

1886.

## NEW ZEALAND.

NATIVE FORESTS AND THE STATE OF THE  
TIMBER TRADE

(REPORT ON), BY T. KIRK, F.L.S., CHIEF CONSERVATOR OF STATE FORESTS.

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

## PART II.

## HAWKE'S BAY.

THE Provincial District of Hawke's Bay occupies the middle portion of the east coast of the North Island, and ascends from sea-level to the crests of the Ruahine Mountains, which in many places are covered with forest up to 4,000ft. The area of the district is 2,740,000 acres, of which about 479,928 acres are more or less covered with forest; 225,870 acres being in the hands of the Crown, and 254,058 acres held by the Natives.

From a valuable statement furnished by Mr. H. Baker, Commissioner of Crown Lands, I take the following, showing the disposition of forest lands held by the Crown, and the area of Native forest leased to Europeans:—

Forest lands held by the Crown*	...	...	125,000 acres
Forest reserves for climatic purposes	...	...	87,278 "
Educational reserves clothed with bush, not occupied, vested in Board of School Commissioners	...	...	13,592 "
			<hr/> 225,870 "
Forest lands in the hands of Natives	...	...	214,272 "
Forest lands leased by Natives to Europeans	...	...	39,786 "
			<hr/> 254,058 "

The Hawke's Bay forests have for many years been famous for the high quality of their totara, which was supposed to occur in such abundance that it was said to be inexhaustible. The excessive destruction which seems inseparable from the rapid extension of settlement, and the increased facilities for conversion afforded by the development of railway communication, have caused a vast diminution of the forest resources of the district; so that the conversion of this fine timber, second only to the kauri in value, will practically come to an end within the next decade.

## DISTRIBUTION OF FORESTS.

The forests are distributed in a very unequal manner, the greater portion occupying the south and south-western portion of the district. A line drawn from Cape Kidnappers due west to the Ruahine Mountains would divide the district into two parts, of which the southern is the larger, and contains the chief forest areas.

In the northern part, the Kaimanawa Forest occupies the north-western corner, with the Pukitiri and Pohui Bushes lying a little to the south-east, and two or three outlying patches on the northern boundary; the total area of wood-land being very small when compared with that of the southern portion.

Immediately to the south of the imaginary line the lower slopes of the Ruahine Mountains are clothed with forest, which at first is of no great width, although in one or two places it extends to the lower ground; but opposite Takapau it becomes about sixteen miles in width, and gradually expands until it reaches the sea on the southern side of Cape Turnagain, exhibiting a roughly-

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\* 59,000 acres of forest land held by the Crown are in course of preparation for sale and settlement.

triangular outline, in its widest part enclosing large open areas. A few small, isolated patches of timber are dotted over the eastern side of the district, but are of no great importance. The Napier and Wellington Railway is opened as far south as Tahoraite, a distance of seventy-six miles; from Takapau to its present terminus, about seventeen miles, it runs entirely through forest-country, large areas of which, however, are already cleared or are in process of clearing. The section from Tahoraite to Woodville, on the southern border of the district, is expected to be ready for traffic about the close of the present year: it runs chiefly through open or cleared land, bounded by forest on the east and west.

#### CHARACTER OF THE FOREST.

The area of forest containing any large proportion of convertible timber is small. In all parts of the district the forest comprises an unusually large proportion of shrubby growth, such as mahoe (*Meliczytus ramiflorus*), small tawa and tawhero, &c., of no value to the saw-miller. With the exception of the Taranaki forests, no others in the North Island contain so small a proportion of valuable timber. It is, however, commonly stated that much of the timber destroyed during the progress of settlement in the Norsewood and other districts comprised a large proportion of really good totara, rimu, and matai; and, although in all probability the total quantity has been over-estimated, there can be no question that some of the best forest in the district has been destroyed without yielding the slightest return to the colony. In a few cases it has passed into private hands, its conversion affording profitable employment for a large amount of well-remunerated labour.

The puriri, pohutukawa, mungeao, and other trees common in the Auckland District find their southern limit on the East Cape; so that the forests of Hawke's Bay, which are destitute of any peculiar species, produce a somewhat monotonous effect when compared with the more varied forests to the north of Auckland.

The following are the chief timbers used for conversion in the district: Totara (*Podocarpus Totara*): this often attains a large size, and usually occurs in clumps, patches, or groves, but rarely forms continuous forest, although single trees or small clumps may often be found scattered through a large forest area. Rimu (red-pine) (*Dacrydium cupressinum*): this is plentiful in many places, but rarely attains the largest dimensions. Like the totara it is often restricted to patches of greater or less extent, but more frequently it is sparsely scattered amongst other trees. Although it sometimes occurs in considerable quantity, there is nothing in the district that will compare favourably with the red-pine forests of Southland. Matai (black-pine) (*Podocarpus spicata*): the black-pine is plentiful in some localities, and is extensively converted. In some places it is below the average dimensions, although nearly always straight and well grown. Kahikatea (white-pine) (*Podocarpus dacrydioides*): this also is not unfrequent, but, like the preceding, is often below the average size: it is converted to a small extent only. Miro (*Podocarpus ferruginea*): this is not uncommon, but seldom occurs in large quantity; it rarely attains large dimensions. Tawa (*Beilschmiedia Tawa*): the tawa is plentiful in low-land forests, and often attains a large size, straight and well grown: except for firewood, it has not at present been utilized in the district. Rata (*Metrosideros robusta*): a common tree, but generally little valued, except for firewood, fencing-rails, and telegraph arms. Black maire (*Olea Cunninghamii*): this is somewhat rare, and local, but is in demand for bridges and other special purposes on account of its great strength and durability. It is, however, difficult to procure in a sound state, being liable to the ravages of a large boring larva, which forms long galleries three-quarters of an inch in diameter. Tooth-leaved beech (*Fagus fusca*) and entire-leaved beech (*Fagus Solandri*): these fine trees are plentiful on the slopes of the Ruahine Mountains and in other places in the low-land portions of the district. They rarely attain dimensions above the average, and are frequently small and scrubby. Both kinds are utilized for sleepers and fencing material, &c., the tooth-leaved beech being considered the more durable. Mountain beech (*Fagus Clifortioides*): this species is abundant on the middle slopes of the Ruahine Range and in other mountain districts up to 4,000ft., but has scarcely been utilized at present. Rewarewa (*Knightia excelsa*) and toro (*Myrsine salicina*): these and other ornamental timbers are more or less frequent, and are occasionally converted for ordinary purposes where rimu and similar timbers are not to be procured. Towai (*Weinmannia racemosa*): although of common occurrence, this species is not abundant, and but rarely attains good dimensions. With the preceding, it is occasionally converted, in the absence of more valuable timbers. Hinau (*Elaeocarpus dentatus*) is of frequent occurrence in certain parts of the district.

