bushels per acre for the whole colony, the average for the last five years being 27·62 bushels per acre. For Otago the average yield was 29·84 bushels, for Canterbury 24·83 bushels, for Wellington 26·58 bushels. The average yield of other produce for the same year (1887-88) for the whole colony was—oats, 31·24 bushels per acre; barley, 26·26 bushels per acre; potatoes, 5·44 tons per acre.

Respecting the quality of New Zealand grain, the opinion of an independent authority outside the colony is both interesting and valuable. The following remarks are taken from reports on the colonial sections of the Colonial and Indian Exhibition, 1886.\* “The average produce of over 26 bushels per acre of wheat, of over 27 bushels of barley, and of over 32 bushels of oats, demonstrates the fertility of the soil, and places New Zealand in the position of being among the most prolific countries in the world. A large number of other samples were shown, such as Pearl wheat, weighing as much as 66½lb.; Tuscan wheat, 67lb.; Tuscan white, purple straw, 69lb.; Velvet Chaff, 67lb. These weights show the excellence of the quality. In fact, nothing finer than these wheats has probably been seen. The wheats of commerce which are shipped to England do not approach in quality these fine specimens. The samples of barley were simply magnificent, and such barleys as the Chevalier would bring enormous prices in England. In the quality of its oats, again, New Zealand is in the front rank. The samples of potato oats are unsurpassable. Whether such splendid grain as is here exhibited is common and can be obtained in quantity is doubtful; but, still, the fact remains that in all the chief grains New Zealand has shown by these samples a production of superb quality, and in prolific quantities.”

#### *Manufactures.*

The manufacturing industry has steadily advanced in importance during the last decade. In 1878 the total number of industries was 942, while in 1886 the total number of manufacturing establishments had risen to 2,268, employing 25,655 persons; the capital invested amounting to £5,697,117, and the produce amounting to £7,436,649. The more important manufacturing industries are naturally associated with the staple products of the colony—as, for example, saw-mills and sash-and-door manufactories; grain-mills; fellmongering, tanning, currying, and wool-scouring; meat freezing, preserving and boiling-down works; woollen mills, soap-and-candle works, quartz-crushing batteries, &c.

With regard to the tanning and currying industry of New Zealand, the following remarks concerning some exhibits at the recent Colonial and Indian Exhibition, taken from the work previously mentioned, may be found interesting: “The best Victorian and New Zealand tannages also have now a particularly bright colour, and the leather, when used for soles of boots, competes very closely in finish with good English tannages. . . . The New Zealand leather partakes more of the character of the Victorian tannages, and possesses the extra advantage of being tanned from stouter pelts, the New Zealand hides being much better grown, more compact, and of smaller pattern than Melbourne hides. . . . There is one point, however, that is a chronic and great defect in Australian and New Zealand leather—viz., the flaying is generally very defective.” The official reports also refer very favourably to some soap of New Zealand manufacture shown at the same Exhibition: “In New Zealand, Messrs. Hjorth and Co. showed the best toilet-soap by far in the Exhibition. Most of the qualities were milled, and in quality nearly, if not quite, equal to French manufacture.”

#### *Conclusion.*

Some attempt has been made in the foregoing introduction to give, within the limited space at command, a very brief sketch of the development and present condition of New Zealand.

The exhibits in the New Zealand Courts only afford an imperfect indication of the results achieved by the colony during its comparatively short period of existence; but a short summary of what has been accomplished may be stated in a few lines.

A mere handful of settlers has, since 1840, grown into a people numbering not far short of seven hundred thousand—a people that, thanks partly to good qualities inherent in the parent stock, and partly to the healthy climate and other favourable conditions of life, can creditably compare with any other race in the world. The beautiful and fertile islands of New Zealand have been traversed in all directions by roads and railways; land to the extent of nearly seven millions of acres has been brought into a partial or complete state of cultivation; and the natural resources of the country generally have been so well developed as to allow of a surplus, after supplying all local wants, amounting to over £6,000,000, being annually exported to other countries, the total value of products exported since the year 1853 amounting to £144,000,000.

