

1904.

WESTERN AUSTRALIA.

ROYAL COMMISSION

ON

FORESTRY.

FINAL REPORT.

Presented to both Houses of Parliament by His Excellency's Command.

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HON. CHARLES HARPER, M.L.A. (Chairman).

W. ATKINS, Esquire, M.L.A.

ROBERT HASTIE, Esquire, M.L.A.

*W. V. FITZGERALD, Esquire.

NEWTON J. MOORE, Esquire.

*Resigned 8th March, 1904.

WESTERN AUSTRALIA,
TO WIT.

FRED. G. D. BEDFORD,
Governor.

[L.S.]

FIRST COMMISSION

By His Excellency Admiral Sir FREDERICK GEORGE DENHAM BEDFORD,
Knight Grand Cross of the Most Honourable Order of the Bath, Governor
in and over the State of Western Australia and its Dependencies,
etc., etc., etc.

To CHARLES HARPER, Esquire, M.L.A.; ROBERT HASTIE, Esquire, M.L.A.; WILLIAM ATKINS,
Esquire, M.L.A.; WILLIAM VINCENT FITZGERALD, Esquire; and NEWTON MOORE, Esquire.

WHEREAS it is desirable that a Commission be appointed to inquire into and report upon—

- (1.) The world's supplies of timber which come into competition with those of this State, and more particularly the hardwood timbers of the Eastern States of the Commonwealth;
- (2.) The supplies available in this State of each variety;
- (3.) The area of jarrah and karri forests respectively cut out;
- (4.) The rate at which the forests are being depleted;
- (5.) Whether the frequent reports of enormous waste are correct; if so, what steps are necessary to prevent same;
- (6.) Whether any, if so what, steps should be taken, and in what locality, to plant softwoods in Western Australia.

NOW THEREFORE I, Admiral Sir FREDERICK GEORGE DENHAM BEDFORD, G.C.B., Governor as aforesaid, do hereby appoint you, the said Charles Harper, Esquire, M.L.A.; Robert Hastie, Esquire, M.L.A.; William Atkins, Esquire, M.L.A.; William Vincent Fitzgerald, Esquire; and Newton Moore, Esquire, to be Royal Commissioners for the purposes aforesaid: And I do hereby desire and request that you do, as soon as the same can conveniently be done, using all diligence, report to me, in writing, your proceedings in virtue of this Commission.

And I do appoint you, the said Charles Harper, to be Chairman of the said Commission.

Given at Perth this 22nd day of April, 1903.

By His Excellency's Command,

WALTER KINGSMILL,
Acting Premier.

GOD SAVE THE KING ! ! !

WESTERN AUSTRALIA,
TO WIT. }

FRED. G. D. BEDFORD,
GOVERNOR.

[L.S.]

SECOND COMMISSION

By His Excellency Admiral Sir FREDERICK GEORGE DENHAM BEDFORD,
Knight Grand Cross of the Most Honourable Order of the Bath, Governor
in and over the State of Western Australia and its Dependencies, etc., etc.,
etc.

To CHARLES HARPER, Esquire, M.L.A.; ROBERT HASTIE, Esquire, M.L.A.; WILLIAM ATKINS,
Esquire, M.L.A.; WILLIAM VINCENT FITZGERALD, Esquire; and NEWTON MOORE, Esquire.

WHEREAS, by a Commission dated the 22nd day of April, 1903, I, Admiral Sir Frederick George Denham Bedford, G.C.B., Governor as aforesaid, did appoint you, Charles Harper, Esquire, M.L.A.; Robert Hastie, Esquire, M.L.A.; William Atkins, Esquire, M.L.A.; William Vincent Fitzgerald, Esquire; and Newton Moore, Esquire, Commissioners to inquire into and report upon the world's supplies of timber which come into competition with those of this State, and more particularly the hardwood timbers of the Eastern States of the Commonwealth, and upon other matters therein set forth: AND WHEREAS it is desirable to extend the purpose of the said Commission as hereinafter appearing:

NOW, THEREFORE, I do hereby appoint you to inquire into and report upon, as well the matters set forth in the said Commission, as also upon the following matters, namely:—

- (1.) To make inquiry and take evidence as to the methods of cutting, carrying, and distributing timber by all persons engaged in the timber trade of this State, and to make recommendations thereon;
- (2.) To make inquiry and to take evidence as to the efficacy of the existing regulations for the protection of the forests in all senses, and to make recommendations thereon;
- (3.) To take evidence and make recommendations for the future development of State Forestry, inclusive of the training of officers, the raising and planting of desirable exotic timber trees, as well as the indigenous species, and the suitable localities for such operations;
- (4.) To make recommendations as to the advisability or otherwise of establishing State Forests under Statute;
- (5.) And to inquire into any other subjects in connection with the forests and the timber trade which may, in the opinion of the Commission, be desirable in the public interest;

And I do hereby extend the purpose of the said Commission accordingly, and in all other respects I confirm the said Commission.

Given at Perth this 24th day of June, 1903.

By His Excellency's Command,

H. GREGORY,
Acting Colonial Secretary.

GOD SAVE THE KING!!!

ROYAL COMMISSION ON FORESTRY.

FINAL REPORT.

To His Excellency Admiral Sir Frederick George Denham Bedford, G.C.B., Governor in
and over the State of Western Australia and its Dependencies, &c., &c., &c.

MAY IT PLEASE YOUR EXCELLENCY:

The First Progress Report made by your Commission on August 6th last was framed with a view to furnishing information which the Commission believed would be sufficient to justify Parliament in enacting such laws during the session of 1903 as would have sufficed to meet the more urgent necessities of the timber industry and the conservation of forests, thus removing the restrictions placed on the extension of timber-cutting by the resolution of Parliament (October 8, 1902).

In consequence of the extremely heavy work entailed upon members of Parliament by the unusual number of Bills submitted during the last session, those members of the Commission holding seats in Parliament found it impossible to give time to the work of this Commission while Parliament was in session. Since the prorogation of Parliament the time of these members has had further demands made upon it by the imminence of a general election. These conditions caused a practical suspension of the work of the Commission for many months, which, though much to be regretted, was unavoidable. This delay unfortunately necessitated the retirement from the Commission of Mr. W. V. Fitzgerald, whose long study of forestry in connection with his botanical researches was very valuable to the Commission; and this, added to his assiduous work in collating details of information, made his resignation a matter of regret to the remaining members of the Commission.

The later work of the Commission has been mainly directed to the acquisition of information within the outlines given in the First Progress Report. In this connection it is important to state that the Fourteenth Report of the Victorian Royal Commission on Forestry (which Commission was issued in the State of Victoria in 1897, and presented its Fourteenth Report in March, 1901) contains an immense amount of valuable information, in an extremely interesting form, on forestry throughout the world. Much of the information asked for by our Parliament is necessarily contained in that report; your Commission, therefore, concluded that it would be wise to refer seekers after more detailed information to that report, rather than incur expense and occupy time going over the same ground to obtain a similar result.

Definite answers to the inquiries contained in the resolution of Parliament, and embodied in the Commission, are given hereunder, so far as they could be obtained within the limits of time and expense considered justifiable by the Commission.

WORLD'S SUPPLIES OF TIMBER.

1. What are the world's supplies of timber which come into competition with those of the State; and more particularly the hardwood timbers of the Eastern States of the Commonwealth?

Recent estimates give the world's forest area at about 2,500 million acres. Only a small proportion of this, however, yields timber suitable for export. There are, however, very few merchantable timbers in the world which do not, in a greater or lesser degree, come into competition with jarrah or karri. The cost of handling, transporting, and working these heavy woods enables the softwoods, especially oregon pine, to compete against them for some purposes inside the State itself, even to the very borders of our forests. Softwoods, as long as supplies are available, must maintain their advantages for superstructure all the world over, while for street paving and railway purposes creosoted pine is a keen competitor with jarrah.

The evidence of Messrs. Davies and Temperley seemed to imply serious injury to the jarrah and karri trade through the competition of the as yet undeveloped forest resources of Borneo and the Philippine Islands, and it cannot be doubted that valuable timbers, in considerable quantities, exist in these lands. But the, as yet, unknown factor is the question of the cost of extracting timber from the tropical jungle (often extremely mountainous) and placing it on rail or water. Experience may prove that the easy traversing of our forests, thanks to the absence of undergrowth and the excellent nature of the country for tramlines, added to the favourable nature of the climate to strenuous human labour, are sufficient advantages to counteract the low rates of wages for less efficient men in tropical forests, burdened as these forests are with dense masses of tangled undergrowth.

The competing hardwoods of the Eastern States are considerable in quantity; but evidence is somewhat conflicting as to their competing against jarrah and karri for export. Apart from the question of quality, the fact that the trade in this State has reached its present magnitude unaffected by the knowledge of the existence of the forests of the Eastern States would seem to indicate that capitalists are disinclined to exert enterprise in developing a timber trade in competition with that of this State. Furthermore, the depression supervening on the long drought in the Eastern States has kept wages at a low rate in those States. Should a vigorous export timber trade from thence arise, it is certain that wages there and here would be assimilated. It seems probable also that the fear expressed by some of the danger to our export trade from the competition of Tasmania or New South Wales is born of a desire to influence the cost of manipulation and transport in this State, in the interests of the trade. These conditions indicate strong doubts as to whether the jarrah trade is likely to be adversely affected by the hardwood supplies of the Eastern States.

AVAILABLE JARRAH SUPPLIES.

2. What are the supplies available in this State of each variety?

The First Progress Report gives the estimate of virgin jarrah forest to the North of the Blackwood River, and suitable for milling, at about 2,000,000 acres—equivalent to about 32 years' supply, based on the present rate of cutting (about 60,000 acres per annum, yielding an average of 3.1 loads per acre). To the South of the Blackwood there are considerable supplies of this timber; but being so constantly intergrown with karri, blackbutt, and red gum, no fair estimate of quantities can be given. In addition to these areas, there are several millions of acres of jarrah country, not of sufficient commercial value for milling purposes, but which will, as the railway system develops, afford immense scope for sleeper-hewing; an instance of which will be afforded by the construction of the Collie-Narrogin railway.

SUPPLIES OF KARRI.

Karri is limited to the tract of country lying between the Margaret River on the North and the Porongorup Range on the South, about 1,200,000 acres of which is under karri. The highest type of this magnificent tree is found in the neighbourhood of the Warren River. Of the area mentioned some 150,000 acres have been cut over at Karridale, Torbay, and Denmark, leaving an area of over 1,000,000 acres of virgin forest which cannot be exploited until tapped by a railway. This exhaustion of available supplies being coincident with a very active demand for new farm lands, offers an exceptional opportunity for initiating railway construction into that rich belt of country—"the Gippsland of the West"—lying between the Blackwood River and Denmark (carrying, it is estimated, 12,000,000 loads of karri in the round), blessed with a fertile soil and an abundant rainfall.

SUPPLIES OF TUART.

The area covered by this timber is very limited in extent, being practically confined to a narrow strip near the coast, lying between Fremantle and Busselton. The larger portion of this area has been alienated from the Crown, although quite recently the Government have repurchased an estate embracing some of this forest. Evidence was not taken as to the area and extent of the tuart country, but the approximate estimate arrived at through the local knowledge of the members of the Commission is 100,000 acres, carrying about 150,000 loads of timber. This timber is recognised by the engineering profession as being one of the best timbers known for works where great strength and solidity are necessary. The cost of procuring this timber is, however, much higher than that of jarrah. In the early fifties, several cargoes of this timber were shipped to Chatham and Portsmouth from Bunbury and Fatfield, to the order of the Admiralty.

SUPPLIES OF BLACKBUTT.

It would be impossible to arrive at the area over which blackbutt grows, because it is so closely associated with jarrah and red gum that the greatest difficulty would be experienced in making anything like a reliable estimate. The home of the blackbutt is in the gullies and gorges or rich flats of the Darling Range; and no better example of its growth can be seen than in the valley of the Hamilton River, in the Collie District. It attains a great height, and would give a higher percentage of sound wood, and is less inflammable than any other of our timbers. It should prove of great value where those qualities, combined with strength, are important.

SUPPLIES OF WHITE GUM OR WANDOO.

White gum or wandoo, though existing over a considerable area of country, does not appear to offer any hope of becoming an exportable timber. Though an excellent timber for strength and durability, it is thinly distributed, seldom sound at the heart, and does not develop large sizes. This timber is found in its best form in a belt of country running North and South on the Eastern flank of the jarrah forests, which region, from its position, is unlikely to be afforded railway facilities for a long time to come. The large area of white gum country apart from the above is being rapidly converted into wheat fields.

MALLET, SPOTTED, AND FLUTED GUMS.

These three timbers are of no commercial value, but the bark of the mallet is being collected in considerable quantities for tanning purposes along the Great Southern

Railway, between Beverley and Mount Barker, and a bark-grinding mill is working successfully at Pingelly. The bark of the spotted gum in the same district yields by analysis qualities about equal to those of mallet. Analyses of these barks, as well as of the fluted gum (supplied by Mr. S. S. Dougall, F.I.C.), are attached. (See Appendix B.)

FORESTS OF THE EASTERN GOLDFIELDS.

The Commission have made inquiries and taken evidence as to the supplies of timber on the Eastern and Murchison Goldfields. The Eastern Goldfields have many extensive belts of timber, from which the mines have been supplied at reasonable prices. From Menzies South there is still a large supply of firewood timber available; but further North, and also on the Murchison fields, practically the only timber growing is the mulga, which is of small dimensions, and very scattered.

The only centre on the Eastern Goldfields which is completely denuded of timber is the Hannan's Belt, comprising all the mines in and around Kalgoorlie and Boulder, the whole area within carting distance having been exhausted. All the firewood used in this district is cut on lands outside the reserved timber areas surrounding each goldfield, and is supplied by three companies, each having tramways totalling 80 miles, connecting with the Government railways.

Regulations for the construction and working of these timber tramways are provided for in "The Land Act Amendment Act, 1902," by which (though no leases of timber country are granted) the tramway proprietors practically control the cutting of all timber within two miles of their existing lines or of any extensions or deviations.

These lines, which are of the same gauge as the Government railways, viz., 3ft. 6in., are constructed very cheaply (second-hand rails, and in many instances sleepers which have been taken up from the Government railways being used in the construction), averaging about £800 per mile completed, including rails and fastenings.

A local board, known as the Timber Tramways Application Board, acts in an advisory capacity to the department when applications are received for permission to lay lines; but as at present constituted it does not appear to give entire satisfaction. Perhaps it would give better results if it could be made more representative of all interests and invested with greater powers.

LIFE OF SUPPLIES.

The weight of evidence taken is to the effect that within the scope of the existing, and applied for, tramways, there is a sufficient firewood supply for the probable requirements of the next eight years. Further increases and extensions of tramways would double the supply.

The present consumption of firewood on the Eastern Goldfields is at the rate of about 550,000 tons per annum. Of this the Hannan's belt alone takes 375,600 tons. The general price per ton is 13s., delivered on the mines, which is considerably less than the prices formerly ruling. Most of the other mines outside the Hannan's belt are supplied from sidings on the Government line, or from local gazetted reserves attached to each mining centre.

The supply of round mining timber is drawn principally from the sidings on the railway between Kellerberrin and Coolgardie, although a certain quantity is obtained from the tramway companies, the principal round timber that is used being salmon gum.

Jarrah forms the larger portion of the sawn timber that is being used on the mines, although a limited quantity of wandoo is also used by some of the mines, while Oregon pine is utilised to a very large extent for surface constructional work.

FORESTS OF THE MURCHISON GOLDFIELDS.

There is a consensus of opinion among all interested that, within two years, the demand for firewood will have exhausted these forests within ten miles of the railway line on either side, and as the cost of cartage for a greater distance would be prohibitive, the question must then arise: Whence is the supply of fuel to be procured? From the more distant forests by tramlines, or coal from Geraldton? Whatever may prove upon inquiry to be the best source of fuel supply for these centres, no time should be lost in rendering it available, in the interests of forest conservation as well as of the mining industry. The comparative value of coal and wood as at present available for fuel purposes on the mines will be found in Appendix C.

WASTE OF FIREWOOD.

Specifications for firewood supplies provide that the wood shall be 5ft. long, with a diameter of not less than 3in. at the small end; pieces to be fairly straight for stacking, contractors being paid by measurement. This means that not more than 70 per cent. of the available firewood is utilised, the remaining butts and limbs being left as waste.