The totara affords the most valuable timber produced in the district; next in order must be placed rimu, matai, kahikatea, tooth-leaved and entire-leaved beeches: except for firewood no other timbers enter into general consumption. Wherever totara is found it is applied to general building purposes, constructive works, railway-sleepers, and fencing; in fact, totara, in Hawke's Bay, occupies the same pre-eminent position with regard to all other timbers that is held by the kauri in Auckland.

#### KAIMANAWA BUSH, TARAWERA.

There is a considerable area of forest about Tarawera, which, although generally of a mixed character, has occasional large patches of good timber adapted to the use of the saw-miller. In some places it consists chiefly of rimu, above the average size and of good quality; in others the rimu is replaced by matai, not generally equal to the rimu in excellence of quality. Kahikatea occurs in low places by the margins of streams: fine tawa and rata are abundant. I was informed that most of the land in the vicinity of Tarawera had passed into private hands, but there can be no question that the best portions of the timbered country would pay for conservation, as the development of railway communication between Napier and Taupo is only a question of time, and when carried out will at once increase the demand, and afford facilities for profitable conversion.

## MAKARETU RESERVE.

This State forest comprises 67,400 acres, and is the largest reserve in the Hawke's Bay District. It occupies the eastern slopes of the Ruahine Mountains, and is about twenty miles in length by rather more than six in breadth, extending from the source of the Makaretu River northwards to the Wakarare Range, and ascending from about 1,100ft. to the highest crests of the range. Much of the land along its lower margin is being prepared for settlement.

The entire reserve is excessively broken, and consists of a succession of sharp ridges and deep gullies or ravines. In a few places good patches of rimu of fair size may be found, on gentle slopes or at the head of gullies; here and there a little white-pine, and occasionally a fine matai. The total aggregate on an area of such great extent is unquestionably considerable, but it is so sparsely scattered, and the difficulties in the way of getting it out are so great, that it would not pay for removal, even with the advantage of direct railway communication. Mixed with the pines are vast quantities of mahoe and other valueless white woods, forming a dense undergrowth which renders progress slow and difficult. Tawa occurs but sparingly, and always of small size.

Open places on the spurs are almost invariably clothed with tooth-leaved and entire-leaved beeches, often of good quality, but small—it is rare to find a trunk 3ft. in diameter; but, for all this, there is a large amount of useful timber, unfortunately in situations most difficult of access. No good timber was observed above 3,000ft. of altitude, and the quantity between that limit and 2,000ft. was very small. Between 3,000ft. and 4,000ft. there is nothing better than scrub, chiefly mountain beech, mixed with low-growing shrubs, and forming in many places a dense close-set undergrowth, which becomes almost impassable in exposed positions. Above 4,300ft. or thereabouts the mountains are denuded of arboreal vegetation.

This reserve was formed chiefly for the protection of the numerous rivers and streams which have their source within its boundaries, and its conservation is absolutely necessary. It must of necessity be classed as a climatal reserve: no portion of it is adapted to settlement.

## UMUTAOROA FOREST.

This lies about two miles from Tahoraite Station, the present terminus of the Wellington-Napier Railway, with which it is connected by a branch line worked by a steam-motor. About five thousand acres have been leased from the Maoris, and are now held by Messrs. Wilding and Co., of Waipukurau. The mill belonging to this firm at Waipukurau has been greatly enlarged, and furnished with new machinery; so that it is expected the annual output will be nearly 5,000,000 superficial feet per annum, of which totara will constitute three-fourths. All the timber felled in Messrs. Wilding's bushes is sent by rail to their mill at Waipukurau for conversion.

The only timber at present felled in this bush is the totara, of which there are two large groves, one of about seventy acres, which is mostly cut out; the other of less than four hundred acres, occupying an area roughly estimated at about a mile in length by half a mile in breadth, on which operations were being commenced at the date of my visit. Captain J. Campbell Walker visited the first of these groves during his examination of New Zealand forests in 1876-77, and pronounced it to be the finest piece of totara forest he had seen.

In addition to the totara, this forest contains large patches of rimu and kahikatea, with a little matai, and a large quantity of fine tawa; but it is the totara alone which gives the block its chief value. At present the other timbers have received but little attention.

Although fine timber, and of great value, the totara is not of the largest dimensions, either with regard to height or girth; but few of the trees yield more than two lengths, or exceed four feet in diameter at the base: it is timber of excellent quality, specially adapted to easy conversion. At the same time, trees of large dimensions are scattered amongst those of less size. The proportion of waste in the conversion of totara is greater than in any other New Zealand timber of large dimensions: it is rarely under from 40 to 45 per cent., and in some cases exceeds 50 per cent. In timber that has stood until it has passed its prime this rate is greatly exceeded, partly owing to the amount of decay at the base, which extends upwards, and partly owing to decay of the tops, which extends downwards. The latter cause is often found to be operative in timber which is apparently sound and good. A common cause of waste is the formation of irregular swellings on the trunk, or other outgrowths, which render it unsymmetrical. A careful examination of certain returns which I was permitted to make by the courtesy of one of the largest converters in the district showed that 920,394 superficial feet of logs, railway measurement, yielded only 387,000ft. of converted timber. It should, however, be explained that, with logs of large diameter, railway measurement is 20 per cent. in excess of the ordinary method, in which the fourth of the girth is taken as the side of the square; so that in this case the unusual amount of waste will be somewhat reduced if ordinary log-measure be adopted.

Some complaints were made respecting the mode of measuring logs adopted by the railway authorities, no allowance being made for bark or waste, while the actual contents of the log are ascertained by computing the superficies of a cross-section taken at the middle of the piece. The authorities have practically recognized the claim of the saw-miller to an allowance, by charging reduced rates for logs as compared with sawn timber, the difference varying from 26 to 33 per cent. in favour of logs: in some cases the rates are still more favourable.

## TAMAKI FOREST.

This also belongs to the Natives, who have leased a block of 8,000 acres to Messrs. Nannestad and Richter. These gentlemen have erected a saw-mill on the ground, and are busily engaged in the process of conversion. The block is divided from that held by Messrs. Wilding and Co. by the

Tamaki River, and the forest is of the same general character, but portions of the totara present some notable points of difference, which it is desirable to point out.

One large patch, consisting chiefly of close-set trees, with trunks from 20in. to 34in. in diameter, at first sight suggested the idea of a grove of young trees; but closer examination showed that this view was incorrect, as in the majority of stems the timber was dense, firm, of even texture, and deep colour, showing that, although of such small dimensions, the timber had attained maturity; but, excepting the remarkably-dense growth of the trees, there was no obvious reason why they should not have attained larger dimensions.