The imposition of a property-tax of late years has enabled the collection of statistics which bear on the accumulation of wealth which has taken place in New Zealand during the fifty years of its existence. It appears that the tabulated value of real and personal property in the colony is over £218,000,000 sterling. This, divided by the population at the date of the rate, gives a sum of £373 per head. Against this must be placed the total indebtedness, public and private, in the colony, which amounts to a sum equal to £5 £150 per head. This leaves a surplus of £223 per head of population. As liberal exemptions are made in the collection of the property-tax, the actual rateable value taxed is only £102,000,000, the tax upon which is paid by 28,000 persons, holding an average of £3,643 each.

\* H. Trueman Wood, editor. William Clowes and Sons, London, 1887.

While the labour of the people has thus materially prospered, their intellectual, social, and religious welfare has not been neglected. A comprehensive system of national education has been established on a most liberal basis, the amount paid annually by the State for this purpose being over £540,000 per annum.

## TABLES OF STATISTICS SHOWING THE PROGRESS OF THE COLONY.

## POPULATION (not including the Maoris).

Years.	...	...	...
1854	...	...	32,554
1858	...	...	59,413
1867	...	...	218,668
1874	...	...	299,514
1878	...	...	414,412
1881	...	...	489,933
1888	...	...	607,380

## NUMBER OF HOLDINGS OVER ONE ACRE IN EXTENT (1888).

Freehold ...	...	...	22,676
Rented ...	...	...	8,296
Part freehold and part rented	...	...	3,771

## SCHOOLS.

	1878.	1887.
Number of public schools ...	757	1,126
Private schools ...	236	299
<b>Total</b> ...	<b>993</b>	<b>1,425</b>
Teachers ...	2,271	3,731
Scholars ...	75,240	127,395

## DEATH-RATES PER 1,000.

	1878.	1881.	1886.
England ...	21.6	18.9	19.3
France ...	22.6	22.0	22.5
New Zealand ...	10.96	11.13	10.54
Years.	Births.	Deaths.	
1856 ...	1,722	470	
1866 ...	8,466	2,540	
1876 ...	16,168	4,904	
1886 ...	19,299	6,135	

## PUBLIC REVENUE.

Years.	£
1853 ...	146,855
1858 ...	341,125
1867 ...	1,787,314
1874 ...	3,024,348
1878 ...	4,167,889
1888 ...	3,859,000

## SAVINGS-BANK DEPOSITS.

Years.	£
1858 ...	7,862
1868 ...	243,615
1878 ...	1,043,204
1887 ...	2,407,776

## POSTAL.

## Letters.

Years.	Received.	Despatched.
1858 ...	254,605	228,251
1867 ...	2,408,331	2,402,909
1878 ...	8,236,062	7,288,699
1886 ...	19,896,448	18,188,144

## Newspapers.

Years.	Received.	Despatched.
1858 ...	346,603	337,745
1867 ...	1,670,520	1,390,368
1878 ...	5,097,907	4,312,459
1886 ...	7,479,209	6,844,838

## TELEGRAPHS.

Years.	Miles of Line.	Number of Messages.
1866 ...	699	27,407
1871 ...	1,976	312,874
1874 ...	2,530	752,899
1878 ...	3,434	1,260,324
1882 ...	3,974	1,570,189
1887 ...	4,646	1,835,394

## METEOROLOGY (1887).

## Temperature in Shade.

	Mean.	Max.	Min.
	Fahr.	Fahr.	Fahr.
Auckland ...	59.6	81.5	35.0
Wellington ...	54.9	83.0	31.0
Dunedin ...	51.7	92.0	30.0

## Rainfall.

	Total Rainfall in Inches.	No. of Days Rain Fell.	Max. Fall in 24 hrs.
Auckland ...	37.7	181	1.87
Wellington ...	56.9	188	2.35
Dunedin ...	39.1	174	2.76

## RAILWAYS.

## Length of Line opened.

Years.	Miles.
1873 ...	145
1878 ...	1,078
1881 ...	1,333
1888 ...	1,910

## Cost of Construction.

£15,000,000

## EXPORTS (of all Descriptions).

Years.	£
1841 ...	17,717
1851 ...	84,160
1858 ...	458,023
1861 ...	1,370,247
1864 ...	3,401,667
1874 ...	5,251,269
1881 ...	6,060,866
1888 ...	7,767,325

## IMPORTS (of all Descriptions).

Years.	£
1841 ...	13,358
1851 ...	349,540
1858 ...	1,141,273
1861 ...	2,493,811
1864 ...	7,000,655
1874 ...	8,121,812
1881 ...	7,457,045
1888 ...	5,941,900

## WOOL EXPORTS.

Years.	Lb.	Value. £
1858 ...	3,810,372	254,052
1861 ...	7,855,920	532,728
1867 ...	27,152,966	1,580,608
1874 ...	46,848,735	2,834,695
1881 ...	59,415,940	2,909,760
1886 ...	90,853,744	3,072,971
1888 ...	83,226,033	3,115,008



TABLES OF STATISTICS, ETC.—*continued.*HEMP EXPORTS (New Zealand Flax, or *Phormium Tenax*).