In the interests of economy and the husbanding of supplies, a regulation should immediately be promulgated insisting on all wood being felled close to the ground. It was apparent to the Commission that in many instances the best part of the tree was left standing, to be destroyed by fire. The cost of installing weighing machines at the main centres, viz., Cue, Day Dawn, Nannine, Lennonville, and Mount Magnet, would considerably increase the amount of fuel obtainable per acre.

The management of the Great Fingall Mine, acting on the suggestion of the Commission, have already purchased one 30-ton weighbridge (for bogey trucks), and two smaller machines, to determine their consumption, and at the expiration of the present contract intend to amend their specifications as to size and length, and to purchase by weight instead of measurement, which is the system adopted by large firewood contractors on the Eastern Goldfields.

PAST CONSUMPTION.

3. What are the areas of cut-over jarrah and karri forests respectively?
Of jarrah, about 530,000 acres; of karri, about 150,000 acres.

PRESENT CONSUMPTION.

4. At what rate are the forests being depleted?

Jarrah at the rate of about 60,000 acres per annum. Karri: Present leases having been practically cut over, no more can be cut pending the opening of new forests.

ALLEGED WASTE.

5. Are the reports of the enormous waste accurate? If so, what steps are necessary to prevent the same?

This question was to some extent dealt with in the progress report. An exhaustive test was subsequently made, however, to ascertain the facts with regard to the comparative waste involved in the two systems of timber-cutting; namely, milling

and hewing, the result being that from a number of selected logs from virgin forest, it was found that the hewing process yielded a percentage of 57.12 of marketable timber, against 72.73 per cent. by the milling process, or a loss in hewing of 15.61 per cent. (See Appendix A.) This test was carried out with the fullest opportunity for the representatives of each method to obtain the best possible results, the Mornington Mill being efficiently equipped with modern machinery and appliances, while the hewers were represented by experienced axemen of their own selection. The result definitely proved that sleeper-hewing in high-class virgin forest involves enormous loss to the State (nearly one-fourth more marketable timber being obtained by milling than by hewing).

Exact evidence of the quantity of timber on a given area of virgin forest was also secured at this trial by the following method:—A block of 16 acres of forest was first surveyed; representatives of the millers and hewers respectively were then chosen, who drew lots for the first pick, after which a tree was selected in turn to the number of ten each; these were cut, carried, and dealt with as shown in Appendix A; the remainder of the milling logs standing upon the said 16 acres were cut, and yielded 88 trees, producing 169 loads, which, added to the produce of the 20 trees already dealt with, made the total from the 16 acres 206 loads of marketable timber, equal to 12.87 loads per acre.

Another fact of considerable importance, as furnished by this trial, is that the straightness of grain in sleepers demanded by the Maintenance branch of the Railway Department, and supposed to be obtainable only in the hewn sleeper, can be just as well secured by the milling process, provided the log is subject to inspection, as well as the resulting sleepers. The quantity of hewn sleepers cut from this class of tree for local purposes is small, however, compared with the quantity exported. It is therefore in the interests of the State that no jarrah trees suitable for milling purposes should be converted into hewn sleepers, provided that they are reasonably accessible to log-haulers.

As indicated in a previous report, it is clear that the great source of waste at the mill is when distance from the metropolitan market makes scantling a waste product. Some attempts, however, are being made to market this class of timber outside the State.

Your Commission is of opinion that in the interests of the State it would be a wise policy to discourage any increase in the rate of timber cutting till the consumption of scantling is fairly apace with the export of the larger sizes.

State acquiescence in the destruction of good timber only because the export trade demands it, is a crime against coming generations; and any attempts to increase the export in the interest of foreign companies, or with the object of inducing more men to join in timber getting at the expense of posterity, need wise resistance.

SOFTWOOD SYLVICULTURE.

6. What steps, if any, should be taken, and in what locality, to plant softwoods in the State?

The great success achieved in the planting of the maritime pine in the drifting sand dunes along the shores of the Bay of Biscay, as described in the report of the Victorian Forestry Commission, is instructive in this connection. The report is as follows:—

For several hundred miles along the West coast, but especially between the Gironde and the Adour, there is a tract of country consisting of barren dunes and ridges of sand formed by the high sea winds which sweep over that region. The encroachment of these sands advancing steadily inland, and in their course overwhelming villages, farms, and roads, became so great a public danger that, towards the end of the last century, strenuous endeavours were made to arrest their progress. Various plans were

tried, but the most successful were those adopted in 1789 by M. Bremontier, a civil engineer, who built palisades along the dunes and then, on the landward side of these protective barriers, planted the seed of the maritime pine with a mixture of broom, gorse, and goubet or marram grass, the sowing being continued in successive belts until the whole width of drift sand was gradually brought under cover. The work thus begun was steadily pursued for many years, until to-day a great part of the dunes and Landes, which embrace an area of over 220,000 acres, is covered with valuable pine forests. They yield a handsome return on the original expenditure, furnishing timber, resin, turpentine, and fuel in abundance, while the more open tracts afford good pasture for cattle.

This experience, added to our own, would seem to justify the belief that good results should be obtained by planting softwoods in suitable situations on the coast country between Mandurah and Albany.

The Commission is, however, of opinion that experiments in this direction should be undertaken only by a staff well qualified to carry out both planting and maintenance.

SECOND COMMISSION.

The evidence attached hereto supplies much information on the questions raised in this second reference to the Commission, all of which has strengthened the opinion of the Commission as to the utter impossibility of making adequate provision for conserving the forest interests until they shall have been placed under the administration of an Inspector General qualified by experience and scientific training, and aided by a board qualified by a knowledge of local conditions.

Realising, however, a possible delay in obtaining an officer qualified to fill the important position of Inspector General, the Commission is of opinion that no time should be lost in securing the legislation necessary to put the administration under the effective control of a board as suggested. Such a board would find ample occupation in establishing some degree of order out of the present destructive chaos, preparatory to the appointment of an Inspector General.

The task of inaugurating a system of forest conservation in this State (such as is recognised as necessary from long experience elsewhere) is one of great magnitude, in consequence of the timber industry having been permitted to grow into its present dimensions uncontrolled by effective administration. This neglect of an important industry has been the rule, apparently, at some stage or other, in the history of most countries. Many have, however, after long years of assiduous attention to conservation, recovered much lost ground, the highest existing example of which is found in the communal management of Sihlwald, in Switzerland, as:—

With an area of only 2,400 acres, this forest, in the year 1889, gave a return of over £1 13s. per acre, or £4,000 for the whole property. Its working is so regulated that areas of equal productive capacity are covered by stocks of every age, from the seedling to the matured tree. The age gradations, it is said, are so regular that in the course of an hour's walk one may pass from an area just cut over, through compartments of steadily advancing age and growth, till the trees which have attained the full age limit of 90 years are reached. The forest is managed under different plans of working, and while great care is taken to secure a large annual yield, it is not obtained at the expense of the permanent productiveness of the forest, the precautions to ensure regular regeneration being studiously observed. While the conditions of soil and moisture are favourable, it would not be easy to account for the exceptional productiveness of the Sihlwald, but for the fact that the land has been continuously under forest cover for over 1,000 years. Hence it has that great depth of alluvium and rich vegetable mould which can never be furnished by denuded or partly denuded lands covered intermittently with forest, but which, when existent and combined with suitable climatic conditions, produces the finest tree growth.

All countries seem now to realise the importance of stopping the reckless waste of the past and making provision for the future. The responsibility of making provision for the reforestation of the 530,000 acres of cut-over jarrah country is important and urgent; the longer it is delayed the more difficult the task.

A great natural advantage is possessed by the jarrah over almost all forest trees, in that fire, the terror of the conservator elsewhere, causes but trifling injury to a

forest, provided fallen limbs and logs are kept away from the trunks of the standing trees. An undergrowth of scrub may send flames high up the trunk of the jarrah; but the non-inflammable character of its bark preserves the tree from harm.

It may be safely said that the devastation we so often read of as occurring to pine forests could never happen in a jarrah forest. It might even be fairly argued that, given a staff to keep limbs and logs removed from the butts of the standing trees, an Inspector General might with advantage occasionally give fire free play through his forest of jarrah. Nevertheless, much harm occurs when a fire passes through a cut-out jarrah forest. The masses of fallen logs and limbs create a furnace destructive alike to young trees and to seed in the ground.

In most countries the forest lands have had two distinct bands of enemies: First, the timber trader, whose only aim is to get all he can out of the forest, heedless of its future; the second enemy is the agriculturist, who is interested in the uprooting of the forest for the sake of the rich soil beneath. It is not surprising, therefore, that under the united strength of these two influences, the interests of posterity in timber supplies have been so long ignored in many lands. Fortunately, however, our best jarrah lands have only the one class of enemy—the timber trader—the soil upon which the tree reaches its highest degree of perfection being unfitted for agricultural purposes. This encourages the hope that no effective hostility should be encountered by the future forest administrator in his work on behalf of jarrah. It is true that throughout the jarrah forests there are valleys containing rich pockets suitable for fruit culture, upon which the orchardist may cast covetous eyes, and which doubtless may in time be granted for this purpose; but the Commission is strongly of opinion that these lands should be dealt with only by the future forest administrator, and not by the Lands Department, it being manifestly important that the Forest Department should first establish its working plans, providing its lines of access to forests for all time, without any hindrance through the prior alienation of lands.

Much of the land on which karri grows is credited with great richness; and although something approaching two million loads of this timber have been cut, it is not a foregone conclusion that the future value of karri would justify the inclusion of all karri lands in State forests sacred to the exclusive production of that tree. Time may prove the value of the land to be greater for other purposes.

The same may be said with regard to blackbutt and red gum, but with greater confidence; for there is probably no doubt that the future demands for homes on the land will make blackbutt and red gum country too valuable to be conserved for the production of those woods.

The case of tuart, however, is different. The high value of that timber, the proximity of its habitat to transport facilities by land or sea, justify a vigorous conservation and early steps in replanting.

EXPERIMENTS.

Your Commission recommends the immediate initiation of an experimental station adjoining the railway in the vicinity of Chidlow's Well, by fencing an area of 640 acres of the best jarrah country, to be placed in charge of a resident officer instructed to apply thereto the first principles of forest conservation, viz.:—

1. Protection from depredation;
2. Protection from fire of desirable trees;
3. Destruction of undesirable growth;
4. Training saplings.

This situation offers the advantage of having a certain market for waste as firewood, or for charcoal-burning; therefore a considerable portion of the current expenses would be recouped, while the regeneration of the forest would soon become an interesting object lesson under the eye of the general public, which should prove of educational value and a test unit for forestry records.

The far inland forests, from which the goldfields draw their supplies of fuel and mining timber, offer a serious problem in silviculture, which needs experiment and time to solve. The dry climate of the interior produces a wood of high calorific value. This fuel can therefore successfully compete against coal hauled from the coast; and it becomes especially important in the interests of the mining community, as well as those of the railways, that the regeneration of those forests should be secured if possible. As a general rule, the *eucalypti* have great regenerative capacity, as our farmers will sadly testify; but it seems that the forms of the genus found in our Eastern and Murchison goldfields are of a degenerating character. Whether this is due to natural race decadence or to unfavourable environment is not yet known.

This, however, is self-evident: from Kimberley to Coolgardie a heavy and lasting demand for supplies of mining timber and fuel is either urgent or impending. It follows that the interests of the State require that before resigning any of this trade to foreign suppliers, earnest endeavours should be made to test the practicability of supplying every industrial centre throughout the State with its own forest products. There is no definitely established reason why some of the hardier quick-growing eucalypti should not be found capable of forming forests in the broad region from Kimberley to Leonora. It is claimed, in some parts of the world, that experience proves that the planting of eucalyptus yields better financial results than the purchase of coal.

CONCLUSION.

In conclusion, your Commission desires to place on record the heightened impression effected by the evidence herewith of the importance of the task before the State in inaugurating a satisfactory forest administration. Great as the subject seemed at the opening of the Commission's work, every step in the inquiry brought fresh problems into view; for at whichever phase of forestry we, as a community, may look—whether it be at the export, or at the internal trade; at conservation or silviculture; at the interspersed, locked-up, cultivable land; at the future interests of mining, or at the present fettered enterprise of mill-owners outside the "Combine"—the same dark shadow of the Nemesis of neglect threatens. From this situation relief can only come by immediate legislation, through which measures, means, and men may be secured wherewith to cope vigorously and effectively with the vital interests of the vast potentialities which we inherit in our magnificent forests.

Attached hereto is further evidence taken.

We have the honour to be,

Your Excellency's most obedient servants,

CHARLES HARPER,
Chairman.

ROBERT HASTIE,
WILLIAM ATKINS,
NEWTON J. MOORE.

19th May, 1904.

REPORT OF EVIDENCE.

THURSDAY, 10TH SEPTEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.
Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald.

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(At Cue.)

Mr. James Chesson, sworn and examined.

To the Chairman: I am a mineowner, resident for nine years at Cue. I came here as a prospector, and have a good knowledge of the bush around Cue. Mulga is the principal timber; and though gum trees are to be found at Milly's Soak, this is, so far as I know, the only locality in which they occur. I 10 am the owner of Cue I. Mine. We get our firewood supply from Stake Well, 34 miles along railway towards Nannine, carting it in six miles to Stake Well. We take delivery at Stake Well, being supplied by Irvine and Douglas, firewood contractors, Nannine. We are paying 19s. on trucks per cord, freight 5s., carting from station to mine 3s., and 1s. for stacking; a total of 28s. per cord stacked. This is about the average price. Most of the other mines get their supplies from various sidings to the north of Cue. 15 The supply is very limited, and the price must increase. I have not noticed what would be the average per acre. In the best patches, an acre would yield three cords; but on hundreds of acres there is not any timber. I know the surrounding country, and feel sure there is no hope of getting a permanent supply here if a light railway was put down. The supply is exhausted around Cue for 16 miles north, and over 25 miles east and west. The whole of the timber in that area has been carted into the railway. We use 20 300 cords per month. The consumption will increase. We have 20 heads of stamps, four winding engines, and a cyanide plant with a capacity of 80 tons per day. We use for mining timbers morrell and sawn jarrah. Morrell, from Mullewa, costs at Mullewa from 20s. to 25s. (6in. diameter) per 100 running feet. We use sawn jarrah principally, 8 x 2 and 7 x 1½. We do not use much scantling. We pay 78s. per load on trucks, Perth, and 55s. 3d. freight to Cue; then 8s. 9d. per load for cartage to 25 mine, about three-quarters of a mile. At the present time cost on truck, Perth, is 12s. per load—cheaper than we paid previously. We get the timber from Millars'; but the freight has gone up from 25s. 10d. to 31s. 7d. per ton, or about 9s. per load; so that at the present time we can really get timber 3s. per load cheaper than previously. The freight from Mullewa has gone up 2s. 9d. per ton. We obtain our supply from Mr. Cream, of Mullewa. To a limited extent the extra freight has affected some of the 30 mines. The price of firewood has not fluctuated this last two years, but was higher five years ago than it is now. I consider that within 12 months the price must go up. The reason for its not having gone up is on account of the new railway facilities. On timber country which has been cut over I have not noticed any new growth. Suckers are growing from gum trees at Milly's Soak. This area extends five miles by one mile. I think we shall have to depend on the coast for our future supply of firewood. We cannot 35 obtain any suitable mining timber within 100 miles of Cue. I do not know of any soil which would be suitable for tree-planting. Each cutter pays a license fee of a shilling per month, collected by the police. A man gets about one cord per day, for which he receives about 9s. Chaff costs £10 per ton wholesale, oats 4s. 5d. per bushel, bran 2s. per bushel, carting per cord for six miles 9s., loading 1s. The carting would be considerably reduced in proportion to the shorter distance. I can see no prospect of conserving 40 any timber. The only relief which we expect is from a reduction in freight on mining timber. We use of mining timber 20 loads per month in the round, and about 12 loads of sawn timber. We pay 2s. 6d. per running foot for 46-foot piles on trucks as from Perth.

(The witness retired.)

Mr. Edward Clarkson, examined.