After drawing my attention to these small trees, Mr. Nannestad guided me to a distant part of the block and pointed out a magnificent grove, containing the finest specimens that came under my notice in the district. Unlike the preceding, the trees were somewhat distant, in some places almost scattered; the area over which they grew was considerable, but the short space of time at my disposal prevented me from going over the whole of it so as to form a definite idea of its extent, which has not been ascertained at present. Trees with clean, symmetrical trunks 60ft. to 80ft. high, and from 5ft. to 6ft. in diameter, were common; several specimens were fully 100ft. in the clear, and one, exceptionally gigantic, was estimated at 112ft. Several fine trunks were 8ft. in diameter. One or two monsters showed symptoms of decay, but the great bulk appeared to be perfectly sound, and in the best possible condition for conversion. With a single exception, it comprises the finest specimens I have seen in any part of the colony; but it may be fairly doubted whether they will prove as profitable for conversion as medium-sized trees. Messrs. Nannestad and Richter manufacture sawn totara shingles to a large extent.

#### WOODVILLE RESERVE.

This small State forest has an area of 5,900 acres, and is situate in the extreme south-western corner of the district, closely adjacent to the gorge of the Manawatu.

The chief timber over a large portion of its area is tawa, much of which is of large size, and suitable for conversion; but in some parts it contains large quantities of rimu and kahikatea, with an occasional matai, all of good size, and well adapted to the purposes of the saw-miller. A few fine pukatea and hinau also occur in various parts of the block, and considerable quantities of fine rata in the higher portions.

Although the quality of this forest is not of the highest class, it contains a large proportion of useful timber, and, with the development of railway communication, will prove of considerable value at no distant day.

The remaining State forests in the district are the Ngamoko Reserve, situate a few miles south of Makarewa, and containing 5,200 acres, the timber being similar to that of the Makarewa Forest, of which it may be regarded as a continuation; also, the Kumeroa Reserve (Puketoi No. 3), containing 8,900 acres, situate on the southern boundary of the district, and covered chiefly with tawa and rata intermixed with a few pines. To these must be added four small sections, containing about four hundred acres, in Blocks I. and IX., Woodville, which find their place in Class III., Timber Reserves.

#### THE TIMBER INDUSTRY IN HAWKE'S BAY.

From a return prepared by the Commissioner of Crown Lands I find that the district contains eighteen saw-mills, which afford employment to 265 men and boys. The annual output may be estimated at about 15,000,000 superficial feet. This gives an average of rather less than 835,000 for each mill, which I think will be found to be rather over the mark, as but few of the mills are of large capacity, and some are very small. All the mills are supplied with logs obtained from freehold land or from land leased by the Natives, except in one or two instances where the timber on certain blocks of Crown land has been purchased before the land has been thrown open for selection.

It is significant of the increasing value of standing timber that there is no difficulty in obtaining from £2 to £3 10s. and upwards per acre for the timber growing on educational or municipal reserves, &c., even when it is far from being of the first class. There can be no question that timbered land in the district will advance rapidly in value, and, where the timber is of the best quality, will prove a profitable investment.

Several mills obtain a large proportion of their logs from small freeholds adjacent to the railway, paying the owner a royalty of from 3d. to 9d. per 100 superficial feet for the ordinary pines, and from 1s. to 2s. per 100ft. for totara. This, of course, is a great advantage to deferred-payment selectors and others of limited means, as it yields them a small amount of ready money, clears their land of the heaviest timber, and in many cases affords them employment on their own sections. In nearly all cases the logs are conveyed to the mill by rail, sometimes for a distance of over seventy miles. The chief mills in Napier receive the whole of their log supply by rail, obtained chiefly from their own bushes, which are directly connected with the railway; so that the conveyance of logs on the Napier and Tahoraite Railway forms one of the principal items in the general traffic.

The most important are the totara forests held under lease from the Maoris, the holders paying a yearly rent, without any restriction as to the quantity converted. In some cases these leases have been profitably sublet by the original holders. When in Napier I was informed of an instance in which a large block, originally leased from the Natives for a yearly payment of £300, was sublet for £1,500, which would be equivalent to a royalty of 2s. per 100ft. on a million and a half superficial feet of converted timber, or very nearly three million feet in the log. I was assured by two or three of the largest converters that 2s. was not more than a fair royalty for totara.

It is not easy to obtain accurate returns of the yield per acre in timber so irregularly distributed as totara: for really good forest from 40,000ft. to 50,000ft. would be a low average; but, as I have already shown, the waste is immense. In one instance in which the results were carefully worked out the average for twenty-six acres was 43,092ft. superficial; but first-class totara forest, felled in its prime, will yield from 80,000ft. to 100,000ft. or more: unfortunately forests of this character have become extremely rare.

The ruling prices for first-class totara for ordinary building purposes at the present time are from 8s. 6d. to 11s. 6d. per 100ft. superficial; second class, 6s. 6d.; bridge and wharf timber, &c., 14s. to 16s. 6d.: but contracts are occasionally taken at lower rates, which must prove unremunerative. Railway-sleepers average from 2s. 10d. to 3s. 3d. each. Totara is the chief timber employed for telegraph poles, the average prices being—for poles 20ft. long, 8in. by 8in., tapering to 6in. by 6in., 18s. each.; 25ft. long, 18s. to £1 each.; 35ft. long, 16in. by 16in., tapering to 10in. by 10in., £6 10s. to £7 each.

A small quantity of totara is exported from Napier to Sydney and Melbourne, and there is no doubt that the trade is capable of expansion; but the home demand is increasing. Auckland has long derived her chief supplies of totara from Hawke's Bay, and now Otago is being forced into the same market. With the extension of harbour works and railways in all directions, the construction of wharves and bridges, and the general preference for totara for all purposes where durability and lightness are required, the home demand must expand in a constantly-increasing ratio; and, although at the present moment competition amongst saw-millers is rather too keen, and the home supply is rather in excess of the demand, there are indications that this state of things will not last, but that the ruling rate for first-class timber for constructive works will advance. It is certain that the quantity of totara converted during the current year will be largely in excess of any previous output in this district.

I have been unable to form any precise estimate of the total quantity of totara available for conversion, but am satisfied that it is much less than is generally supposed. Answers to inquiries as to the existence of any totara forest between the Taranaki bushes and the Ruahine Mountains are disappointing and unsatisfactory. Some small virgin groves occur on Native land in the upper part of the Manawatu, and there is without doubt a considerable quantity scattered sparsely through the forest eastward of Tahoraite, but at present it is difficult of access, and its scattered distribution militates against its profitable conversion. It may ultimately be found profitable to convey this timber to the Manawatu by rolling roads or by tramways, and float the logs to booms in a lower part of the river during floods; but this course would not pay at present rates.