Years.	£
1864 ... ..	170
1867 ... ..	4,256
1871 ... ..	90,611
1874 ... ..	37,690
1878 ... ..	11,569
1881 ... ..	27,699
1888 ... ..	76,282

## GOLD EXPORT.

Years.	£
1857 ... ..	40,422
1864 ... ..	1,857,847
1878 ... ..	1,244,190
1888 ... ..	914,309

Total value exported from 1857 (gold first discovered) to 31st December, 1888 :—  
£44,956,885.

## KAURI-GUM EXPORTS.

Years.	Value. £
1853 ... ..	15,972
1858 ... ..	20,037
1864 ... ..	60,590
1871 ... ..	167,958
1878 ... ..	132,975
1881 ... ..	253,788
1886 ... ..	257,653
1888 ... ..	380,933

## BUTTER AND CHEESE EXPORT.

1884.

	£
Butter ... ..	66,593
Cheese ... ..	25,074
	<u>£91,667</u>

1888.

Butter ... ..	118,252
Cheese ... ..	78,918
	<u>£197,170</u>

## COAL.

Years.	Raised. Tons.	Imported. Tons.
1878 ... ..	162,218	174,148
1881 ... ..	337,262	129,582
1887 ... ..	558,620	107,230

Total output of coal in New Zealand up to 31st December, 1888 :—

4,618,937 tons.

## FROZEN-MEAT EXPORTS.

Years.	Value. £
1881 ... ..	Nil.
1882 ... ..	19,339
1883 ... ..	118,328
1884 ... ..	345,090
1885 ... ..	373,857
1886 ... ..	427,193
1887 ... ..	455,870
1888 ... ..	628,129

## LIVE-STOCK.

Years.	Horses.	Cattle.
1843 ... ..	528	4,065
1858 ... ..	14,912	137,204
1867 ... ..	65,715	312,835
1878 ... ..	137,768	578,430
1886 ... ..	187,382	853,358

## Sheep.

1843 ... ..	10,255
1858 ... ..	1,523,324
1867 ... ..	8,418,579
1878 ... ..	13,069,338
1886 ... ..	16,564,595

	1867.	1878.	1888.	Average Yield per Acre, 1888.
Land under—	Acres.	Acres.	Acres.	Bushels.
Crop and sown grasses	676,900	3,523,277	7,284,752	...
Wheat ... ..	47,786	264,861	357,359	26·37
Oats ... ..	101,563	327,345	336,474	31·24
Barley ... ..	13,136	28,666	27,912	27·26

Total area of New Zealand—66,000,000 acres.

Of these, 19,000,000 acres have either been sold or reserved for education and other purposes.

13,000,000 " belong to the Natives or those who purchased from them.

34,000,000 " Crown lands still remain for disposal.