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To the Chairman: I am a contractor and general dealer, residing at Cue. I have been on these fields for eight years, and have several times travelled all over the bush to Lawlers and Leonora. I have been a few miles to the north of Nannine. I have supplied mines at Lawlers, Leonora, Mount Morgans, Cue, Day Dawn, and Lennonville. I have employed 200 horses carting wood. There is a fair patch of firewood 25 miles E.N.E. from here, which would yield at least 30,000 cords if a railway was constructed 50 to this point (indicated) within five miles of the line, and would average two cords per acre. If the line were then laid in the direction of Lawlers for another 30 miles, it would strike a locality known as the

22-Mile Thicket. This extends from Woodley's No. 1 Well on the west for 22 miles east. This patch is at least 22 miles east and west and eight miles north and south, and would yield at least six cords (all mulga). It is by the road 25 miles from the new find at Black Range, and is the only patch that I think it would pay to put a line into. A lot of firewood might be procured near Mullewa if freights were reduced, otherwise people will have to burn coal within two years. The price of wood has been gradually falling for the last eight years. At the beginning of that period I received 36s. per cord, whereas at the present time timber is being delivered at 24s. per cord, a price which I do not consider can be profitable. The price must go up. I know of no locality other than Milly's Soak which carries gum. I should say there would be about eight square miles of gum country at that place. The soil at Milly's Soak is of limestone formation and fairly hard. Water is procurable at eight feet. I am sure that trees would not grow in this country. The suckers are shooting from the stumps. This is the only patch of gum country in the district. Mulga is of very slow growth. I have noticed one patch particularly, and could not see any difference in the trees during the last eight years. Cutters' licenses have come down from 5s. to 1s. per month.

(The witness retired.)

The Commission adjourned.

THURSDAY AFTERNOON, 10TH SEPTEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.
Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald.

(At Cue.)

Mr. Robert Allen, sworn and examined.

To the Chairman: I am a contractor, residing in Cue. I have been in the same business in this district for nine years. I have a thorough knowledge of the firewood supply for 20 miles on either side of line and road from Yalgoo to Peak Hill. I am at present supplying the Great Fingall at the rate of 1,000 cords per month, also the Murchison Associated, the Emperor, the Kinsella, the East Fingall, the Strathmore, and other mines. Between the 9th January and the end of August I supplied 8,024 cords; this supply is being obtained from Jack's Well, 12 miles from Cue; and Allen's Siding, 22 miles from Day Dawn; and Stake Well, 37 miles from Day Dawn. I have paid the Railway Department freights as follows:—February £185 19s. 5d., March £97 11s. 8d., April £78 15s. 4d., May £13 16s. 8d., June £193 18s. 4d., July £241 4s. 4d., August £248 8s., and I have paid the Construction Branch £511 13s. 9d.—a total of £1,671 17s. 6d. I now employ about 90 men, 60 horses, and about 20 drays. We are carting in about seven miles to Jack's Well, about five miles to Allen's Well and about four miles to Stake Well. At the present price of firewood it would not pay to cart more than seven miles. There is 12 months' supply within that radius. The present bush does not average more than one cord to the acre at Allen's Siding and Jack's Well; but Stake Well would average nearly three cords. The men pay 1s. per month for licenses, collected by the Mines Department. The police visit the camps, and insist on seeing each man's license. There is a good supply of mulga some 30 miles from Magnet in the direction of Black Range, over an area of 11 miles by three miles. This would average five cords to the acre. I would suggest that if this be connected with Magnet by rail the mining timber should be cut out first. We could get stuff eight inches at the butt and 10 feet long. Eight miles in an easterly direction from Allen's Siding (28½ miles) there is at least 12 months' supply; to the east of Stake Well, extending from four to six miles, there is also a supply which I have been informed extends 12 miles back. I pay contract price, 10s., 9s. 6d., 9s. per cord for cutting. The demand for firewood is increasing. I do not consider that the mulga country will ever carry any new timber; but Gidgi seems to reproduce to a limited extent. I do not supply any other mining timber. I know the country between Nannine and Peak Hill. It is very poor firewood country, except that at 12 miles from Nannine, in the direction of Peak Hill, there is a good supply, say 12 months' supply for the whole field; and at 67 miles, on the same road, to about the 77-Mile, there is fair timber. Then around Mount Fraser (95 miles) there is a small supply. There is no timber within 12 or 14 miles of Peek Hill. I am satisfied that if a light inexpensive railway was put down for 10 miles in the first place from Jack's Well or Allen's Siding, the firewood could be supplied at its present price for the next five or six years, provided the line was extended at the rate of five miles per annum. I am prepared to lay the line if the Government supply the material, and I have the running for the first year.

(The witness retired.)

The Commission adjourned.

THURSDAY EVENING, 10TH SEPTEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.
Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald.

(At Cue.)

Mr. Robert Tyler, examined.

To the Chairman: I am the manager of the Murchison Associated and the East Fingall gold mines. I have resided for three years on the fields. The mines consume about 150 cords per month; and I expect to use during the next 12 months 3,500 cords. We have used on both mines about 80,000 super. feet of sawn timber—about two-thirds jarrah to one-third oregon. We use oregon for head 10 gear, and some down the shafts and in buildings. We buy jarrah from Ferguson, at 10s. 6d. to 12s. 6d., at Cookernup—mostly nine by two, assorted lengths. This was bought some nine months ago. I have bought timber from the Timber Corporation, Greenbushes, planks nine by two at 20s. for Day Dawn, and eight by eight at 22s. We paid 18s. 6d., super., at Geraldton, now reduced by Ferguson to 16s. We pay 29s. per cord for firewood supplied and stacked on the mine by Allen. I have paid 31s. per cord 15 when carted direct to mine from some 28 miles out west. I consider the firewood supply will be a very serious question within the next 12 months. With the exception of the last consignment from Greenbushes I have been paying less for oregon than for jarrah. I have been quoted for jarrah by Millars' at a higher price delivered at Day Dawn than oregon costs.

(The witness retired.)

Mr. Uriah Dudley, examined.

To the Chairman: I am manager of the Emperor Goldmines, Limited, and of Field's Reward. I am President of the Murchison District Chamber of Mines. On the properties in which I am interested we expect to consume 5,000 cords of firewood during the next 12 months. The Emperor mine is at Day Dawn. We are drawing part of our present supplies from the Nannine railway line and part from an area 16 miles south-east of Day Dawn, the latter being carted. We pay 28s. 6d. delivered and stacked on mine. We use about 50,000 running feet of mine timber (round, 6in. diameter), obtained from Mullewa, costing about 6½d. per running foot. Of sawn jarrah, 8 x 2, 9 x 2, 3 x 2, 4 x 3, we are using 4,500 feet super., obtained from local timber yard, Geraldton, costing about 28s. per 100 delivered (special order). This is dearer than what we bought previously. The whole of the firewood between Yowergabbie and 30 Jack's Well has been cut out for a distance of 10 to 20 miles on either side of the line. I am of opinion that the price of firewood will be considerably higher during the next 12 months. I consider that if the Government were to lay a light line in a south-easterly direction from Cue, a fairly good supply would be obtained. The firewood commences about 40 miles from the railway line. No mining timber, except in very short lengths, could be obtained in this direction. The rest of the timber is mulga. From an economic point of view I do not consider it would be advisable to do any planting for fuel, especially in view of quote made by the Adelaide S.S. Co., some six months ago, to supply coal at £4 5s. per ton in large quantities, delivered. So far as I am aware, no comparative tests have been made between firewood and coal. There is a possibility that oil will, in many instances, be substituted for firewood. The nearest supply of mining timber that I know of is at Mullewa.

Mr. James, Manager of the Murchison Associated G.M., confirmed Mr. Tyler's evidence.

Mr. Abraham Sheard, examined.

To the Chairman: I am accountant to the Great Fingall. I have had the following return prepared of the consumption of both firewood and mining timber, showing comparative prices of jarrah and oregon and the cost of wood and coal. I beg to submit the return for the information of the Commission.

THE GREAT FINGALL CONSOLIDATED, LIMITED.
JARRAH USED IN THE MINE.
From 1st January to 30th June, 1903.

Used for.	Dimensions.	Quantity.
Shaft-bearing sets }	12 x 14	4,200 super.
Engine beds }	12 x 12	264 "
Do. do. }	10 x 10	730 "
Surface heavy framing }	9 x 6	36,791 "
Shaft timber }	12 x 6	264 "
Surface heavy framing }	6 x 4	1,264 "
General use }	6 x 3	1,959 "
Do. }	8 x 2	15,492 "
Shaft timber }	4 x 2	250 "
General use }	2 x 2	1,162 "
Shaft timber }		64,376 super.

Day Dawn, W.A., 10th September, 1903.

THE GREAT FINGALL CONSOLIDATED, LIMITED.
ROUND MINING TIMBER.

Source of Supply.	Sizes.	Price.	Per	Railway Freight per ton.
Mullewa }	4in. diameter, small end ...	15s.	100 lin. feet	15s. 8d., 20ft. minimum length
	6in. " " " "	20s.	" "	" " " "
	14in. " " " "	50s.	" "	" 14ft. " "
Three Springs }	9in. " " " "	30s.	" "	23s. 5d.
	10in. " " " "		" "	
	11in. " " " "	9d.	per foot	"
	12in. " " " "			

Day Dawn, 10th September, 1903.

THE GREAT FINGALL CONSOLIDATED, LIMITED.

WOOD AND COAL.

Coal—Newcastle.

	Per ton.
1902—515 tons F.O.R. Geraldton	£ s. d.
Railway freight	1 14 0
	1 5 9
	£2 19 9

N.B.—22nd January, 1902: Price on board Geraldton, 25s. per ton.
1 cord of firewood weighs 38 cwt.
1 ton of Newcastle coal equals 2½ tons of wood.

	£ s. d.
1 ton of coal costs	2 19 9
45 cwt. of wood at 25s. 6d. per 38 cwt. or 1 cord	1 10 3
In favour of wood	£1 9 7

Day Dawn, 10th September, 1903.

THE GREAT FINGALL CONSOLIDATED, LIMITED.
FIREWOOD.

Return of Deliveries made to above Company since 1st July, 1903.

Month ending.	Source of Supply.	Cords.	Total Cords.	Amount.	Amount.
				£ s. d.	£ s. d.
1902.					
31st July ...	Moyagee and Gamels	1,129	...	1,554 11 8	
31st August ...	Do.	1,358	...	1,869 13 9	
30th September ...	Do.	1,090	...	1,504 0 0	
31st October ...	Do.	461	...	640 17 6	
30th November ...	Do.	452	...	621 10 0	
31st December ...	Do.	751	...	1,032 12 6	
			5,241		7,223 5 5
1903.					
31st January ...	Nannine Line	950	...	1,308 18 9	
28th February ...	Do.	868	...	1,082 9 10	
31st March ...	Do.	767	...	930 14 1	
30th April ...	Do.	632	...	764 3 3	
31st May ...	Do.	849	...	1,030 11 3	
30th June ...	Do.	1,120	...	1,359 14 1	
			5,186		6,476 11 3
			10,427		13,699 16 8
31st July ...	Do.	1,128	...	1,390 2 11	
31st August ...	Do.	1,027	...	1,241 7 2	
			2,155		2,631 10 1
			£12,582		£16,331 6 9

Day Dawn, 8th September, 1903.

THE GREAT FINGALL CONSOLIDATED, LIMITED.

TIMBER.

Comparison between Jarrah and Oregon.

Six months consumption.	Jarrah.				Oregon.			
Super. feet.	@	Invoice, Perth.	Railage from Perth.	Total.	@	Invoice, Geraldton.	Railage from Geraldton.	Total.
	s.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.
44,000	14	308 0 0	...	...	same quantity.	...	2 11 5	...
19,000	13	123 10 0	1 11 6	...				
1,000	12	6 0 0	...	...		
64,000		437 10 0	288 10 0	726 0 0	15	480 0 0	215 0 0	695 0 0
Add: Extra cost handling and working jarrah instead of oregon (9d. per cubic ft., £200)				40 0 0				
20 % of same				766 0 0				695 0 0

The jarrah @ 350 super. feet per ton 183 tons.
The oregon @ 770 super. feet per ton 34 tons.

Day Dawn, W.A., 10th September, 1903.

Mr. Edward Lushington Lloyd, examined.

To the Chairman: I am manager of the Light of Asia gold mine, situated one mile north of Cue, and have been resident on this field since 1892. We use 2,000 cords per year, and about 12,000 feet of round timber, approximately 6,000 feet sawn, principally jarrah. We pay for firewood 26s. per cord delivered, and 1s. for stacking; 15s. per hundred for jarrah at Geraldton, 8 x 2; round timber, from 12s. 6d. to 24s. per 100 running, at Mullewa; average size, seven inches diameter. Within 30 or 40 miles of Cue the firewood supply is very limited—patchy; and even by putting down a line 30 or 40 miles out towards Lawlers, I do not consider that more than three years' supply would be obtained. The best of the firewood forest has, in my opinion, been cut out within 15 miles of the line; but I consider there would be 10 available between here and Mullewa any quantity of timber if the railway freights were reduced. At the present time some of the best mining timber on the Midland is being destroyed by ringbarking; and the sooner this is put a stop to the better it will be for the country. The only alternative means of reducing the cost of mining would be to provide proper facilities for handling coal at Geraldton. I agree with Mr. Allen that the best patch between Nannine and Peak Hill is that in the vicinity of Minderoo.

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(The witness retired.)

Mr. Alfred Pemberthy, examined.

To the Chairman: I am manager of the Cue Victory gold mine, and reside at Cue. We use about 1,000 cords per year, costing 25s. delivered, and 6,000 feet (running) obtained from Mullewa. Firewood is carted direct to the mine from 14 miles east. I confirm Mr. Lloyd's evidence.

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(The witness retired.)

The Commission adjourned.

FRIDAY AFTERNOON, 11TH SEPTEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.

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Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald.

(AT NANNINE.)

Mr. Alfred Walker Morgan, examined.

To the Chairman: I am a Government contract surveyor. My district extends from Magnet to Peak Hill. I do work for the Lands and the Mines Departments, and have a good knowledge of the 30 country in the neighbourhood of the various gold centres. Around Magnet I am not acquainted with any timber country. The timber between Magnet and Cue is practically cut out. There is fair bush in patches in the neighbourhood of Stake Well; but that is being rapidly cut out. I have had to send there for timber for survey pegs. Between Stake Well and Nannine the timber is practically cut out. In the neighbourhood of Nannine, about four miles east, there is a gum thicket of, I should say, about 2,500 35 acres, growing on a limestone formation. The timber has been cut, and young shoots and trees are springing up, making very rapid growth. They will, if not protected, be cut very soon. The same remark applies to The Gap, about eight miles north of Nannine—just a few acres. The 2,500-acre patch was cut out some four years ago. The gum is restricted to the limestone formation; and water is, as a rule, found at from five feet to 20 feet below the surface. Going north from Nannine in the direction of 40 Peak Hill some 22 miles, one comes to Meekatharra, where fair small belts of mulga are to be found. Some 30 miles in the same direction (towards Meekatharra) one begins to find the red mulga, known locally as "minirichee." The trees here attain a maximum diameter of 18 inches and a maximum height in the gullies of 20 feet. This timber is found in nearly all watercourses from here to as far north as the Gascoyne. I have indicated on Plan 3 M the locality of the various patches of gum timber. At Abbotts 45 the mulga is cut out within a radius of 12 miles. On the range of hills between the Ord and Murchison there is a fair supply of mulga. This range crosses the telegraph line at about 60 to 65 miles, extending for a few miles east of the telegraph line. Between the Murchison Crossing and Peak Hill good mulga is to be found in the gullies of the Robinson Range. The Peak Hill mine, which is drawing a supply from this neighbourhood, does not completely exhaust the forest, but insists on a high standard of firewood; 50 and firewood of a class similar to that used at Cue is rejected by this company. I consider that the wood should be cut under Government supervision, to avoid waste. At the present time a drive through the bush shows anyone that butts are left 18 inches and more in height; and this is the best and most solid portion of the tree. I do not know of any extensive tract of firewood country in my district, with the exception of the patches of gum indicated on the plan. The best soil in this district is found at the foot 55 of the Diorite Ranges. I would recommend that a forest reserve should be declared around "The Gap" and four miles east of Nannine, in order that the young timber may have a chance to mature.

(The witness retired.)

The Commission adjourned.

SATURDAY, 12TH SEPTEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.

Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald.

(AT NANNINE.)

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Mr. Charles John Whillas, examined.