I am fully convinced that the present supply will be exhausted within the next ten years, even supposing that no great expansion of the demand takes place.

The timber industry of the district is of recent growth, and is a direct consequence of the construction of the Napier and Wellington Railway as far as Tahoraite. Previous to the year 1876 the district derived its chief supply of timber from Auckland; now, however, totara and less common timbers have displaced the kauri, and the import is reduced to very small dimensions. In a very definite sense the railway may be said to have created the timber industry which now supplies its most important item of freight.

The export of timber from Napier for the year ending the 31st March, 1884, amounted only to 108,115 superficial feet, valued at £624, an average of rather more than 11s. per 100ft.

During the past three years timber growing on Crown lands has been sold to the value of £309, prior to the land being thrown open for selection. Mr. Baker further states that 1,264 acres of timber lands of special value have been sold for £4,766 during the same period.

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## TARANAKI.

THE area of the Taranaki Provincial District comprises 2,290,000 acres, of which 729,000 acres, practically clothed with forest, are still held by the Crown, and 1,034,000 acres by the Maoris.

Before the commencement of settlement the greater portion of the district was covered with forest, but of late years especially vast portions have been cleared by the progress of settlement, and the settled area is still being extended. From the Mokau River, which forms the northern boundary of the district, southwards to Pukearuhe the forest closely approaches the sea-beach in most places; leaving that station, the forest recedes, forming a belt of open country from one to six miles in width, which is continued round Cape Egmont, until, at Hawera and Patea, its width in the broadest places is from ten to twelve miles, forming the Hawera and Patea plains, which comprise some of the best land in the colony, although it suffers severely from high winds and the total absence of sheltering wood-land.

Speaking generally, the forest is of very indifferent quality, and the proportion of convertible timber less than in any other forest district in the colony. In fact, with the exception of a few favoured localities of limited area, good timber is so sparse and scattered that saw-milling requires a much greater expenditure of labour than is necessary in other districts.

A vast portion of the forest consists of scrubby growth, or of large shrubs or trees too small to be of any value for conversion, so that in many localities there is not a single convertible tree to a square mile.

A large proportion of the serviceable contents of the forest consists of tawa, which is often well grown, and attains large dimensions, ascending from sea-level to nearly 2,000ft. Tooth-leaved and entire-leaved beeches occur on the inland ranges, but rarely in close proximity to the sea. Rata is abundant, in not a few places forming the staple of the forest, as at Manaia. Rewarewa sometimes forms continuous forest, giving a remarkable effect to the landscape when growing on the crests of

low ranges, as between Urenui and Pukearuhe. Hinau is not unfrequent, but does not appear to be converted, although the value of its timber and bark is well known. Broadleaf (*Griselinia littoralis*) occurs on the ranges. Towai is plentiful in similar situations, although often descending to sea-level. Cedar (*Dysoxylum spectabile*) occurs in low-land forests throughout the district, although in some places but sparingly. The kaiwaka (*Libocedrus Bidwillii*) occurs sparingly on the ranges, and may be more plentiful inland than it is near the coast. Large tea-tree or kamuku (*Leptospermum ericoides*) is nowhere found in large quantity. Maire-raunui (white and mountain maire) are frequent, although never occurring in large quantity, and but rarely of large dimensions. Maire-tawhake (*Eugenia Maire*) is found in swamps at the Ngaire and other places. Titoki (*Alectryon excelsum*), mapau (*Myrsine Urvillei*), and toro (*M. salicina*) are frequent.

Two trees affording valuable timber remain to be mentioned, although for practical purposes they are worked out in the district: the pohutukawa (*Metrosideros tomentosa*), which occurs sparingly on the cliffs as far south as the Mimi River; and the puriri, which is restricted to the vicinity of the coast, rarely occurring three miles inland—south of New Plymouth it becomes very rare, and appears to find its southern limit near Stony River.

A large shrub or small tree, *Pomaderris apetala*, upwards of 20ft. in height, may also be mentioned here, although it has but little economic value. It is found on a low, sandy hill between the Mokau and Mohakatina Rivers, and is termed by the Natives the tainui; they state that it grows on the spot where their ancestors landed from the "Tainui," the first canoe that touched the west coast of the Island: the original plants are said to have sprung from the branches used to cover the floor of the canoe. The plant is not uncommon in several parts of Australia, and attains equally large dimensions; in Victoria it is termed hazel. It was originally discovered by Dr. Hector, and until recently has been supposed to be restricted to the habitat stated above, but I am assured that it occurs in at least two localities in the Auckland District. The genus *Pomaderris* is absolutely restricted to Australia and New Zealand.

Most of the trees previously enumerated are mixed with a dense undergrowth of mahoe, makomako, fuchsia, akeake, manuka, tarata, and other shrubs or small trees, while the ordinary pines—the rimu, white-pine, totara, matai, and miro—are sparingly scattered through the whole, often solitary, sometimes forming clumps or patches of greater or less extent, and but rarely expanding into groves. The best sections that came under my notice were situate near Eltham and the Ngaire. A large patch of exceptionally good rimu and white-pine is situate on the mountain round between the village of Egmont and the forest reserve; unfortunately, it was not deemed sufficiently extensive to warrant its being reserved from sale, so that it will inevitably be destroyed during the process of clearing, a matter for regret in a district where really good timber is so limited in quantity. A limited quantity of very fine rimu is found near Inglewood, and a large quantity of very large white-pine in the valley of the Mimi, and other rivers.

In several localities about the Ngaire rimu and white-pine of small or medium size are found intermixed in about equal quantities on swampy land, a somewhat unusual occurrence.