TABLES OF STATISTICS, ETC.—*continued.*

## PRINCIPAL INDUSTRIES, 1886.

	Value of all Manufactures or Produce (including Repairs) for the Year 1885.	Approximate Value of Land, Buildings, Machinery, and Plant.	Hands Employed.
	£	£-	No.
Sawmills, sash-and-door manufactories	1,177,713	964,095	5,042
Grain-mills	754,830	329,304	448
Fellmongering, tanning, currying, and wool-scouring	634,915	138,750	1,023
Breweries and malthouses	421,197	384,056	560
Meat-freezing, preserving, and boiling-down works	543,878	442,962	838
Gold-quartz-mining works	374,837	211,021	1,156
Iron and brass foundries	351,739	239,938	1,750
Boot-manufactories	276,725	70,935	1,654
Printing establishments	273,886	331,723	2,107
Collieries	255,326	148,773	1,448
Clothing-factories	237,781	37,530	1,269
Gasworks	194,653	656,405	344
Woollen-mills	194,311	203,279	867
Furniture-making manufactories	162,375	93,032	807
Soap-and-candle works	130,745	75,928	204
Coach-building and -painting works	128,346	106,238	664
Agricultural-implement manufactories	111,823	50,205	336
Brick, tile, and pottery manufactories, and lineworks	108,725	184,701	678
Coffee, spice, and chicory works	98,234	32,439	149
Aerated water and cordial manufactories	94,098	93,478	273
Hydraulic gold-mining works	74,190	224,787	617
Bacon-curing establishments	58,799	26,709	137
Rope-and-twine works	56,123	49,821	242
Ship- and boat-building works	56,413	17,094	172
Chaff-cutting works	54,440	64,969	265
Biscuit-factories	47,784	43,805	185
Cheese-and-butter factories	43,094	47,513	110
Chemical works	34,283	30,409	56
Jam-making and fruit-preserving works	32,292	20,520	216
Sail-factories and oilskin-making	25,574	15,370	118
Flax-mills	20,059	18,016	249
Other principal industries	407,452	343,312	1,701
Totals	7,436,649	5,697,117	25,655

## DISTANCES BY SEA.

EAST COAST—		Miles.	WEST COAST— <i>contd.</i>		Miles.
Auckland to Bay of Islands	...	160	Westport to Greymouth	...	47
" Tauranga	...	130	Greymouth to Hokitika	...	25
" Poverty Bay	...	300	Wellington to Wanganui	...	98
" Napier	...	390	" New Plymouth	...	198
" Wellington	...	590	" Picton	...	52
Wellington to Lyttelton	...	174	" Nelson	...	92
Lyttelton to Port Chalmers	...	190	Auckland to Melbourne	...	1,650
Port Chalmers to Bluff Harbour	...	113	" Sydney	...	1,315
WEST COAST—			Onehunga to Sydney	...	1,180
Manukau Harbour to New Plymouth	133		Wellington to Melbourne	...	1,400
New Plymouth to Wanganui	100		" Sydney	...	1,200
" Nelson	147		Lyttelton to Melbourne	...	1,300
Nelson to Westport	165		Port Chalmers to Melbourne	...	1,100
			Bluff Harbour to Melbourne	...	987

## DISTANCES BY RAILWAY.

<i>North Island.</i>		Miles.	<i>North Island—contd.</i>		Miles.
Auckland to Drury	...	22	Whangarei to Kamo	...	7
" Mercer	...	43	Napier to Tahoraite	...	38
" Te Awamutu	...	106	Wellington to Upper Hutt	...	20
" Onehunga	...	8	" Featherston	...	50
" Helensville	...	38	" Mangamahoe	...	87

DISTANCES BY RAILWAY—*continued.*

<i>North Island—contd.</i>		Miles.	<i>South Island—Branch Lines—contd.</i>		Miles.
Wellington to Palmerston North	...	88	Westport to Wellington Coal-mine	...	12
Wanganui to " "	...	63	Picton to Blenheim	...	18
" Foxton	...	86	Christchurch to Amberley and Waikari	...	50
" Waverley	...	33	" White Cliffs	...	42
New Plymouth to Waitara	...	10	" Springfield	...	46
" Hawera	...	48	" Oxford	...	42
" Foxton	...	171	" Lyttelton	...	7
" Wellington	...	251	" Southbridge	...	32
<i>South Island—Main Line.</i>			Rakaia to Ashburton Forks	...	23
Christchurch to Rolleston Junction	...	15	Studholme to Waimate	...	5
" Rakaia	...	36	Christchurch to Birdling's Flat	...	33
" Ashburton	...	53	Timaru to Albury	...	25
" Timaru	...	100	Oamaru to Duntroon and Kurow	...	41
" Oamaru	...	152	" Ngapara	...	17
" Palmerston	...	189	Dunedin to Outram	...	19
" Port Chalmers	...	223	" Lawrence	...	60
" Dunedin	...	230	" Port Chalmers	...	9
" Milton	...	265	" Kingston	...	163
" Balclutha	...	282	Stirling to Kaitangata	...	5
" Gore	...	329	Otautau to Nightcaps	...	37
" Invercargill	...	369	Invercargill to Kingston	...	87
<i>Branch Lines.</i>			" Bluff	...	17
Nelson to Belgrove	...	22	" Kelso	...	59
Greymouth to Brunner	...	8			

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