To the Chairman: I am mining engineer in charge of the Champion Mines, Queen of the Lake Mines (Nannine), Abbott's Mine (40-Mile), Star of the East Tumbulgun Mine (20 miles east). All these mines are situated in the Nannine district. At present we are using about 60 cords of wood per month (for the two Nannine mines). When running full time we shall use 250 per month. We obtain 10 our supply from Stake Well, through contractors, Irvine and Douglas, costing, delivered on the mine, 27s. per cord, although just recently I have paid 30s. for small lots. I consider that the price will not be higher during the next 12 months. I do not consider that the supply at Stake Well will last another six months, if the supply for all the other mines (South) be drawn from there. After 12 months the price of firewood must go up. We draw our supply of round mining timber from Mullewa, and the shaft 15 timber from the Combine. We pay for round morrell at Mullewa, five inches to seven inches, small end up to 24 feet, 18s. to 20s. per 100 running; and for eight inches and over, small end up to 24 feet, 25s. per 100 running. This runs about 900 running feet to the 12-ton truck, costing about 50s. per 100 feet running, at Nanning railway station, plus 7s. cartage to the mine. Mulga mining timber, which is procurable within 50 miles of Nannine, is unsuitable, being too small, and the lengths too short. This 20 costs about 6d. per running foot on the mine. For jarrah I pay at the present time 13s. per 100 super at Perth, 10s. freight, and 1s. cartage, making 24s. per 100 super on the mine. This is from 3s. to 4s. less per 100 super than what I have paid before. I estimate that we shall use, during the next 12 months, at least 50 loads of jarrah, and the same amount of round timber. Oregon is quoted by two firms at 16s. per 100 super on trucks at Geraldton. This costs, to land on the mine, 27s. per 100 super, and it is used 25 only for surface structures. I am not aware whether there is any reduction made by the Railway Department when large consignments of Oregon are conveyed. For underground work ("shaft") jarrah is much superior to Oregon. I have several shafts made with Oregon, and the timber becomes quite soft and pulpy with the water. In places I have had to substitute new timber. The evidence I have given so far refers to the two mines in Nannine. At Abbott's we pay 32s. 6d. per cord. There is not a stick 30 within 14 miles of the mine, and I expect to pay 35s. in the immediate future. We use 120 cords per month. We pay 6d. per foot running for a poor class of mining timber (mulga), which is obtained about 30 or 40 miles from the mine. At the Star of the East we are paying 10s. per cord, the wood being about six miles from the mine. We use 150 cords per month. We have not used any round timber for some time. We use jarrah for shaft timber. I consider that the firewood country within 10 miles of the 35 railway to the north of Tuckanarra should be reserved for 10 miles in the neighbourhood of Tuckanarra and Nannine.

(The witness retired.)

Mr. John George Robinson, examined.

To the Chairman: I am owner of The Nannine Gold Mine, and have been on these fields 13 years. 40 I use about 1,000 cords of firewood per year, and pay 27s. 6d. per cord, delivered on the mine. I think the price of firewood must increase during the next 12 months. I use very little mining timber. What I do use I obtain from Mullewa, at the same price as that quoted by Mr. Whillas. I certainly think a reserve should be declared in this district in order that a supply may be ensured for the local mines around Nannine. To the east of the line, between Tuckanarra and Stake Well, there is a very fair belt of 45 firewood country, and that is the only place where it would pay to put in a light line. There is a belt of gum tree country like York gum about 90 miles north-east of Nannine. The timber commences about 12 miles south of Mount Russell and extends in a belt towards Lake Way, about 20 miles by one mile. I do not know whether this timber is being used by the Lake Way people. The future firewood supply is a very serious question.

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(The witness retired.)

Mr. John Irving, examined.

To the Chairman: I am a contractor at Nannine, where I have resided some nine years. I have been over most of the country within 20 or 30 miles of Nannine. I supply most of the mines here with wood, obtained principally from Stake Well. We are now cutting about five miles east of the line. The timber extends for some miles farther east. I have been back about 10 miles off the line. The timber is equally as good farther back. I consider that in the belt referred to we could get one cord per acre, all over. This is the nearest supply to the railway line that I know of. I think there are about 100 men wood-cutting at Stake Well and in that vicinity. In my opinion the wood-cutters will be out 10 miles in another six months. The belt seems to get wider the farther east we go. The nearest wood from Nannine is 13 miles out, and this is of an inferior quality. About 20 miles north-north-west of Nannine there is a good patch of mulga, about 10 miles square, around Combon Clay Pan, equally as good as that at Stake Well. It is very easy country to work, being very level. About three miles east from Nannine there is a patch of gum country which was cut over about six years ago. It is what we call York gum. The suckers from the stumps on this belt are four inches in diameter, and some of them 15 feet high. There are many young trees coming on. This patch is about five miles by two miles. These suckers appear to grow well when there is a good season, but make no growth during a dry one. Water is to be found at shallow depths, about eight feet. I have been to Peak Hill. People there have to go about 15 miles for firewood. There is a bit of gum country about 40 miles north, where mining timber is obtainable. I do not know the Ord River country. There is no extent of timber between here and Peak Hill.

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(The witness retired.)

The Commission adjourned.

MONDAY, 14TH SEPTEMBER, 1903.

Present:

Mr. R. HASTIE, M.L.A., in the Chair.
Mr. N. J. Moore. | Mr. W. V. Fitzgerald.

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(AT CUE.)

Mr. Samuel Allen, examined.

To the Chairman: I am a contractor at Lennonville, and have resided on these fields for the last nine years. I possess a good knowledge of the country between Mount Magnet and Peak Hill. From Nannine to Peak Hill the firewood belts are very scattered. The best belt of firewood that I know of lies about five miles on this side of Pindar Well, 35 miles from Magnet, starting some four miles from the line, to the north. I should say it would be quite three miles wide, extending some distance. This belt contains mulga suitable for mining. At the present time we are cutting 11 miles to the east of Lennonville, and get 27s. per cord stacked on the mine. I have been some two or three miles farther out, and the timber continues very fair, but it is scattered. Woodley's Soak is about 40 miles east of Magnet, and the good bush commences about two miles beyond it, and continues for about 20 miles in the direction of Lawlers. In this belt good mining timber can be obtained as well as firewood. Mulga is not so suitable for mining work as morrell. About 20 miles out from Magnet there is a large belt of firewood. I think that if a railway line were put down it should go in from Lennonville, and not farther south. I consider the patch is the best I have seen in the country. At Woodley's Soak one would get three times as much firewood out of a tree as one would at Stake Well. It is very level country. I consider that 300 cords of wood would be consumed per month at Lennonville (Kearney's), and 60 cords for the public battery. I am sure 1,000 cords per month would suffice for the whole district. The firewood is getting very scarce, and this involves very long cartage. The only mining between Cue and Lennonville is at Lake Austin, but I am not acquainted with the firewood supply in that neighbourhood.

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(The witness retired.)

Mr. Robert Hamilton Allen, examined.

To the Chairman: I am a teamster at Lennonville, where I have resided for three years, and I have a good knowledge of the country in this vicinity. The best timber that I know of lies to the east of the railway, some 30 or 40 miles in the direction of Lawlers. This belt of timber commences near Woodley's Soak. I have not been off the track, but should say it was 20 miles through. It is fair bush right from Lennonville to Woodley's Soak. I think 800 cords per month would supply Lennonville and Magnet. Perhaps 140 cords per month would be used at Lake Austin.

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The Commission adjourned.

(The witness retired.)

FRIDAY, 30TH OCTOBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.
Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald.

(AT PINGELLY.)

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Mr. George J. Smith, examined.

To the Chairman: I am a resident of Pingelly. The mallet timber is generally found on the top of the ranges. The bulk of this timber lies to the east and south-east of Pingelly. Not much will be found beyond 20 miles to the westward; but this timber can be found for 20 miles to the east of the Great Southern Railway. I have used mallet for timber rafters; and it has proved satisfactory, but not when used close to the ground. The white ants are destructive to mallet. Very little grass is found in the mallet country; but good grass is generally found at the foot of the ranges. Mallet grows up to three feet in diameter. If the bark were stripped from the trees, the country would be improved for grazing purposes. Mallet suckers do not grow to any extent, except on large stumps. The suckers and seedlings grow very quickly, but I have no record of their growth. Box poison is always associated with mallet. The small trees, as a rule, are sound, the larger ones being pipey.

(The witness retired.)

Mr. Oliver Greenwood, examined.

To the Chairman: I am engaged in obtaining and crushing mallet bark for tanning purposes. My firm has a plant erected at Pingelly, consisting of an eight-horse power engine and disintegrator, the capacity of which is about eight tons per day. We employ about 40 men for four months in the year on piece-work. We pay for the bark at the tree, carting it to the mill with our own teams. On an average it costs 10s. per ton to cart for eight miles. We shall soon have to go much farther to obtain bark. It takes on an average about 40 trees to produce one ton of bark, the trees averaging from nine inches to two feet in diameter. According to an analysis which we had made of the bark of the mallet, it produces from about 40 to 45 per cent. of tannin. This compares very favourably with the wattle bark of this State. The South Australian wattle bark, I believe, is sold on a basis of 32 per cent. of tannin. This is the best wattle known. We have been engaged in this business about 18 months, and are the pioneers of this industry. During this year another firm has taken up the business. During the past 18 months we have lost £200 in our business. About 700 tons of bark are required annually in Western Australia for tanning purposes. The mallet timber is very tough, and should be suitable for wheelwrights' purposes. I understand that in tanning equal proportions of wattle and mallet bark are used. The mallet trees are stripped of their bark for 20 feet from the ground. Probably there would be as much bark left on the tree as is taken off. If the trees were ringbarked in December, about three months later the bark would come off of its own accord; and I should think that the bark thus removed would be as valuable as the bark we get at the present time. The mallet seedlings appear to grow very quickly, especially after a bush fire.

(The witness retired.)

Mr. Francis Tuttle Wake, examined.

To the Chairman: I am in partnership with Mr. Greenwood. We have been engaged in the bark-crushing industry for about 18 months. I attend to the milling part of the business, and can indorse the evidence of Mr. Greenwood. During the last 12 months we have disposed of about 150 tons of bark. The whole of this quantity was supplied to two firms. We have endeavoured to open up a trade with English tanners; but so far have not been successful, owing, no doubt, to the English people being unable successfully to treat the bark. The contracts which we now have on hand will give us a margin of profit. During last year we forwarded about 80 tons of bark to Victoria; and we still have orders for 200 tons for Victoria, which shows that if the bark is properly treated it will give satisfactory results. We have four men working at the mill. The cost of haulage runs up to about 20 per cent.; that is to Perth. We pay 5s. per man per month for stripping licenses, which are obtained from the clerk of courts at York. At the present time the hills on which the mallet grows are being rapidly selected, and the selectors are ring-barking the mallet trees. In this way the bark is being wasted, and the supply will be depleted. I would suggest that, if possible, this class of country should be reserved from selection, especially where there is any extent of the mallet growing. Between Cuballing and Narrogin, about two miles, east of the railway line, there is an area of mallet country extending for about 10 miles, and varying from half a mile to two miles in width.

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(The witness retired.)

The Commission adjourned.

WEDNESDAY, 4TH NOVEMBER, 1903.

Present :

Mr. C. HARPER, M.L.A., Chairman.
Mr. W. Atkins, M.L.A. | Mr. W. V. Fitzgerald,
Mr. R. Hastie, M.L.A.

(AT PERTH.)

Mr. John Whitecross Lyall, sworn and examined.

1. By the Chairman: You are the owner of a mill at Werribee, on the Eastern Railway?—Yes.
2. What timber are you cutting?—Jarrah and wandoo.
3. In equal proportions?—I cannot say in what proportions; but we are now cutting more jarrah than wandoo.
4. Is there a pretty good supply of those timbers in that neighbourhood?—Decidedly the reverse. There is not a good supply of either.
5. Over what area have you been cutting?—Over four square miles of run which we leased, a reserve to the south of the line, and Crown lands to the north.
6. You have been paying a license fee for cutting?—A license fee on the Crown lands, and royalty on the reserve.
7. Can you give the Commission any idea of the number of loads per acre of wandoo?—No. That would be difficult; because the jarrah and wandoo are mixed. But my firm estimates that there is but a little more than a load per acre of either, taking the whole country.
8. Is there much more timber available outside that area of which you speak?—Not within payable distance.
9. Then you would have to remove your mill if you wished to continue cutting?—Yes.
10. Have you inspected the surrounding country with a view to moving your mill?—We have no idea of moving it to any other spot in that locality. We have inspected the country, and we do not consider that there is in it a belt of timber good enough to justify our putting down a mill.
11. You think, then, that there is no hope of carrying on the milling industry in that neighbourhood?—No. There is another mill about three miles from ours, at a place called Karrijine, farther east; and that cuts us off.
12. By embracing all the valuable timber?—Yes. There are small patches farther out; but nothing good enough to put a mill on.
13. Then you will have to close down?—Yes.
14. And you do not know of any other place in which your industry can be prosecuted?—Yes; but not in that locality.
15. Are you inclined to tell the Commission where you wish to continue, if such be your wish?—I do not mind telling the Commission. We have inspected one area near Collie; but I am afraid it is not available. Another is near Donnybrook. If we could secure either of those areas we should start work immediately, sending men down to make preparations.
16. Do you know of any locality where the cutting of wandoo can be carried on?—No.
17. Has your experience led you to believe that there is a special demand for wandoo?—Not a special demand. Wheelwrights use a certain but small quantity. Some mines prefer it to jarrah, and some are prejudiced against it; but at present we sell a fair quantity on the goldfields. Some mines specify wandoo for certain work, and will not have anything else so long as they can get it.
18. And you say those who refuse it are prejudiced against it. Is their objection due to mere prejudice, or have they tried the wood?—As far as I know, they are prejudiced against the wood because it is hard to work.
19. And why does not that objection weigh with those who do want it?—They consider that the superiority of the wood more than compensates for the extra labour.
20. So experience brings it into favour; and its hardness is the cause of the prejudice against it?—Yes.
21. If I rightly understand you, your object is to prosecute your trade in jarrah?—Yes.
22. How long have you been cutting at Werribee?—About three and a-half years.
23. Can you give a rough idea of the quantity of wandoo you sent away from your mill in that time?—I will consult my books and let you know the area cut over and the approximate quantity sent away.
24. By Mr. Atkins: How long will the timber last where you are now?—Not more than three months. It will not longer be payable. After that we shall have to put on extra teams.

25. We do not wish to know your private business; but have you any contracts which will extend beyond that time?—There is a contract with one of the largest mines at Kalgoorlie, the Golden Horseshoe.
26. For how long?—It is only an oral contract, but the company hold us responsible, and are willing to take the timber as long as we are willing to supply at the price.
27. It is a running contract?—Yes. At present they have a lot of work in hand; they are about to put in extra stampers, and there is a large order coming out. Then we have with the Peseverance mine a contract of a similar nature. They are large customers of ours. And there are one or two contracts with small timber merchants on the goldfields, who use our surplus stuff.
28. You have a going trade which you have to keep up. That is what is the matter?—Yes. If we stop, we shall lose it altogether.
29. And under the present conditions of the timber lease, you cannot go any farther after three months?—No.
30. By the Chairman: If you moved to Donnybrook or to Collie, could you keep those contracts going, having regard to the extra freight?—Yes; we could. I consider that the better class of timber there would more than compensate for the difference in freight, which would be about 9s. a load. I am certain that we could make a greater saving than that in the cutting.
31. Then those contracts of which you speak are for jarrah only?—For jarrah and wandoo.
32. But you say you cannot supply wandoo from Collie?—No; but according to the contract, the customers will take either jarrah or wandoo.
33. By Mr. Hastie: Could you get any fair-sized area of wandoo timber on the Eastern Railway?—No.
34. By the Chairman: As to the wandoo, have you a sale for all classes of it, or for any class in particular?—That is the trouble. There has always been a difficulty in getting rid of the small sizes.
35. What is it principally used for on the mines?—On some it is used for construction work. On the Great Boulder mine it is preferred for any heavy construction work such as vat stands, and for all their opening sets underground, at the plats where there is a great strain.
36. By Mr. Hastie: Does it resist the white ant?—Yes. That has been proved by the Government.
37. By Mr. Atkins: Do the mines use it for building timber?—One or two mines use it; but the contractors do not like it. It is too hard, and is heavier than jarrah.
38. By the Chairman: Is it not apt to warp?—No. In our experience, after stacking it at Kalgoorlie, it does not warp.
39. But you refer to large sizes?—No; to small sizes also. It stood better than jarrah.
40. By Mr. Fitzgerald: What is your daily output?—About seven loads.
41. How many men do you employ?—Twenty-two.
42. In what capacities?—We have six fallers and four teamsters; and the remainder are in the mills. These include the foreman blacksmith, and the loaders.
43. By the Chairman: What percentage of good timber do you get out of your logs?—We have not any records.
44. You have a general idea, I suppose?—We sell a large quantity of slabs; and taking that fact into consideration, we reckon on getting 65 per cent.
45. Then as it pays you to sell slabs, much timber is thus saved from the fire?—Yes.
46. What proportion, apart from sawdust, goes into the fire?—I should say about 35 per cent.
47. By Mr. Hastie: About the highest saving in the State?—We cannot prove the statement by figures; so it may be wrong. Last month we sent away about 80 tons of slabs, both jarrah and wandoo, to the mines.
48. I suppose you have a practically unlimited demand for slabs?—Yes. We have never accumulated any, and we cut all we can. In cutting wandoo we prefer to make slabs rather than scantling, because slabs are more saleable. Sometimes we have found the wandoo scantling accumulate on our hands, and it has proved troublesome to get rid of.
49. What is the freight on timber from Werribee to Kalgoorlie?—It is 22s. 7d. a ton.
50. By Mr. Atkins: That is about 34s. a load, is it not?—About 40s. a load.
51. By Mr. Hastie: It is usually sold by the ton?—The slabs are sold by the ton; not the sawn timber.
52. I suppose you think it would be a good idea to reduce greatly railway freights on timber sent to a big centre like Kalgoorlie? For a long time we have heard complaints about the high freights on timber and other products. Do you think the freight too high?—It seems to me not too high; because it is almost the lowest freight there is.
53. By the Chairman: Would your trade be affected by a reasonable reduction in the railway freight from your mill to Kalgoorlie?—I do not think so. I do not think there would be any more timber used. It would not give one man any advantage over another.
54. Would a small reduction (for it could be only a small one) pay you to haul farther, or encourage you to go on at Werribee?—No.
55. It would not help the trade in your locality?—No.