The following are the chief timbers utilized for conversion: Rimu or red-pine: This is the most useful timber in the district, and next to white-pine it is the most plentiful. Taranaki red-pine, when cut out of large trees, is of the best quality, and of greater durability than is usually afforded by other districts. Another peculiarity demanding notice is exhibited by old trees, sometimes of the largest dimensions, which often produce timber as silky in texture and as easily worked as the best medium-sized logs in Southland or Westland. Usually the wood is of a light red colour, straight in the grain, and of even texture. Its durability is proved by its being extensively used in the construction of bridges, some of which have been standing for eleven years and are still in excellent order, requiring a very small expenditure for repairs. The joints, however, are carefully protected, in order to prevent the access of water as completely as possible. For bridge-building rimu is preferred to matai in this district. White-pine or kahikatea: This timber often occurs of large dimensions and excellent quality: the comparative rarity of other good timber renders it of greater value in this district than in some others. In habits it resembles the rimu, solitary or scattered specimens being of large size; when forming small masses, especially in very swampy ground, it is much smaller, and the quality of the timber is somewhat inferior. It is largely used for packing-cases for canned meats and similar products, also for casks, &c. Matai (black-pine): This tree attains noble dimensions in many localities, although but rarely found in large quantity. It is not so highly valued in this district as in others, and is considered less durable than matai grown in the South. Totara: this is a very rare timber and, so far as I could learn, never occurs in quantity. Miro: not unfrequently this attains good dimensions, but is somewhat local. It is always converted when of large size, and is used for ordinary purposes, although less durable than the best rimu. Pukatea (*Laurelia novæ-Zelandiæ*): this is usually converted when met with, and is used for ordinary building purposes where not in contact with the ground, also for boat-building, and for cabinet-work: it is of considerable durability, easily worked, and does not split. Tooth-leaved and entire-leaved beech: these timbers are occasionally split for railway-sleepers: as they occur but rarely in low-land districts they do not come within reach of the saw-millers. Rata (*Metrosideros robusta*): this is abundant throughout the district, often forming the chief constituent of the forest, and attaining enormous dimensions. It is converted to a small extent for telegraph arms, railway waggon-building, rails, &c.; and is largely used for firewood. Tawa (*Beilschmiedia Tawa*): this is abundant, at elevations below 2,000ft., throughout the district, attaining large dimensions in many localities. Specimens with trunks 36in. in diameter are not unfrequent; from 24in. to 30in. may be considered a good average, but logs of only 12in. diameter are often converted. Nearly all the saw-mills are more or less engaged in its conversion, which may be regarded as a speciality of the district, and forms an important item in its trade. Fuller details will be given in another section. Puriri is much valued for sleepers, fencing-posts, and special purposes where great strength and durability are required, but has become extremely rare in the settled districts. Toro

(*Myrsine salicina*), rewarewa, maire-raunui (*Olea* [Cunninghamii]), and some other common trees are occasionally converted, but form no appreciable portion of the total output.

#### MOUNT EGMONT FOREST RESERVE.

At present this is the only State forest in the district, and was originally set apart for climatic purposes. It forms a circle twelve miles in diameter around the grand cone of Mount Egmont, and contains 72,382 acres, of which the Chief Surveyor computes 50,000 acres to consist of forest and scrub not exceeding 20ft. in height, 15,000 acres low scrub, and 8,000 acres open, forming the portion of the cone above 4,500ft. or thereabouts. The lower margin of the forest descends to between 1,300ft. and 1,400ft., or even lower, on the southern face; on the northern, or, rather, the north-western, side it crosses the Pouakai Range, and at this place scarcely descends below 4,000ft. The upper margin of the scrub is fully 4,500ft.

The amount of convertible timber comprised in this large area is very small; here and there a few well-grown medium-sized red-pines may be found near the lower margin, with an occasional kahikatea or matai, and some good tawa; the rata is frequent, and sometimes attains an enormous size; a grand specimen on the lower part of the ascent has a trunk over 20ft. in diameter, and is one of the finest in the district. The vast mass of the forest consists of mahoe, fuchsia, horopito, broad-leaf, akeake, and scrubby growth, of no present value for conversion. Much of this undergrowth is, however, of a very open character, consisting of large spreading mahoe and towai, branching from the base, but of sufficient height to allow a man to walk underneath with ease; so that considerable areas might be easily cleared and the process of replacement carried on at a comparatively small cost. Larch, black Austrian pine, Douglas fir, English oak, and various eucalypts would flourish at different altitudes; so that the formation of a forest of immense value may be fairly anticipated, while increased protection would be given to the numerous streams which commence their course within its limits.

#### THE TIMBER INDUSTRY IN TARANAKI.

Notwithstanding the small proportion of convertible timber comprised in the Taranaki forests the timber trade is of considerable importance, finding employment for seven saw-mills and 106 men. The annual output is estimated at 5,750,000 superficial feet, which I think is rather under the mark. With the exception of a mill supplying local demands at Manaia, all the mills are on the line of the New Plymouth and Wanganui rails or closely adjacent. The foreign export is but trivial; for the year 1884 it was returned at 114,262 superficial feet, valued at £704.

All the mills are working on freehold land, the greater portion of the logs being obtained from the holders of deferred-payment sections. The convertible timber being usually scattered renders the working of the bush more expensive than in other districts. Timber-wheels are often employed to bring the timber to the loading-places on the tramways, and in one instance I found that logs were hauled in this way for nearly three-quarters of a mile, the wheels being drawn by six pairs of oxen.

Nearly all the mills are worked entirely by day-labour. In some cases contracts are made for the delivery of logs to the tramways, and in many cases the logs must cost fully 3s. per 100 superficial feet before they arrive at the mill. Most of the mills are worked in an efficient and economical manner: vertical breaking-down saws are more frequent than in the mills of the South Island.

I have already spoken of the excellent quality of the Taranaki rimu, and in confirmation thereof may state that at one of the best mills I was shown a large quantity of well-manufactured boards 20in. to 24in. wide, prepared to the order of an Auckland firm, solely for cabinetwork.

Some time back the saw-millers found their profits were destroyed by the keen competition resulting from over-production: in order to meet the evil they agreed upon a common scale of prices, and, in order to maintain it, resolved to close their mills for one or two days in the week when necessary. The agreement appears to have been faithfully kept and to have worked in a satisfactory manner. The ruling price for first quality rimu is about 10s. per 100 superficial feet delivered at New Plymouth or Waitara; for white-pine, 6s. per 100: at stations along the line it is from 1s. to 2s. per 100ft. less. Wages are from 6s. to 7s. per day, mill hands being paid wet or dry. In practice it is found that payment is made for twenty-five days per month at most of the mills; so that stoppages have not averaged more than two days per month, although I believe this has been exceeded in some instances.

The royalty paid to settlers varies from 2d. to 3d. per 100ft. log measurement, payable when the timber is removed. In some cases instead of money timber, is given for house-building, the quantity required for the building being delivered at once. It is obvious that arrangements of this kind are a great convenience to settlers of limited means, notwithstanding the low rates paid as royalty.

The great drawback to the prosperity of the saw-millers in the district is unquestionably the comparatively small yield of available timber per acre, and the uncertainty of obtaining future supplies. A few swampy sections which came under my notice would certainly yield over 20,000 superficial feet per acre, but these were exceptional and of very small extent; 15,000ft. per acre is considered an unusually large return; from 6,000ft. to 10,000ft. per acre may be considered a good average, but large areas cleared by the saw-millers will not come up to the lowest of these figures.