56. By *Mr. Atkins*: I suppose the trouble in your locality arises from the scarcity of timber?—That is just the trouble.

57. By *the Chairman*: How far south have you travelled in search of wandoo particularly? Are there any large supplies farther south of your mill?—No. We get into private property about three miles south.

58. Poison country?—Yes.

59. And is that ringed?—I do not know.

60. I was wondering whether, if there is timber in that direction, it would pay to put down a tram?—I do not think it would pay to put down a tram anywhere in the neighbourhood. We have inspected local belts of timber, and consider that it would not pay to put a tram line into any of them.

61. There is a good deal of wandoo on the track between Clackline and Newcastle. Have you looked over that?—No.

62. And there is a good deal to the west of the track. Do you think that any wandoo forest you have seen would pay to work alone, irrespective of jarrah?—No. It might pay for 12 or 18 months, or perhaps two years; but it would not afterwards be payable. So far as I am concerned, I would not again cut wandoo only.

63. Wandoo clogs the saw, and prevents its cutting freely?—It does.

64. By *Mr. Atkins*: What do you want to do? You said you would like to tell the Commission of the position you were in, so that they might understand how you were suffering disabilities through the present timber regulations?—We want to shift our mill, and we want an area to put it on, and some security of tenure. If we shift the mill now, we are liable to be interfered with by anybody who comes along. The sleeper-hewers may come in, or another man may put a mill alongside of ours, and that would not be good enough.

65. By *the Chairman*: Have you read the first progress report of the Commission?—Yes.

66. You saw our recommendation as to the Flora and Fauna Reserve?—Yes.

67. If you had an exclusive right of cutting over an area proportioned to the capacity of your mill, would that give you a satisfactory outlet? That is a recommendation we made with a view to the better preservation of the timber in that reserve. The standard was raised to three feet, so as to have the country fit for cutting again within a man's lifetime, instead of adhering to the present practice, by cutting it right out and rendering it useless for a period equal, one might almost say, to the lifetime of a tree. Do you think such conditions would induce you to establish a mill on the Flora and Fauna Reserve?—We have not inspected that reserve.

68. By *Mr. Atkins*: Suppose the timber in that reserve to be as good as the other or better, would the conditions suit you?—We do not like the three-feet limit. Without inquiring more thoroughly into the matter, I cannot say whether we should be prepared to put down a mill under those conditions.

69. Suppose you put down a plant to enable you to hold, say, ten years' cutting. Before your lease terminated, a lot of the stuff which you left this year as being under three feet would come in again and be cut over?—I suppose some of it would.

70. The evidence shows that the increase is about half-an-inch per year. Take it at a quarter-inch. In 10 years 10 quarter-inches would be added; so much of that timber would be cut off, and still there would be more coming on. A 10, 12, or 15-year cutting would be available, instead of, as now, a 40 or 50-year. But that system is recommended only in the Flora and Fauna Reserve?—So I understand.

71. By *Mr. Hastie*: Are there any areas of Crown lands, other than the Flora and Fauna Reserve, which you might take up with a view to erecting a mill?—Yes.

72. In those cases the limit suggested is two feet six inches?—Yes.

73. Do you approve of the conditions on which the Commission recommended that land should be made available?—Yes; in proportion to the horse-power of the mill.

74. With a small royalty instead of rent?—Yes.

75. Do you think those conditions pretty fair?—Yes; but much depends on the amount of the royalty.

76. By *the Chairman*: But you do not object to the principle?—No; I quite approve of it.

77. By *Mr. Hastie*: The only objection you recollect to our recommendations pertaining to the Flora and Fauna Reserve is that regarding the three-feet minimum?—Yes.

78. If you cannot get fresh country you will be unable to enter into any new contracts?—Yes; or to carry out our existing contracts.

(*The witness retired.*)

The Commission adjourned.

FRIDAY, 13TH NOVEMBER, 1903.

Present:

Mr. CHARLES HARPER, M.L.A., Chairman.

Mr. W. Atkins, M.L.A.

Mr. W. V. Fitzgerald.

Mr. R. Hastie, M.L.A.

Mr. N. J. Moore.

Mr. Philip Vivian Davies, sworn and examined.

79. By *the Chairman*: You are a son of Mr. M. C. Davies, of Karridale?—Yes.

80. For how long were you at Karridale?—Ten years.

81. During which you acquired experience of the business?—Yes.

82. Where have you been since?—For the last five years I have been travelling to and fro between India and Japan, in the timber trade, dealing with Western Australian timber only.

83. Jarrah and Karri?—Yes.

84. Where have you been delivering timber?—In Colombo, Southern India, Madras, Bombay, Calcutta, Singapore, Straits Settlements, Hong Kong, Shanghai, and Yokohama.

85. And in London or in any part of Europe?—No. I have been confined to the Eastern trade.

86. What class of timber have you been principally delivering?—Principally railway sleepers and timber for harbour works.

87. In the contracts you have been making, with what other timbers have you had to compete?—Teak, salwood, pyandku, Singapore hardwood, Borneo hardwoods, and Oregon.

88. The bulk of those are from the Indian Forestry Department?—All, with the exception of the Borneo and Singapore hardwoods, and the Oregon.

89. In what class of work do these compete?—In all railway works and harbour works.

90. Does the Oregon compete in those works?—Yes. In China and Japan it competes with Western Australian timbers for both railway sleepers and harbour works.

91. Such timber is creosoted?—In northern China it is not creosoted.

92. The timber has not so many enemies there?—No. There are no dry rot and white ants in Northern China.

93. How long is it since you were in Hong Kong?—About 18 months.

94. Have you heard of the reported destruction of some jarrah piles there, by the teredos?—Yes.

95. Was the wood supplied through your firm?—I think there were some piles sent up about 12 or 14 years ago; and some of them were eaten away. Both karri and jarrah were sent up; and there was some other timber there which looked very much like tallow wood from New South Wales. That was said to be jarrah; but of course it was not. I had a look at it.

96. You have seen the report that some timber put in there was eaten away in 18 months? That would not be the timber you refer to?—I do not think so.

97. Have you not seen the report?—No.

98. Did you make a careful inspection of this work, in which you say there were karri, jarrah, and tallow wood?—Yes. It was wharf work. I went underneath the wharf in a boat, and saw the timber.

99. What was the condition of the wood?—Some piles were quite eaten away. Three of them looked like tallow wood, and I think two others were karri. Most of the piles were of jarrah, and were not eaten away at all, but were in good sound condition. The wharf belonged to Jardine, Mathieson, & Co.

100. Has any report been made on those woods?—Not to my knowledge.

101. Have you inspected in the China seas any other work containing our timbers?—Yes. A bridge in Shanghai.

102. How long has that bridge been erected?—I think for more than 20 years. The decking is karri.

103. Is it over fresh or salt water?—I dare say the water is brackish; for it is within tidal influence.

104. Has the bridge stood satisfactorily?—Yes; it is in very good condition.

105. By *Mr. Atkins*: What is the understructure?—Borneo billian; and the decking is karri.

106. By *Mr. Davies*: Where do those piles you were speaking of perish? Between wind and water?—The heads of the tallow wood are right off.

107. By *Mr. Atkins*: Affected by the teredo, I suppose?—Yes.

108. By the *Chairman*: Have you seen much of billian?—Yes. It is used for bridges and railway sleepers.
109. Is the tree large?—Yes. It grows to a girth of about 12 or 14 feet.
110. You have not visited Borneo?—No.
111. Did you glean any information as to the quantity of billian in that country, and the likelihood of its competing against our timber?—Yes. We lost a large order, worth about £6,000 or £7,000, which was filled by Borneo timber.
112. By Mr. *Atkins*: Do you mean billian?—No. There are other Borneo timbers.
113. Is there a quantity of billian, or is it only scattered?—There is a quantity in the north-east of the island.
114. By the *Chairman*: In the mountains?—Yes. Most of the country is very hilly, right up to the coast.
115. By Mr. *Atkins*: Is there a large supply of billian, or is it scarce?—There is a fairly good supply; but it is not the principal timber.
116. How much of it is there?—I have not any idea.
117. By the *Chairman*: What other wood is there in Borneo?—Principally camphor wood.
118. Is that used for wharf work?—Yes; in Northern China.
119. What wood has been used at Port Arthur, and the port at the other side of the peninsula?—A lot of jarrah was sent there.
120. And karri also?—No. I do not think any karri was sent.
121. Did your firm supply the jarrah?—No. It was supplied by the Jarrahdale Company.
122. The works have now been erected some years?—No. I think the timber was sent there some two years ago.
123. What are your prospects of competing with Borneo wood in Europe?—I think the Borneo timbers can for many purposes be supplied much cheaper than ours.
124. Why?—Labour is cheaper; and the trees give a bigger percentage of good timber. There is less waste.
125. What about the haulage?—The haulage is much cheaper there than here. Much of it is done on the rivers, the logs being floated down.
126. What means are used of getting the logs to the water or railway?—About 70 or 80 miles of railway have been laid into the interior by the Government.
127. There is a line from port to port on the north-east coast: but there was a complaint that it did not tap the interior?—The railway goes from a place called Jesselton, inland.
128. How far from the coast?—I think at least 40 or 50 miles.
129. It goes into the timber ranges?—Yes.
130. How is the timber brought to rail or water?—In some places there are chutes—saplings laid on the ground; and the logs are skidded on them by hand or by buffaloes.
131. Are not elephants used?—No.
132. By Mr. *Hastie*: Is that timber widely scattered?—No. The forests are very thick. There is timber of about 14 or 15 different kinds.
133. By Mr. *Davies*: What class of mill is used there? Anything similar to ours?—No. The mills are much smaller.
134. By Mr. *Atkins*: Of those 14 or 15 kinds of timber, how many would be commercially useful in competition with hardwood?—The timbers range from billian, which is a very hard wood, to timber as soft as pine; and all are marketable. About five or six of the varieties are hardwoods.
135. Are they eucalypts?—No.
136. By the *Chairman*: Are the soft woods of the pine or cedar variety?—There are some cedar trees.
137. And what we call the pune?—Yes.
138. By Mr. *Hastie*: For what is billian used?—For sleepers, bridges, and wharves.
139. It resists white ants?—Yes.
140. By Mr. *Davies*: Does billian compete with jarrah in South Africa?—No; but the camphorwood and the malave, which is another hardwood, are used for sleepers in South Africa.
141. Are any of the Borneo timbers used in South Africa for mining purposes?—I think some have been used; but not to a large extent.
142. By Mr. *Atkins*: Do you know whence the South African mining timbers come?—Not from personal experience.
143. By the *Chairman*: Have you visited the forests of India and Burmah?—I have not been to Burmah. I have seen some of the Indian forests.
144. Is India likely, in the near or fairly near future, to supply itself with timber for railways or wharf works, or will it have to rely on Borneo or Australia?—To a certain extent it supplies itself; but it cannot get a large quantity of timber or a large number of sleepers in a short time.

145. The facilities for getting the timber are not sufficient?—The timber is scattered; but a great number of sleepers is now obtained, principally for maintenance purposes; and maintenance is a very big item in India.
146. Are there any prospects of the Indian Government laying down new railways in the immediate future?—Yes; they have made provision for very large extensions.
147. And for supplying the sleepers there will be keen competition among Borneo, this State, and the Eastern States?—Yes; and we have to compete against steel sleepers.
148. Do they compete effectually?—Yes. A new railway just built in Southern India has all the sleepers of steel.
149. How old is the oldest steel-sleepered railway?—Steel sleepers have not been long in use there; but the iron pot sleepers have been used for a great many years.
150. Is it not a fact that steel, when laid on the ground, corrodes more quickly than iron?—That largely depends on the ground and the climate.
151. And a great part of India, except the very arid part, is damp?—Yes.
152. And are steel sleepers being laid in the arid country?—In the moist climate of Southern India.
153. What is the comparative cost of the steel sleeper, the jarrah sleeper, and the Borneo billian sleeper, taking the standard weight of rail, and sleepers of proportionate size?—An 8ft. x 4½in., 6ft. 6in., or 6ft. jarrah sleeper, costs, delivered there, about 3s. 7d., and a Borneo sleeper about 2s. 3d.
154. By Mr. *Davies*: Sawn sleeper or hewn?—Either hand-sawn or steam-sawn.
155. By Mr. *Atkins*: What wood?—Camphor wood.
156. By Mr. *Davies*: And a billian sleeper?—About 2s. 9d.
157. By Mr. *Fitzgerald*: And salwood?—About the same. Sal or pyandku can be supplied at about 2s. 8d. The sal and pyandku are Indian.
158. By the *Chairman*: Is there no sal in Borneo?—No.
159. By Mr. *Atkins*: What is the price of the steel sleeper?—I am not certain. I think I can ascertain.
160. By the *Chairman*: For the lines laid with steel sleepers did any of you timber people tender, or was steel specified?—We tendered.
161. Steel or wood was optional?—Yes.
162. And do you know whether the steel people beat you in price per mile?—I think the decision rested with the consulting engineer in London.
163. You do not know whether he decided with respect to durability or to price?—No.
164. How long have iron sleepers been used in Southern India?—Iron pot sleepers were in use 20 or 30 years ago. Many have been replaced by wooden sleepers; but the line from Bombay to Calcutta has iron pot sleepers.
165. How long has that been down?—For 20 years.
166. And in those cases where the sleepers were replaced with wood, was that done because wood was cheaper, or because the pot sleepers were unsatisfactory?—I think one of the principal reasons was that the maintenance of pot sleepers is more expensive.
167. By Mr. *Moore*: Not so much give?—With pot sleepers you must use broken metal, and in some places the metal has to be conveyed a tremendous distance.
168. By the *Chairman*: What about the steel; would it not be necessary to have the same with steel?—No, because the pot sleeper is connected with a bar; the steel sleeper is full length.
169. By Mr. *Hastie*: Is there any difference between the maintenance of steel sleepers and wood sleepers?—I think it is much the same.
170. By the *Chairman*: The bearing surface of the sleeper on the soil would be less with the steel sleeper?—Very little; not much.
171. The steel sleepers are made the same width as the wood, 8in., 9in., and 10in.; is that so?—A little less.
172. Then they do get less bearing surface unless they are put closer?—Yes.
173. Have you anything at all definite about the life of the jarrah sleepers in India?—No; we have not any definite information as to the life of the jarrah sleeper, although some jarrah sleepers went there about 18 or 19 years ago. No proper record was kept of when they were put in the line; we cannot tell where they are.
174. You do not know where they are?—About four years ago, the different railways using jarrah and other sleepers took precautions to register the different places where they are laid. Even now, going along the railways, you see an iron peg with a board on it saying what sleepers are in the length, and what date they were put in.
175. Have you closely examined any of these yourself?—Yes; I have seen some which have been in the road for four years.
176. By Mr. *Hastie*: That is the time they began to take notice?—Yes.
177. By the *Chairman*: That is too soon to say much about them?—Yes.
178. By Mr. *Atkins*: Were they in good order?—Just as good as the day they were put in.

179. By *the Chairman*: Hewn or sawn sleepers?—Sawn.
180. Do you know where they went from?—Some from Jarrahdale and some from Karri-dale.
181. Did you examine any sleepers of other woods?—Yes; I have examined the different Indian timbers used.
182. How were they standing?—The pyandku and sal sleepers they have had in use in different parts of India—
183. Ever since they have had railways?—Yes; they give the life of these sleepers about fifteen to twenty years.
184. What size were they; do you recollect?—I have seen 8 x 4½ six feet six inches long, 9 x 4½ seven feet, and 10 x 5 nine feet.
185. Those on the different gauges?—Yes. Sleepers were taken to India 18 to 20 years ago, but no record has been kept.
186. Are there any jarrah sleepers in China; of course they have not many railway lines there?—I do not think there are any sleepers there, but there are in the Philippine Islands.
187. Did you inspect those?—Yes.
188. How long have they been down; not very long?—Yes; between five and six years.
189. Are they standing all right?—Yes.
190. That is a very moist climate?—Yes.
191. What kind of soil are they laid in?—Principally sandy soil.
192. Have any of the harbour works got jarrah in them or karri?—Two of the bridges are blocked with jarrah instead of decking.
193. What are the bridges built of?—I think the piles are all of native timber—malave.
194. Is that good timber?—Yes.
195. Is there any quantity of it there?—Yes.
196. Does it come into competition with other timbers?—Yes; when they open up the country it will.
197. When the Americans get to work on it?—Yes.
198. What about the haulage there?—It is much better than in Borneo.
199. That is the sort of timber to be reckoned in competition with our timber?—Yes; as a matter of fact it is much better in the East than karri or jarrah.
200. Can you give us anything about the relative cost they can deliver it at?—At the present time very few are working timber in the Philippines, which is principally due to the Government not having made their arrangements to deal with the forests there—that is the American Government.
201. They have not framed laws yet?—They have no proper land laws framed there yet.
202. You say there is a large quantity of timber there: can you give us some idea of the area of forest country in the Philippines?—That is rather difficult, because there are about 20 to 30 islands, and all are more or less forest country.
203. What are the varieties of timber there?—The principal timbers are malave and yackal.
204. Both hardwoods?—Yes; both very good timbers.
205. Have they any softwoods?—They have several different kinds of cedar. They had no proper book in reference to the Forest Department, but Captain Hann is getting out one.
206. *Mr. Moore*: Jarrah is delivered at the Philippines at less cost than it was five years ago?—Yes.
207. How is it, having this good timber there they did not utilise that good timber instead of importing jarrah sleepers five years ago?—Because the forests have never been worked to any great extent and they could not obtain any large amount of timber in a short time.
208. By *the Chairman*: They have not developed the industry?—No.
209. Is there any mill of any size there?—No; the mills are very small.
210. Equivalent to our spot mills, or smaller?—About the same size as a spot mill.
211. *Mr. Moore*: What would they turn out in a day?—I think about 10 or 12 loads.
212. Is it all native labour with the exception of the foremen?—Yes.
213. Native benchmen?—Natives and Chinese.
214. What do they haul the timber in from the bush with, horses?—They have a certain number of mules there; some were taken over there by the American Government when the war was on. These have been obtained for hauling timber, and they also float it down to the coast.
215. By *the Chairman*: You do not think you could give us the price for the Philippine sleepers?—I really do not think I could give you the price; in fact, I do not think they obtain very much timber there.
216. Do you say it was known better than karri or jarrah; it must be known only by name and not by use?—Yes. Some few years ago it was used in very large quantities; it was principally got in the rough and transported in logs.
217. Where to?—Hong Kong, Shanghai, and Calcutta.

218. That was during the Spanish occupation?—Yes.
219. By *Mr. Fitzgerald*: Are you alluding to malave?—Yes; and yackal.
220. By *Mr. Hastie*: Is there a big export trade from the Philippines just now?—No; the trade has dropped off considerably, simply because very few are working the timber.
221. If there was a fair profit to be made surely a good number would be working it?—Everybody is waiting to see what the Government will do.
222. By *Mr. Moore*: They have no regulations?—In the regulations they had the Government used to charge so much royalty on the timber exported.
223. By *Mr. Fitzgerald*: You have not examined the forests of Borneo or Philippines?—I have been through some of the forests in the Philippines, not Borneo.
224. Are they not of the same character as those in India, a great number of species of trees scattered over a great area?—Not so much in the Philippines.
225. Are the forests the same as in Western Australia?—Yes; the trees run in belts, the same as they do here.
226. Then it is different from India?—Some of the Borneo and Philippines are much alike.
227. The species?—Yes.
228. With regard to the floating of timber in Borneo, did you allude to billian?—No; it will not float; it will float with some of the lighter timbers chained to it; they make a raft.
229. You know nothing of the operations of the Borneo Saw Mill Company at Sarawak?—Do you refer to the company itself?
230. Yes?—I think recently they have joined with the China Mill Company.
231. By *the Chairman*: It is a company?—Yes.
232. By *Mr. Moore*: Do your company contemplate erecting a mill in Borneo?—Yes.
233. What part?—In the northern part, at Yesselton.
234. What is the principal timber there?—Billian and camphor-wood.
235. How far will the mill be from the coast?—Right on the coast.
236. By *the Chairman*: You haul the logs from the mill?—They will float them down. There is a small mill there at the present time, and they bring the logs down by railway.
237. By *Mr. Fitzgerald*: Do you purpose employing native labour or will you import labour?—We shall employ native labour—the natives and the Chinese there at the present time.
238. By *the Chairman*: You will import Chinese?—There are a great number of Chinese in Borneo now.
239. By *Mr. Moore*: What is the harbour accommodation like?—There is a pier there where vessels can load down to 18 feet.
240. By *the Chairman*: A good harbour?—Yes.
241. How do you pay for the timber there? Have you a concession or do you pay by royalty?—We have a concession from the Government.
242. Can you tell us the extent?—We get the timber all along the railway.
243. By *Mr. Hastie*: Is that land under the Borneo Chartered Company?—No, not this particular land.
244. Some of it?—This is the British North Borneo Company.
245. That is a different place?—Yes, round the other side of the island.
246. Do your company intend to put up a mill on the Chartered Company's ground?—I think the land does come under the jurisdiction of the Chartered Company. There is some arrangement between them and the Government.
247. Have they been utilising the timber?—Yes.
248. Not to any great extent?—They have shipped a good many sleepers from there.
249. By *the Chairman*: Can you tell us whether there has been any experience of wood-paving with the Borneo timbers; whether they were competing with our woods for that?—I do not think it has been tried very much for wood-paving.
250. There is no evidence whether they will compete?—No.
251. By *Mr. Moore*: Have you any idea of the trade from Borneo to any of the South African ports?—No, I do not know what the trade is.
252. By *Mr. Hastie*: What strikes me particularly about Borneo and the Philippines is that if the timber is good and can be produced so cheaply there, why the people of Western Australia should think of going in for an export trade at all?—The forests have never been worked there, anything like the forests have been worked here—to the same extent.
253. And not so systematically?—No.
254. By *Mr. Moore*: Is railway construction there a big item?—It is in Borneo.
255. Heavy grades?—Yes, and banks and cuttings.
256. By *Mr. Hastie*: How about railway freights on the Government railways, are they dearer than here?—Do you mean in Borneo?

257. Yes?—The railway freight on logs is very cheap; I would not like to say what it is, Mr. Temperley will be able to tell you that.

258. By *Mr. Moore*: Were you carrying the logs from the mill by private railway or are the logs brought down on the Government railways?—The Government railways.

259. By *the Chairman*: The mills are along the Government railways?—Yes.

260. By *Mr. Moore*: At the port?—Yes.

261. By *the Chairman*: You have to lift from the water?—Yes, there is a crane alongside.

262. By *Mr. Hastie*: What does the Borneo Government get out of the timber? Do they charge a royalty?—There is really no Borneo Government.

263. *THE CHAIRMAN*: It is a company.

264. By *Mr. Hastie*: You said railway construction was very expensive and the freight on logs very cheap, and that cheap native and Chinese labour are employed. Does the Government, or anyone in charge of the country, get anything out of it?—They will under our arrangements with them; they get freight on the logs, for bringing the logs in from the forest to the mill.

265. That is the sole profit they get; there is now no export duty?—No.

266. No royalty?—I am not sure. Mr. Temperley will tell you about that. The Government are anxious to have the country opened up. The railways are not purely for timber purposes.

267. You have not made up an estimate of the quantity of timber likely to be produced from these parts. Is there any probability of these places becoming the centre of the hardwood industry more so than Western Australia; is there any fear of that?—It will be so for the far East. We supply our timber for the East.

268. Not so largely for South Africa?—That will depend a great deal on the facilities offering and the machinery erected there.

269. By *Mr. Moore*: As a matter of fact, the difference in freight between these places and South Africa and Western Australia and South Africa will be very small?—Yes; it will probably be about the same.

270. After the timber adjoining the railway is cut out, is it going to be more expensive to tap the other country, which you say is very mountainous and expensive for railways. After the timber adjoining the existing railway has been cut out, will it be an expensive matter to draw out the timber when you have to lay down railway lines? I do not think railway lines will be necessary if we adopt the American system of hauling—wire ropes, which are used to a great extent in that country—aerial ropes.

271. I was thinking of the billian, which will only float when chained to soft woods. We may take it that once you get hauling distance from the railway line the cost will be considerably increased?—I do not think so, because if we adopt the system of wire ropes it is cheaper than railways.

272. What length logs do they bring to the mills?—They bring logs up to 30ft.

273. Will they deal with 30ft. logs on the ropes?—Yes.

274. It must be fairly open country, then?—If you are hauling timber by means of a winze you have to make a certain amount of clearance.

275. By *the Chairman*: Broadly speaking, what do you know of the supply of timber in Borneo and the Philippines, and the capacity of development with cheap manual labour and water power? Do you think that the Australian hardwoods can compete in the Eastern Seas at all in the future; say, five years hence?—I do not think they will very much. I think the timbers from the Philippines and Borneo will be the principal timbers used in the East.

276. By *Mr. Atkins*: North-East?—Yes.

277. By *the Chairman*: That is, in the China Seas?—Yes.

277A. Then we will take that, with regard to the Eastern Seas. Now with regard to South Africa; how will they stand competition there?—The price of the timbers will be less. The cost of production will be less from Borneo than it is from Western Australia. It is now.

278. It all depends upon the character of the wood?—Yes.

279. The reputation of the wood?—Yes. These timbers in China and Japan are much better known than the Western Australian timber, and it is a very difficult thing to induce engineers to go in for anything in the way of new timber which they rarely use.

280. By *Mr. Hastie*: Where time alone is the test?—Yes.

281. By *Mr. Moore*: In regard to special orders for long piles and long beams, would Western Australia be able to compete for orders of that kind; or is the timber equally suitable for works of that nature?—The Borneo timbers are. Timber 60 feet long was delivered in Singapore.

282. By *Mr. Ferguson*: What timber?—Mahalimbo.

283. By *the Chairman*: That is from the Philippines?—No; from Borneo.

284. *Mr. Moore*: What do they cost delivered, do you know?—I tendered for the same job, and I think their price was about 20 per cent. lower than mine.

285. They evidently considered, then, this timber equally good as jarrah for the harbour work?—Yes. From the experience we have had they also consider the Borneo timbers equally as good as jarrah for their wharf work.

286. By *Mr. Hastie*: Are you still exporting much karri to Germany?—Yes; for railway wagons.

287. By *the Chairman*: Is there anything you would like to state to the Commission throwing any light upon the timber industry?—No; except that I think people interested in Western Australian timbers, indirectly principally, do not recognise the fact that we have to compete with a great many more timbers than they think; and we find that out by tendering.

288. Can you suggest any means by which the cost of production here could so reduce the price as to enable you to tender in competition with those?—No, I do not think I can. Of course, the principal item in the production here is the cost of wages, which is higher than in any other country in the world where timber is produced.

289. That is a thing time alone can settle?—Yes.

290. There is the haulage, but the little alteration in the railage would not make the difference you would require to be able to compete, would it?—Well, it would make a considerable difference.

291. But if the timber were carried at a loss on the railways, it would be no advantage to develop it, would it?—No. It does make a big difference at present. The railway freight being so expensive to Fremantle, it means that we have to send so many ships to Bunbury.

292. By *Mr. Hastie*: But that does not affect Karridale?—No; I am speaking generally. It is much cheaper to ship from Bunbury than Fremantle.

293. By *the Chairman*: That is for the benefit of the trade. You do not care where you ship?—It is not for the benefit of the trade. If there were a sufficient number of ships sent to Bunbury to keep the wharf full, or if, instead of keeping a number of ships outside, which gives the port a bad name, they had more wharf room there, of course it would not matter.

294. By *Mr. Hastie*: You speak of the freight. Can you tell me of any other country in the world where the freight is cheaper than here?—In India, the freight on railway sleepers. The different railway companies have an arrangement amongst themselves, and they carry the sleepers at a very nominal rate.

295. A special rate for sleepers alone?—Yes.

296. By *Mr. Ferguson*: Is that imported sleepers, or sleepers cut in India?—No; only local sleepers.

297. By *the Chairman*: Can you tell us the rate per mile?—No, I cannot; but I can obtain that information for you.

298. By *Mr. Hastie*: And that freight is cheaper than freight for other timbers? It is a special thing for sleepers alone?—Yes. They have a special arrangement for carrying their own sleepers.

299. By *Mr. Atkins*: That is for Government sleepers?—Railway companies, Indian railways.

300. By *Mr. Hastie*: For what consideration do they do that, carry sleepers?—They use the sleepers themselves.

301. On account of their using the sleepers themselves they do it?—Yes. They have an arrangement with Musgrove and other railway companies. They reciprocate.

302. My principal reason for asking this question was that we have heard a general statement about great cheapness. We cannot get figures about it?—I can get you the figures. I have the exact price.

(The witness retired.)

Mr. Charles Temperley, sworn and examined.

303. By *the Chairman*: What is your profession?—I am a steamship owner.

304. Have you been brought up to an engineering profession?—No.

305. You are in business as a timber merchant?—I presume we are timber merchants. In England we do not call ourselves timber merchants. A merchant is a man who buys from a producer and sells to a retailer.

306. You are a producer, and sell too?—Yes; we are everything; wholesale, retailers, and middle-men as well.

307. Would you mind telling the Commission where you draw your supplies of timber from besides Western Australia?—At present we are only engaged in Borneo and West Africa; and I suppose I may say Norway and Sweden, because we sell softwood there.

308. How long have you been connected with the Western Australian timber trade?—I think 1890 was about the first time.

309. What timbers did you deal with first?—Karri only.

310. What works did you put that wood into?—It is a very difficult question to answer now. Do you mean in the first year?

311. Yes. What uses did you put them to? Was it for sleepers or for marine work?—The first business we had in London was the street paving.

312. How long ago did you put down any street paving in London?—I think in 1891.

313. That was karri?—Yes.

314. Can you tell us the conditions of that now; what reputation it has gained?—The first sample we put down was in Lambeth, but as far as I know at present it has been removed owing to a street improvement. It was only a small sample piece.