Holders of deferred-payment sections are required by the regulations to bring at least one-twentieth of the entire area under cultivation each year until one-fifth of the section is cleared and cultivated. The strict enforcement of this condition has necessarily led to the destruction of a large quantity of convertible timber, and in some instances has caused considerable loss and incon-

venience to the saw-miller, who has possibly gone to the expense of constructing a tramway to the border of the section, when the holder, being afraid that the timber will not be cleared in time to enable him to comply with the regulations, has hurriedly felled the trees and proceeded to burn them off; the fire, not being confined to the felled timber, has run through the whole of the section, and not infrequently through some of his neighbours' sections also. Under these conditions it is not surprising that the saw-millers feel anxious about their future supply, and desire such a modification of the regulations in force as may tend to lessen the destruction inseparable from the present system. In this they are supported by the great bulk of the holders of deferred-payment sections, to whom the small sums received as royalty for the timber are often of considerable importance, while the large destruction of raw material reduces their opportunities of obtaining remunerative employment.

It is not easy to see in what way these modifications can be made without a violation of the letter and spirit of the deferred-payment scheme, the principal object of which is to insure the speedy settlement of the land. Any extension of the time allowed for clearing would lead to good-timbered sections being taken up solely for the sake of the growing timber, which would be cleared off as quickly as possible, when the sections would be thrown up. The remedy appears to be to place all timbered sections under Class III. of State forests, so that the timber would be preserved until required for conversion, and when cleared would at once revert to the waste lands of the Crown.

#### TAWA CONVERSION IN TARANAKI.

Tawa has been utilized to some extent for dairyware, tubs, buckets, butter-kegs, &c., in Christchurch for the past two or three years, the supply being obtained from Marlborough. It has also been used, although to a very trivial extent, in Hawke's Bay and Wellington; but in Taranaki its conversion is rapidly expanding, and already it forms an important item of the trade, being converted at all the mills where logs can be obtained in quantity. The logs usually sent to the mills vary from 6ft. to 15ft. in length, and usually from 16in. to 24in. in diameter. They are mostly cut into  $\frac{1}{4}$ in. or  $\frac{5}{8}$ in. boards. The boards for heads are 12in. or 14in. wide; those for staves are ripped into 3in. widths. The battens for staves are passed through a moulding machine, or through a small planing machine with special knives. They come out properly formed—concave on the lower surface, convex on the upper. Mr. Robson, the manager of the New Plymouth Sash and Door Company's mill at the Ngaire, by a simple contrivance fixes two knives in a planing machine, which enable one man and a boy to shape 4,000 superficial feet of stave battens per day. They are next cross-cut into suitable lengths—18in. for a 60lb. cask, 20in. for a 90lb. cask. When cross-cut the staves are tapered by a fine-toothed circular saw, a small triangular slice being taken from each side at both ends, so that the stave is 3in. wide in the middle and  $2\frac{1}{4}$ in. at the ends. The heads are formed of a single piece 11 $\frac{1}{4}$ in. or 13 $\frac{1}{4}$ in. in diameter, according to the size of the cask. If formed in two or three pieces the cask would be improved, but this would increase the labour. The staves and ends are now ready for the cooper, who can usually put from twelve to fourteen casks together per day, and earns probably about 10s. per dozen. Tawa prepared for the cooper sells at about 14s. per 100ft. superficial; undressed boards, usually at 8s. Sometimes staves and heading are sold in sets at 1s. 6d. for a small-sized keg, 1s. 10d. for one of large size.

Mr. H. Brown informed me that orders for tawa boards had been received from Christchurch, but the low price offered—8s. 6d. per 100ft. superficial, delivered—did not allow of their being executed, as railway freight, sea freight, and wharfage would amount to 4s. 6d. per 100ft.; and, as the waste in conversion averages from 35 to 50 per cent. on log measurement, a considerable loss would have resulted.

Mr. Ward, cooper, New Plymouth, informed me that tawa was unsuitable for the heads of wine-casks, as the wine passes through the vessels of the wood; but that he had found casks constructed of tawa staves and kauri heads to answer the purpose thoroughly. He informed me that he kept his tawa in stock for nearly a year before working up, seasoning it for the first six months in the open air, and removing it to sheds on the approach of winter. He has utilized several of the New Zealand timbers, and is justly proud of the substantial character of his manufactures when compared with the perishable American tubs and buckets so largely in use.

It is not easy to form an exact estimate of the total quantity of tawa converted annually in Taranaki, but it must be considerable. One saw-miller assured me that he turned out on an average 13,000ft. per month. Fully eight thousand butter-kegs are made per annum in New Plymouth alone, in addition to a large number in Inglewood and other places. Perhaps the most remarkable feature in this speciality is that large orders for butter-kegs are received from Auckland every year, although tawa is abundant in most parts of that district.

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## WELLINGTON.

THE southern portion of this district occupies the entire breadth of the North Island, from Cook Strait to the mouth of the Rangitikei River on the West Coast, and Cape Turnagain on the East. Its northern portion extends to the 39th parallel of south latitude, comprising the country lying between the Provincial Districts of Hawke's Bay and Taranaki and the sea to the mouth of the Rangitikei. The total area is estimated at 7,000,000 acres. The district thus comprises the loftiest mountains of the North Island—Ruapehu, 9,100ft., and the elevated country at its base, the Kaimanawa Range, the western slopes of the Ruahine Mountains, the Tararua and Rimutaka Ranges—so that much of the area is of a broken character; consequently a large portion of the forest is only of poor or indifferent quality. On the other hand, the Wairarapa and Manawatu Valleys have long been celebrated for the quantity and quality of their totara and rimu, which afford employment to about six hundred men. In many places the mountain-slopes carry extensive forests of tooth-leaved, entire-leaved, and silver beeches, often of large size, while the valuable black maire occurs in greater abundance and attains larger dimensions than in any other district in the colony.

The total area of forest-land, exclusive of climatic reserves, is 2,406,000 acres, of which 706,000 acres are held by the Crown, and 1,700,000 acres by the Maoris. There are now 435,000 acres of Crown forests under survey for purposes of settlement. Forest reserves for climatic purposes comprise 210,680 acres. In the northern part of the district beech-forests cover a considerable area on the slopes of the Kaimanawa Mountains, but at present little is known as to their quality and value. The western face of Ruapehu is clothed with forest up to 4,000ft. or higher; on the high land much of the forest is of good quality up to 2,000ft., containing a large proportion of red- and white-pine, towai, and silver beech; at a greater elevation all these are replaced by mountain beech, which also forms a broad belt on the northern and southern faces of the mountain, but on these sides it does not extend into the lower lands. A vast extent of forest occupies the middle portion of the Wanganui basin, but in many places it is light and patchy. The western slopes of the Ruahine Range are covered with forest, the general character of which resembles that of the Makaretu Reserve, on the Hawke's Bay side of the range, but in many places it exhibits greater luxuriance, and the proportion of ordinary pines is greater. It extends into the upper part of the valley of the Rangitikei, and between that river and the Manawatu; formerly it constituted one of the best-timbered districts in the colony, but much of it is now cleared and settled.