315. It was not removed because of defects?—Oh dear no!
316. Did you have any report made upon the blocks when they were taken up as to how they had worn?—No; not on that particular piece.
317. It had given satisfaction, had it?—Yes. We had the misfortune to beat the Jarrahdale jarrah. There was a lawsuit on the subject, because we made some comments on the results of our trials.
318. That was on the Lambeth?—Yes; the entrance to the Lower Marsh; that is the name of the street, the Lower Marsh.
319. What was your next piece of karri blocking?—I could not tell.
320. Have you any reports or records of the karri paving you laid down?—Yes. I can give you plenty of them which have just been published. They arrived by the last mail. As a matter of fact you will find a complete record of paving in the pamphlet issued by the Agent General.
321. That will give all the information?—Absolutely; far more than I can give you.
322. Is the demand for blocks still maintained, or is it increasing or decreasing?—It is not increasing, I am sorry to say.
323. Is that due to competition?—No. It is principally due to the bad results obtained from the use of West Australian timbers.
324. That is, it does not answer what it was hoped to fulfil?—No.
325. Can you give us the reason for that?—Practically there is only one reason—shrinkage.
326. Give and take?—Shrinkage. That is the only thing. The actual wear has exceeded our expectations; that is to say, the depth of wear.
327. Are you instituting any experiments in the endeavour to find out how to overcome this difficulty of shrinkage?—Well, yes; we have tried, I could not say right off, but I should say five or six different methods—electrical, hot air, steaming, and various other processes; but the only practical way to do it is to keep the planks in the first instance, and to keep the blocks in the second instance, before being used.
328. That is age?—Keep them; store them. We find that the local authorities who buy their timber ahead of requirements and store their blocks six months before putting them in on the roadway get perfect results.
329. It is only a question of six months' saving?—Oh, no! Blocks six months; the timber must be at least two years.
330. Then it requires two years' seasoning before you can lay them with safety?—Yes. I would say two years' proper seasoning. We have stored timber three years improperly, and, when we cut it, it was practically the same as when it came off the bench here.
331. By *Mr. Moore*: It means that you keep timber two years on shipping direct from here, and then you wish it kept six months after it has been cut up into blocks?—Yes. The municipal authorities in Paris have had karri, and they have had the best results from it, entirely due to the fact that they kept it before cutting it into blocks and when they had cut it into blocks they kept it six months.
332. By *Mr. Hastie*: It would do if you cut it into blocks when it arrived?—It might do, but if you cut it into five-inch blocks and the order was for four-inch you would be landed. If we could say what depth of block would be used, we could do it, but there is no standard; 5, 4½, or 4.
333. By *the Chairman*: Each engineer has his own idea?—They have with regard to the particular size of bricks, but not pavings.
334. By *Mr. Hastie*: That is, clay bricks and not wooden ones?—Yes.
335. By *the Chairman*: What other lines of use do you find promising with regard to our timbers?—In England, do you mean?
336. Yes; in Europe principally?—I do not know how far I am compelled to answer your question, because it may prejudice the interests of our company.
337. I do not wish to prejudice the interests of your company at all, but we would like you to give us some idea of what we may hope for in the development of the timber?—I can answer that without prejudicing our company, because wherever hard wood is used, jarrah can be applied, except, perhaps, in the case of *lignum vitæ*; that is about the only name I can think of at the moment; and it is a substitute for any hard wood almost.
338. There is no hardwood in Europe it would have any trouble in competing with?—Oh, yes, undoubtedly! Oak.
339. But European oak is not as plentiful?—It is sufficiently plentiful to put the price down at the present moment to £1 per load less than we can supply it at.
340. Are they using it for blocking purposes at all?—No.
341. In what works does it compete?—Wagon-building, furniture, engineering generally.
342. Wharf work?—No; we do not use much oak for wharves.
343. By *Mr. Moore*: As a matter of fact, do your representatives here prefer blackbutt to either karri or jarrah for truck-building purposes?—No; they prefer karri and blackbutt to jarrah. In fact they never use jarrah for trucks. At Yarloop the other day I found them repairing a wagon which had been on the road for five years without going into the shops. I was so much impressed by this that I had that frame packed up in boxes and sent to London to show the results. The holes where the iron work had been were just as sharp and clean as they had ever been, though they were made five years previously.

344. By *the Chairman*: That truck had been on rough timber traffic?—Very rough indeed. I have sent on the statistics with regard to the duties the truck had to perform, which were a long way in excess of anything it would have to do in England, not only with regard to weight, but in the nature of the road it would have to travel over. I also hope to be able to send a blackbutt wagon home as soon as one of the wagons can be obtained; but the results of blackbutt are more promising. We get blackbutt sizes in England, because the Great Northern use it. They get it from New South Wales, but will not give us an order in Western Australia.
345. It is not quite the same timber?—It is not quite the same, but the appearance is identical. I had a blackbutt felled the other day at Mornington and brought to the mills. There were two lengths, 24ft. and 36ft. long, so that it was a pretty good tree, but I have not had the results yet. They claim here that the cutting of English wagon scantlings is a most punishing thing for the mill. They reckon that it costs at the lowest £1 more than any ordinary quality.
346. By *Mr. Atkins*: A severer selection?—Yes; I am sending on the results of this log to the North-Western Railway as a present, and am going to ask them to try it. After making up my mind to do so, I asked the manager how much he could get, but I found we could get hardly any blackbutt. We happen to be in a belt of it to-day and for the next few weeks we may get a few thousand lengths, but after that they do not know where to get others.
347. Your Worsley mills are great places for blackbutt?—Between that and Mornington generally.
348. It only grows in the flats?—Yes.
349. By *the Chairman*: Have you found any other special service you value for karri, such as arms for telegraph posts?—That is so. We supply the General Post Office. In fact, I may say that the specifications for telegraph arms have, ever since telegraphy has been in existence, said "English oak." Now they say "West Australian karri."
350. That is after a test?—After years and years of it.
351. By *Mr. Hastie*: Is karri exclusively used?—No; they use every kind of timber offered to them. They say: "Send us five thousand arms and we will try the wood." But they require every piece of timber to be sound. It has to be young, and the grain has to run from one end to the other. No wood will be taken with the grain diagonally, no spongy stuff and no brittle stuff. They put it to a very severe test. Although we know what they want they reject 25 per cent. of the stuff we send them.
352. By *the Chairman*: Do you cut it out for them?—No; we send the scantlings and they plane and chamfer and bore it themselves. They pickle it as well. I do not know how much gets into the karri. I should say none. They put it into a hot bath of some queer sort of oil. I do not know if they have sawn a piece of karri in two. If they did they would not find any of the pickling inside. This is what they have been doing all through. Their grandfathers did it; it is in the school books: "When you get a telegraph arm, put it in the bath."
353. By *Mr. Hastie*: Is the demand at home for karri as great now upon the whole as it was years ago?—No.
354. There is a decreasing demand?—Yes.
355. We are exporting less than before?—A good deal less.
356. By *Mr. Atkins*: How does it compare with jarrah? Is the demand for jarrah also decreasing?—Do you mean as far as England is concerned, or the entire world?
357. Europe generally?—It is only recently that the Continent has taken any Western Australian timber at all; only within the last few months, I may say.
358. You say the demand for karri has decreased. Has the demand for jarrah increased to the same ratio, or has there been a drop in the whole thing?—Yes; but not only in England. It is a general depression really.
359. Proportionately is there a greater decrease in the demand for karri than jarrah?—No; not at all.
360. They are the same?—Yes; we cannot distinguish between the two.
361. By *the Chairman*: You say there has been a general decline in the trade. Is that entirely due to depression in the timber trade or to competition?—Partly due to one and partly to the other. Our principal competitor is oak.
362. American oak?—Yes; and at one period, quite recently, West African mahogany.
363. Could you give us any information as to the cost of production and delivery at the ports of the various hardwoods of the world?—I could; but unfortunately I left all my figures in London. I had a man doing nothing else but that for three months. I can give it roughly.
364. That is very exact knowledge which would be very useful to this State in framing its laws with regard to timber, if you could possibly supply us with it?—It was when we got a cable with regard to this Commission that I put this man on to make exhaustive enquiries, and the results were so pronounced that I did not think it was worth while bringing the figures. There is no part of the world where the cost of shipping the timber approaches this place.
365. That is why we should like to have the exact figures?—Yes; I may be able to get them for you.
366. By *Mr. Hastie*: You mean that the cost of production is higher here?—Yes; so much higher that it is not worth while having details. Any person not in this business can answer the question. You know what the wages are here, and if you read any newspaper you can see what the wages are in other places.

367. By the *Chairman*: We should like to place it on record. A report like this might be turned up 20 years hence?—I cannot tell you now. The report was got up hurriedly before I came here. The man I put on was a man who had been in Western Australia and has been in other countries. He is a bit of a dab at this sort of business, and his information was pretty reliable, although it was gathered quickly. I can give it to you when I go back to London. I am going to India, Burmah, Borneo, the Philippines, British Guiana, and the Southern States of America. When I get back to London I shall know as much about the cost of producing timber as anybody in the world. As a matter of fact, Millars contemplate going into all trades in timber. When I left England a shipment of West African mahogany was due. We have 70,000 square miles of concession there.

368. You have concessions in Borneo?—Yes. Practically the area in which we can operate there is about a million acres.

369. Would the Borneo woods supplant the woods you have been sending from here? Would the trade you have here be moved to Borneo?—That is difficult to say, because we have not started yet.

370. You know the timbers you are going to deal with, and have an approximate idea of their cost of production. It is a question of whether you can satisfy your customers?—I find from a cable I had this morning that tenders are being called for 150,000 Borneo sleepers for the Suakim-Berber railway line.

371. That tender has not been let?—I suppose not. My cable is two days old.

372. Is it the Government?—I think the military authorities are letting it. It is useful information to know that Austrian oak is our competitor in Egypt. Jarrah could not look at it at the price. It is rather a puzzle to me how on earth they found out about Borneo, but the fact remains they are tendering for Borneo sleepers. The War office would supply the information. It may be that the contractor who is going to build the railway is familiar with Borneo timbers. In that respect I can understand it. Pauling & Co., who built the railway in Borneo for the British North Borneo Company, have a sawmill there.

373. By *Mr. Fitzgerald*: A complete mill?—No; only a sleeper mill. If Paulings have the contract for building the railway, it might account for the thing. They have the record for the world for railway building. The railway to Bulawayo was built at a mile a day.

374. By *Mr. Atkins*: Nearly a hundred miles a year?—They did a mile a day.

375. For the whole of the line they established a record. But it was only on level ground they did so, and it is not reckoning on culverts and bridges?—They ran the railway over 300 miles in the year. However, what I say may account for the Egyptian business. I understood when I left England that the people who had the contract for the big Assouan dam got the contract for the railway.

376. By the *Chairman*: You have not yet started operations in Borneo?—Yes; we started on 1st September.

377. You will deliver from there now?—Yes; I had four cables from the manager there wanting to know when the mill from Western Australia was going to arrive.

378. You are shipping a mill from here to there?—A complete mill.

379. That will be a more complete mill than is in Borneo now?—They are all makeshift mills.

380. You have not been to Borneo yourself yet?—No; we sent experts there.

381. Is there more than one timber in Borneo that could be used for railway sleepers?—I think there are about seven kinds.

382. So in going through the forests, if any woods were optional, it would not matter if the timbers were scattered in their growth. You could take them all as they come?—That is what I expect.

383. Have you any valuable lightwoods in Borneo?—There are other specimens of wood that are really lighter, I believe, than Swiss or Swedish pine.

384. Will you send any to this State?—I have given instructions for samples to be sent here now.

385. I ask that because there must be a good deal of demand for some kinds of softwoods here, for instance, in the fruit-packing industry, which will develop here?—Deodorous wood?

386. Yes; and one that would not twist. The best now comes from the Pacific coast of America, from Puget Sound. We wished to know whether there was any timber in Borneo that would ultimately come in for that purpose?—As far as I can say at present they have two trees there that appear to be extremely light and, at the same time, tough. That is what you want—a case would not burst open.

387. Have you any idea whether any wood you have in Borneo would compete with Oregon, which you are now importing?—We have one wood there out of which they now build the top sides of their lighters. It is terribly tough.

388. Would you be able to compete in price with Oregon?—Yes; undoubtedly.

389. Then the trade you now have with the Pacific coast may drift to Borneo?—Not entirely. You cannot supplant an existing trade like that.

390. By *Mr. Moore*: How is it that this trade in Borneo timbers has not been exploited before?—Because the principal part of the northern part of Borneo is held by the British North Borneo Company, who have been rather impecunious. I attribute our satisfactory arrangements with the company to the fact that we were the first people to go there with any pretence to exploit the trade.

391. Others were promoters? You were business men?—There have been no promoters there.

392. Were there no saw-millers there?—There was the North Borneo Trading Company, which we are now trying to purchase. They ruined themselves on tobacco and rubber.

393. By *Mr. Fitzgerald*: There is the Borneo Saw Mills Company?—They have amalgamated with Paulings' Mill.

394. By *Mr. Moore*: What arrangements have you made with the British North Borneo Company? How do they hold their land from the British Government? You dealt direct with the company?—We dealt with the Government. The British North Borneo Company is a chartered company which carries on the government of the place.

395. Is your mill erected near the port of shipment?—We have taken over the Government mill at the new capital of Jesselton. This mill was erected principally for the construction of the railway which is just about finished.

396. Have you the right to run over the railway?—Yes; we have made arrangements for a special rate.

397. Does the timber come right down to the coast?—Yes; but we are, as well, quite independent of the railway. A month ago there was a washaway on the railway, but we kept the mill going by towing logs from the adjacent islands. Most of the woods of Borneo float. If we want to bring to the mill a log of billian we simply lash to it logs of mirabeau and camphor, and they float it.

398. Do any rivers empty themselves near your mill?—Yes; the Padas is a magnificent river.

399. Is it well timbered?—Yes; the principal timber we are to work is on that river.

400. In working out these forests do you propose to cut this timber as it comes?—At the present moment the Chinese authorities take five woods. They have given us an order for sleepers, and we can cut five different sleepers.

401. By *Mr. Atkins*: You have an option over five?—Yes.

402. Such as we might specify karri, jarrah, or red gum?—If we could only do that here it would be well.

403. By *Mr. Fitzgerald*: Do you receive the same prices for all?—No.

Mr. Henry McCoy, sworn and examined.

404. By *Mr. Moore*: You were appointed to supervise the sleeper-hewers at the test held by the Commission at Mornington?—Yes.

405. Do these figures correctly state the result of the hewing operations?—Yes.

406. And you put them in as evidence?—Yes. They are as follow:—

10in. x 5in.	...	200 7ft., 28 8ft., 13 9ft. sleepers.
9in. x 4½in.	...	27 7ft., 1 8ft., 2 9ft. sleepers.
8in. x 4in.	...	24 7ft. sleepers.
8in. x 5in.	...	1 6ft. sleeper.
7in. x 4in.	...	11 5ft. 6in. sleepers.

Out of the above 1 7ft., 10in. x 5in., and 1 6ft., 8in. x 5in., were cut on the quarter. I also passed 14 split posts 8in. x 3in., and 19 split posts 6in. x 3in., 7ft. long.

407. Have you anything farther to add to your previous evidence with reference to hewn *versus* sawn sleepers?—I was under the impression that I said I thought about 30 per cent. of hewn sleepers was got out of a log. I believe I did say afterwards that there would be the same percentage of sawn.

408. You say there would not be more than 35 per cent. of good sawn sleepers?—I mean either sawn or hewn.

409. You think, then, the result would be practically the same?—The same.

410. In that test at Mornington, what percentage of sleepers were on the quarter?—Only two out of 303.

411. About two-thirds of one per cent.?—Yes.

412. How do you account for there not being so many on the quarter?—I cannot account for it. I never had sawn sleepers cut like that before.

413. Do you think there was a superior class of timber, or that there were more expert benchmen?—The only conclusion I can form is that the benchman was instructed to cut the sleepers on the back. It is possible to saw sleepers on the back.

414. They evidently got good results in that way, and yet cut only this small percentage on the quarter?—Yes. They did not get as high a percentage of sleepers as the hewers. If the mill-hands had got as high a percentage as the hewers, no doubt they would have had more on the quarter. Having to cut them on the back reduces slightly the percentage of sleepers produced.

415. By *Mr. Atkins*: Which are the better, hewn sleepers out of good timber or sawn sleepers out of good timber?—Provided the timber is straight-grained, they are both equally good.

416. You have seen a lot of those sleepers taken out of the railroads?—Yes.

417. What do you think the principal reason for their having to be taken out so soon?—In the case of sawn sleepers it is generally their being broken under the rail; and hewn sleepers are free, and split where the dog is driven in.

418. Does not the fact that the hewn sleeper is split in hewing make it much more liable to split than a sawn sleeper which is not dead on the straight grain?—I believe the hewn sleeper is more liable to split; but I think that is because the hewers pick the free timber. A lot of tough timber is sawn.