The Tararua Range, in the southern part of the district, is wooded on both sides, although much of the forest is of indifferent quality. On the east the lowland forest extends across the Puketoi Range to the vicinity of the coast at Akiteo, and comprises a large proportion of good timber. Several special settlements are being formed on the western side of this area. Farther south, the eastern side of the district possesses but little forest of really good quality, a large extent of forest land having been cleared by fire. In the Wairarapa, however, a large amount of good timber is still to be found on the lower slopes of the Tararua Range, and will supply the mills of the district for some years to come. The Rimutaka Range, on the western side of the Wairarapa Lake, carries a large amount of beech, much of which, however, is small and growing in places difficult of access. Red- and white-pine, tawa, &c., occur in small valleys and hollows of the mountains, but only occasionally in large quantity.

Extensive forest reserves have been made in the Wellington District, but almost exclusively for climatal purposes. They have been formed on the higher slopes of the Ruahine, Tararua, and Rimutaka Ranges, on land not suited for settlement on account of its excessively-broken character and poor quality. In portions of these reserves the whitewoods and other valueless kinds may be gradually replaced by useful timber, although the process will be tedious and somewhat costly; but the greater part must remain in a state of nature, as, even if good timber could be grown in such situations, it could not be got out at any reasonable cost. The preservation of the forest in localities of this kind is absolutely necessary for the protection of the sources of the streams and rivers.

### CHARACTER OF THE FOREST.

The mixed lowland forest comprises a large proportion of the best timber in the district for milling purposes, although in many localities the trees are much scattered. Red- and white-pine, totara, matai, and miro are mixed with tawa, maire-raunui (which in some districts is plentiful) titoki, cedar (*Dysoxylum spectabile*), rewarewa (*Knightia excelsa*), rata, towai, and other large trees in varying proportion. In many places tawa is the prevailing tree, and the pines may be solitary and distant: in others they may occur more frequently, but scarcely forming groves, and in this case are mostly of large dimensions, as may be seen at Pakuratahi, where rimu, kahikatea, maire-raunui, and tawa are large and of good quality. In a few places tooth-leaved and entire-leaved beeches occur sparingly, but they are more frequent at higher levels. Sometimes the greater part of the forest may consist of red-pine alone, or more commonly mixed with white-pine, or in swampy valleys of white-pine alone. In other places large patches or groves of totara occur, and constitute the most valuable portion of the forest. A dense undergrowth of various shrubs and small trees, frequently intermixed with supplejack, often impedes progress.

Much of the mixed forest now in the hands of the sawmillers at the foot of the eastern side of the Tararua Range is of considerable value, although the pines are by no means of the largest dimensions—say, from 30ft. to 50ft. in the clear, and from 21in. to 36in. in diameter at the base. In most places a considerable quantity of tawa is found, but little of it being above the medium size. Rimu, kahikatea, matai, and totara occur freely, sometimes intermixed, no one kind pre-

ponderating; but not unfrequently the different kinds form small clumps, rarely consisting of more than a dozen trees. Forest of the latter kind is usually of a dense character, the better portions averaging from 20,000 to 60,000 superficial feet per acre, especially where totara is the prevailing tree.

In what may be termed the upland forest, occupying the slopes of low hills, the forest is often so completely mixed that it is not easy to find two trees of the same kind growing close together. Except in beech and rata, as a rule the trees are decidedly smaller than those in the valleys; but the forest is more dense, so that the total yield per acre is very large, and forest of this kind is often of great value to the saw-miller.

Mountain forests consist chiefly of beeches, mixed in varying proportion, or comprising a single species only, up to 3,000ft.; above that altitude they are restricted to mountain beech. I have not seen the silver beech below 1,500ft. in the district; tooth-leaved beech descends to 800ft., and entire-leaved beech occurs at the sea-level in Lowry Bay. All the beeches appear to be absent from the south-west corner of the district, between Port Nicholson and Porirua Harbour.

In many cases, however, the upland and lower mountain forests contain but little timber of any value for conversion, and in some places are altogether destitute. An example of this kind is afforded by the State forest reserve on the Tararua Range, at the Manawatu Gorge. With the exception of a few medium-sized ratas, and very rarely indeed an occasional rimu on the lowest parts of the range, the forest is composed of small whitewood and scrubby growth, of no value except for firewood. The greater part of the climatic reserves on the Tararua Mountains appear to be of this character.

The totara forest, on the other hand, is the most valuable of all: much of this timber in the Wairarapa is excellent, both with regard to quality and dimensions, but large totara groves are becoming very rare, although a considerable quantity is undoubtedly scattered through the forest in the north-eastern corner of the district. In the valley of the Manawatu it is equally rare: two or three saw-millers informed me that it was practically cut out in that district, but this is not literally correct, even in the immediate vicinity of the river, while in the upper part of the Oroua I am assured that a large quantity is still available, although in places difficult of access. With the exception of a few limited areas in localities where it could not be profitably converted at present rates, I have no actual knowledge of any large extent of totara forest.

The forests of the Pourewa and Mangaone Valleys, Rangatau, and Waimarino have been described in the first part of this report under the Forests of the North Island Central Railway, so that it is not necessary to offer a detailed description of other forests in this district. The chief timbers used for conversion are the totara, rimu, kahikatea, matai, tooth-leaved beech, entire-leaved beech, rata, black maire, and occasionally the towai and miro. Rewarewa and some other ornamental timbers are occasionally converted for the purposes of the cabinetmaker. Tawa, although occurring in great abundance, receives no attention except for firewood.

Compared with Hawke's Bay, totara occupies relatively a less important position, the proportion of rimu and other timbers passing into consumption being much larger: this arises from no disposition to undervalue totara, but from the greater abundance of ordinary pines. Rata and black maire are more largely used for bridge-building and other constructive works in this district than elsewhere. Towai is often called "red-birch," and converted in mistake for tooth-leaved beech, to which it is greatly inferior. Tooth-leaved and entire-leaved beeches are largely used for bridge-building, railway-sleepers, fencing, &c. Walnut-leaved cedar (*Dysoxylum spectabile*), although of rather soft texture, is frequently utilized for fencing-posts and stakes, especially in sandy soil, where it exhibits much greater durability than other timbers, the totara not excepted.

### THE TIMBER INDUSTRY IN WELLINGTON.

The Wairarapa and Manawatu valleys have long been important centres of timber-conversion. Prior to the construction of railways the Wairarapa timber had to be forwarded to Wellington by timber waggons, which crossed the Rimutaka Range at an elevation of about 1,800ft., so that haulage was costly, and the output small notwithstanding the high prices that prevailed. The mills in the Manawatu had their outlet at Foxton, and were able to send timber by coasting craft to Wanganui, Wellington, and Lyttelton. Waiting the completion of railway communication with Wellington, Foxton still continues to be the chief outlet for these mills, although the extension of the railway system has opened the markets of the settled district between Halcombe and Hawera, and has led to a large and increasing development of the Manawatu trade. Conversion in the Wairarapa has increased in a still greater ratio, fostered partly by direct railway communication with Wellington, and partly by the increasing demand for totara, which occurs in larger quantity than in the Manawatu.

The total number of saw-mills in the district is thirty-five, affording employment to about 550 men and boys. The annual output is fully 35,000,000 superficial feet per annum, so that it is second only to Auckland in this respect, although Southland employs a larger number of men.

All the mills obtain their supply of logs from freehold land: in some places a portion of the supply is obtained from settlers, a payment of 3d. or 4d. per 100 superficial feet being made as royalty for red- and white-pine. In one instance a saw-miller whose own land is nearly cleared stated that he expected to obtain a supply for his mill in this way for five or six years longer from settlers resident along the line of railway, although two mills in the immediate vicinity had ceased working owing to the scarcity of timber. In a few instances the logs are given by the settlers on account of the benefit derived by the partial clearing of the land, but as a rule logs in the vicinity of the railway always find purchasers at the rates named. Totara fetches a higher price—never less, I believe, than 9d. or 1s. One saw-miller informed me that he considered totara would not be dear at 2s. 6d.

In both the Manawatu and Wairarapa, converters frequently acquire the freehold, and, after clearing the timber, lay down the land in grass, either retaining it for farming purposes or disposing of it at prices which usually cover first cost and all subsequent expenses directly connected with the improvement of the land: in fact it is no uncommon thing for unimproved land to be sold at a higher price after the convertible timber has been cleared than was originally paid. An instance of this kind was brought under my notice in the Manawatu in which land purchased at £5 per acre realized £5 10s. immediately after the removal of the totara and rimu: so that in many cases the timber is obtained free of cost except possibly a small percentage for interest on the original purchase during the time occupied in removal.

The remarks made with regard to totara in Hawke's Bay apply equally to totara in the Wellington District: the percentage of waste is often very large, as I had occasion to witness at Taonui, where the actual yield of a fine grove is considerably reduced by the partial decay of the tops, although the sound timber is of the best quality.

I have already mentioned the large returns sometimes afforded by totara, and in proof thereof may state the exact figures obtained from a small grove belonging to Mr. A. Grammer, and situate near the mouth of the Pohangina. That gentleman informed me that the grove did not exceed thirty acres in extent, all told, and was leased to Messrs. Warne and Beard, whose mill was supplied by it for a period of two years, and who paid a royalty of 1s. 3d. per 100ft. superficial, which on 3,104,000ft. amounted to £1,940. This gives an average yield of 103,466ft. superficial, equivalent to £64 13s. 4d. per acre. These figures were subsequently confirmed by Messrs. Warne and Beard on my paying a visit to their mill. The timber on ordinary mixed-forest land, if of fairly good quality and accessible by tramway, is estimated by saw-millers to be worth £5 per acre.

During the past year the average price for red-pine at the mills has been 6s. 6d. per 100ft. superficial; white-pine, 4s. 6d. to 5s.; totara, 10s. to 14s. 6d.; matai, 6s. 6d.; black-maire, 22s. to 30s.

In the value of its timber export, as well as in its annual output, Wellington ranks next to Auckland. Although the actual quantity shipped is rather less than that of Southland, its value is nearly twice as great, which is owing to its containing a larger proportion of totara, shipments from Southland consisting chiefly of red- and white-pine.

During the year ending the 31st March, 1884, the quantity and value of the timber export of Wellington and Southland respectively were: Wellington, 1,134,960 superficial feet, £8,113; Southland, 1,312,909 superficial feet, £4,536.

The total quantity of timber carried on the three railway lines of the southern part of the North Island during 1884 amounted to 103,218 tons, which was divided in a singularly equable manner, as under:—

Miles.		Firewood.	Timber.		Total.
		Tons.	Tons.	Sup. Feet.	Tons.
76	Napier-Tahoraite	... 13,235	... 20,883	= 10,441,400	... 34,118
129	New Plymouth-Foxton	... 13,115	... 22,218	= 11,109,000	... 35,333
71	Wellington-Masterton	... 12,160	... 21,607	= 10,803,700	... 33,767
		<hr/> 38,510	... 64,708	= 32,354,100	... 103,218

EXPORTS FOR THE YEARS 1884 AND 1885.

The following statement shows the quantity and value of timber (sawn and baulk) exported during the years ended the 31st December, 1884 and 1885, from the several provincial districts :—

Provincial District.				Sawn Timber.		Logs.	
				Quantity.	Value.	Number.	Value.
1884.				Feet.	£		£
Auckland	...	...	...	21,634,670	112,557	5,014	23,370
Taranaki	...	...	...	114,262	701	...	...
Wellington	...	...	...	1,134,960	8,113	...	...
Hawke's Bay	...	...	...	108,115	624	...	...
Marlborough	...	...	...	5,000	25	...	...
Westland	...	...	...	66,702	234	...	...
Canterbury	...	...	...	334,663	1,707	...	...
Otago...	...	...	...	55,875	427	...	...
Southland	...	...	...	1,312,909	4,536	...	...
Totals	...	...	...	24,767,156	128,924	5,014	23,370
1885.							
Auckland	...	...	...	25,694,997	127,463	3,697	16,012
Taranaki	...	...	...	30,000	104	...	...
Wellington	...	...	...	903,463	5,241	...	...
Hawke's Bay	...	...	...	557,944	2,868	...	...
Marlborough	...	...	...	130,000	500	...	...
Westland	...	...	...	...	...	...	...
Canterbury	...	...	...	501,561	2,744	...	...
Otago...	...	...	...	106,980	657	...	...
Southland	...	...	...	514,068	1,778	...	...
Totals	...	...	...	28,439,013	141,355	3,697	16,012

The quantity and value of kauri gum and fungus exported during the years ended the 31st December, 1884 and 1885, respectively, are as follow :—

				1884.		1885.	
				Tons.	Value.	Tons.	Value.
					£		£
Kauri gum	...	...	...	6,393	342,151	5,875½	299,762
Fungus	...	...	...	Cwt. 6,049	10,553	Cwt. 6,069	10,922

On completing this report on the condition of the native forests and the position of the timber trade, I have to express my thanks to Mr. J. McKerrow, Surveyor-General, for the valued help and assistance afforded during my inquiry ; also to Mr. S. P. Smith, Assistant-Surveyor-General, and the Chief Surveyors of provincial districts, more especially to Mr. J. Spence, of Invercargill ; and not least to Mr. H. J. H. Elliott, Under-Secretary for Crown Lands.

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