419. You saw a number of sleepers cut in by the rail. What do you think is the reason for that?—I believe the wood was too soft.

420. You mean it was not first-class timber?—What I consider first-class timber will, I think, be cut as much as timber which is not so good.

421. You do not think the cutting by the rail has anything to do with the quality of the timber?—No. The timber so cut is not inferior jarrah.

422. By *Mr. Moore*: Those sleepers taken out are 8 x 4. With what are you replacing them?—With 9 x 4½.

423. Do you not think they would have a much longer life if you made them 9 x 5, so that the dog would not go through the sleepers?—Yes. Better 10 x 5.

424. What is the difference in the cost of the 9 x 4½, the 9 x 5, and the 10 x 5?—The difference between the 9 x 4½ and the 10 x 5 is about 7d. per sleeper, on trucks. They would cost more delivered.

(The witness retired.)

Mr. Charles Temperley, farther examined.

425. By *Mr. Moore*: Can you give us any information as to the difference in freight between the ports of Borneo and South African ports, and the ports of Western Australia and South African ports?—If I did, it would be conjectural.

426. By *Mr. Atkins*: Probably there would not be much difference?—I have not tested the South African market.

427. What do you suppose?—I suppose the freights would be practically the same. We should expect them to be similar.

428. By *Mr. Moore*: So it appears that Borneo timber will be a formidable rival to ours in the South African market, as well as in the Eastern?—Yes. Since last I saw you I have had a cable informing me that samples were being sent from Borneo to South Africa. Any new interruption upsets the trade, because it disturbs the market.

429. Will billian timber be used for railway and for mining purposes?—No; it is too good. The camphor-wood will compete with jarrah.

430. Does the camphor tree grow high enough to be able to compete with jarrah for piles?—I can give you ocular demonstration of that by producing a photograph of the trees with which we are operating.

431. By *Mr. Atkins*: What is the average height of the tree, without branches?—I do not think we have any average. We can get a camphor tree longer than a jarrah tree. I do not know that camphor is a good pile timber. We recently tendered to the Dock Company in Singapore for their requirements in timber; and they gave us the 3 x 9 portion of the order, but gave the whole of the square timber to Borneo; not to us, but to our competitors (the North Borneo Trading Co.), at a price much lower than ours. I think the dock company would have given us a slight preference; but the Borneo price was so far below ours that there was nothing else open.

432. The Borneo Company cut the price as usual?—No. Their timber costs them much less.

433. I suppose you were keeping up the price somewhat?—No. We did not quote any Borneo timber. We quoted jarrah only.

433A. By *Mr. Moore*: How far is the scene of operations of the North Borneo Company from you?—They are on the east side of the island and we are on the west.

434. By *Mr. Fitzgerald*: Are you near Bruni?—We are north of Bruni.

435. By *Mr. Atkins*: From your point of view, what do you think about the Western Australian timber trade generally; do you think well of it?—That is a pretty wide question.

436. Would you care to make a statement with reference to the timber trade generally?—I will say this, that the difficulties we have had to cope with since 1895 (I have not the dates with me, but that is near enough) could not have been foreseen without visiting this country, which I did not do; they are of a sufficiently serious nature to render the future of the industry problematical, and we shall have to have some advantage either in freights or in short production in other parts of the world to enable us to do any good at all. At the present moment, for instance, freights are at a minimum, 33s. a load.

437. By *Mr. Hastie*: To London?—Yes. We have timber lying in London unsold which cost us 63s. 6d. per load. That is an enormous variation.

438. By *Mr. Atkins*: You mean, cost you 63s. 6d. freight?—Yes. And if you go to Liverpool you will find stock there which cost us 66s. per load.

439. By *Mr. Moore*: Was that occasioned by the war?—The war had nothing to do with it.

440. Did not the war send freights up?—Not in the slightest.

441. By *Mr. Atkins*: How do you account for it?—One of the waves of trade fluctuation which take place from time to time. The war did not affect sailing ships; they were not occupied in transporting troops or produce.

442. It seems a tremendous fluctuation?—I do not think so. I have known worse than that. The waves of depression in shipping alter. I have been 25 years at it, and I know something about it. You get a wave of depression, then a wave of prosperity; the waves of depression increase in length, while

the waves of prosperity, which are just as acute, shorten. That is due to the fact of the facilities for building steamers and the constant increase in price. Take this as an instance. My firm lost two ships the year before last in the Atlantic, they were 3,000-ton ships; we did not replace them with 3,000-ton ships, but by 6,000-ton ships. The cost of the two was £500,000, which was not so much more than the cost of the other two 10 years previously. The building of tonnage is overreaching the demand quicker than it did 10 years ago. Two years ago we had a tremendous boom due, first of all, to the previous depression. Everyone stopped building ships, and as the trade of the world overcame the supply of tonnage, we got a boom. Coincident with that there was a bad harvest in England, in France, and in America. I hear this year there is a record crop in the Eastern States of wheat; we have to study that. We have to study the rice trade, the Indian export trade, wheat, jute, and other things. The curse, if I may use a strong word, of the timber trade is the fact that you have 12,000 miles to carry to the best market, and you have a freight which is controlled by other trades entirely—wheat, wool, and so forth. If we could ship all the stuff when the freight was at 30s., and sell it at 60s., we would be all right; that requires enormous capital. The capital we have sunk in timber is over half a million.

443. By *Mr. Moore*: In stock?—Yes.

444. By *Mr. Hastie*: Your future exports of timber from here depends largely on the price of freight?—That is one of the controlling influences. It would not depend on that if we could produce all hardwood, as Canada, America, or South America; but South America is not an export country at the present time. They only export hardwood from South America for dye purposes; it is quabacho. They want to export this wood for use for sleepers. They tendered against us in South Africa; it was about as 5 is to 7. They were 7 and we were 5. In their own country we cannot compete with them now.

445. You cannot compete with them as to production?—In price. We could at one time, not now.

446. Another important factor is that if the timber trade of Borneo develops there will be less demand for Western Australian hardwoods in the Southern Hemisphere?—That does not follow. The trade of this country may double as the trade of Borneo doubles. You cannot make a statement that because Borneo is going to export timber, the exports from this country are going to decrease; they may double, and the exports of Borneo may quadruple.

447. In the Southern Hemisphere where are the two competing centres?—There is hardly any demand in the Southern Hemisphere. The principal trade is in India and China.

448. By *Mr. Atkins*: The point is this: it is not the increase of the output so much as the increase of the demand?—The increase of the demand; undoubtedly that is the only thing we have to study.

449. Supposing we turn out 10,000 loads this year and the demand is only for 5,000 loads, we would get a good price for it; but if we turned out 5,000 loads and the demand was only for 4,000 loads, the price would not be good?—There is no probability of the supply being short of the demand.

450. By *Mr. Hastie*: For a reasonable time?—Say ten years.

451. Would you say that Borneo is not to any extent a factor in the demand for West Australian timber?—A very strong factor. I do not confine my remarks to Borneo, but we have a concession in the Philippines of 350,000 acres or 300,000 acres. We have now customers in the American Government, and we are sending piles, paving timber, sleepers, harbour timber, and scantling.

452. From the Philippines?—We are supplying them from here—jarrah. Dalgety's have a ship in Bunbury now loading sleepers for the Philippines, but if they develop the industry in the Philippines they will be able to supply them with all they want cheaper than they could get it here.

453. By *Mr. Moore*: How do you account for the fact that for 20 years they have been getting timber from here for the Philippine Islands when they have such a vast area of forest country?—For the reason of the risk. At Formosa, Samuel and Co., the head of which company is the late Lord Mayor of London, have a concession which is not get-at-able on account of the head-hunters, you know what I mean. There is a large area of forest country there, and any quantity of fine hardwood. You cannot get white men to live where there is a chance of losing their heads. The Philippines in the port were in the hands of the Spaniards, and a Spaniard never walks from one room to another if he can help it. The concession is only 16 hours from the capital.

454. By *Mr. Fitzgerald*: What is the principal timber in the Philippines, malave?—I do not know the native name, but it is similar to the Borneo timbers. There is mirabeau, which is called teak; it is a bastard teak—I noticed some on the Philippine Islands. It is the same as degetti which the South African Government used to buy from Java for sleepers. At one time we could get no orders at all for jarrah for the Transvaal, but now we are shipping a good deal since it has become British. Previously they would have nothing but degetti, which is not as good as jarrah. You come in contact with it in Holland.

455. Can you enumerate the Borneo timbers which will enter into competition with the timbers of Western Australia?—I could send a message to the office and get it for you.

456. Have you made any efforts to capture the Indian trade?—We are opening an office this week in Calcutta, and we hope in a fortnight or three weeks' time to open an office in Bombay. On my way out I have our representative in India to meet me at Bombay; the week before last we nearly got let in for a £13,000 bad debt; that would take the gilt off the gingerbread. We have an order in India now which will come to £100,000, and it will require microscopic industry to get anything out of it. We thought it was policy to take the order, as we knew the railway people connected with it.

457. West Australian sleepers?—Jarrah. The first ship went from Bunbury; she was a 6,000 ton ship drawing 23 feet, and she had to lie in 26 feet of water. We have terrible competition in India now. I have received a cable saying we have lost the Madras railway order. There are two timbers—

pyandku and padouk; beautiful timber. Padouk has been almost entirely absorbed by America. They have been trying an American substitute. The business was in the hands of a first-rate firm, Hoare and Brown, teak and mahogany people. It did not pay them, I presume, to push it, and we have jarrah and karri. The result was that as soon as the value of that wood was established, the Yankees came in and nabbed all the lot.

458. Do you find hardwoods from East Australia come into competition to any extent with Western Australian hardwoods?—We have lost an order for 300,000 sleepers for South Africa. New South Wales supplies tallow wood, redgum, boxwood, mountain ash, and turpentine wood. They have the option of five woods, whereas we have only the option of one; but the New South Wales Government have what they call a commercial agent in Johannesburg, and by virtue of his designation he dams us every time. He can go and talk to Lord Milner or anyone else as he wants to.

459. By *Mr. Moore*: You think, then, that if there were a representative of Western Australia, we will say in South Africa, it would assist the timber trade to an extent?—I say, "Yes, if there had been"; not "if there were." It is too late. It is no good going on the ground now other people have seized it.

460. By *Mr. Hastie*: You mean practically all the big public works are arranged for?—The moment the war was over the New South Wales Government sent this man to Johannesburg, and he gave himself the air of an Agent General. The Western Australian Government have been short-sighted in the past 10 years. I could cite an instance right off. You had a man in the office in London who devoted his time to promoting the use of your timbers. When Sir Edward Wittenoom left and Mr. Lefroy went, instructions came from this side to dismiss that man. "Spend no more in promotion of timber." Those were the words, I think.

461. Do you think the exhibit at Glasgow and Paris led to any trade in Western Australia in the timber business?—Undoubtedly; and I would say the trade we want for jarrah is not a sleeper trade. We want to get jarrah used for purposes which will afford payment of more money and where it is really more useful. Take a mantelpiece like that (indicated), for example. You can get a price for making a mantelpiece like that in jarrah a long way above the price you can get for paving blocks. I think the Paris and Glasgow exhibits must have done a great deal of good. So much so that I have cabled to remove the whole of our Earl's Court exhibition to the Capetown exhibition. The two items in the cost of production which are really answerable for the non-success of the business, non-development, I should say, of the business, are labour, wages, and railway rates. In every respect you are the equal of the rest of the world.

462. Do you think with regard to plant and equipment they are quite up to date?—There are no saw-mills in the whole world which can beat our Mornington mill.

463. By *Mr. Hastie*: Where are railway rates less than they are in this State?—Per ton per mile?

464. Yes?—They were less in this State.

465. I would like definite information where they are less than here. We have been inquiring, and mostly find there is very little difference between them, and I have grave doubts whether we are not about as cheap as any of them except as to special rates for special purposes?—Most timber industries are carried on by river. Here, I can only refer to rates at which you carried our timber for several years.

466. You are comparing present rates with past rates?—Yes. You raised them from 30 to, I believe, 60 per cent. There is no precedent in the entire world in the history of railways for any such advance in the rate of carrying goods.

467. Perhaps not, but the general idea was that there was so much loss on the private rate?—The general idea is no good. I have the authority of a man who ran your railways for years, Mr. Davies, to say that the rates at which we carried timber paid him.

468. It was mainly on Mr. Davies' figures, showing that the timber traffic was unpayable, that the increase was made?—We have 320 miles of railway, and we can make them pay at a great deal less rate than you charge. Why cannot you?

469. For a great number of reasons. You do not make your railways the same as the Government make theirs?—I contradict you there, right off. I reckon that you have no seven miles of Government railway in this country which can beat the railway from Walkalup to Mornington.

470. I understand that at that particular point it is very good, but there is a lot more railway which is not furnished in the same manner as the Government line?—The railways made by other companies are not, but all ours are every bit as good.

471. I know the Mornington line is?—We make that pay.

472. By *the Chairman*: You have your own wharves in London, have you not?—Yes. We spent £100,000 upon it.

473. You cut the blocks up at the dock?—Yes; we convert timber there.

474. And what would your principal trade in the United Kingdom consist of besides supplying paving blocks?—Railway, engineering works, wagon building, sleepers; these are the principal items.

475. We had some evidence from Mr. Goslett to the effect that he was employed by your firm some time ago, and at that time secured some orders for harbour works or works of that character in Belgium. Have you any information as to how that timber which was supplied stood the water?—I, and not Mr. Goslett, started the business two years before he ever sold any. The Belgian Government carried out tests on their own for strength, fire resistance and water resistance, and the engineer at Tenheusen put jarrah, karri and green heart into water for twelve months. The pieces were attached to chains, and when he recovered them he found that the karri and the greenheart had resisted the toredo, which is very rampant there, better than the jarrah. On the strength of that test he gave us an order. He also

communicated with the harbour engineers of Sunderland and West Hartlepool with regard to the use of Western Australian timbers and got satisfactory replies from them.

476. By *Mr. Hastie*: Do you think that the difference was caused by anything in the water or by anything in the wood?—I think that the toredo in some waters will eat anything. I believe it will eat greenheart. I have been told that greenheart has been riddled by toredo in the Clyde. We built our pier at Purfleet, London, of karri at a cost of £25,000. It is now four years old and it is as good as the day it was put up.

477. By *Mr. Moore*: You propose starting a timber business in West Africa?—We are importing mahogany from West Africa. It is all shipped in logs and converted in London. All mahogany is converted at the port of destination.

478. By *Mr. Hastie*: Is that the same as the American mahogany?—There is none in America.

479. By *Mr. Fitzgerald*: Is it the same as the Honduras mahogany?—It is the same tree. We are paying this State £15,000 for the timber we get where £200 would be sufficient, and we cannot legally hold our leases. The Government point blank refuse to grant any legal right, but they jump on our cheque like a vulture on to beef when it comes along.

480. By *Mr. Hastie*: There are different legal opinions on the point?—We felt in London that the industry was in anything but a satisfactory state. Companies were floated and none of them were doing the work we were doing. They had not a sample of timber in London.

481. Have you ever inquired into the subject of the length of time in which there would be a good supply of hardwood timber in the world?—I have in Western Australia, which is of more interest to me; and I have discovered that the so-called cut out forests, which are painted yellow on our plans when they came to London, are far from cut out. I have been through a forest at Jarrahdale which was cut out 20 years ago, and I have seen logs which they say were not milling logs 20 years ago. At Yarloop I saw a magnificent array of jarrah trees all under-sized for milling logs, but yet coming along. So with proper conservation I do not think your forests are ever going to be cut out.

482. But there is a fear that in a comparatively short time the world's hardwood timber supply will be very short?—There are in the world millions of acres of hardwood forest which have never been touched, nor even surveyed nor examined. They are inaccessible to-day, but can be worked with modern appliances. Assam is one magnificent forest of hardwood, extending 200 miles from the coast. Twenty years hence, when we introduce electric locomotives and similar means of traction, hardwoods may be cheaper than they are to-day. In America, in hilly country, are enormous tracts of oak forest, which I am told are intended to be worked by steel cable-ways now being devised. So much impressed am I with the proposal that I am suggesting to Mr. Teesdale Smith that we should go to have a look at the system, with a view to applying steel cable-ways to the forests of this State.

483. What is your opinion about deepening the approach to Rockingham, so that vessels can enter the port?—I have personally surveyed the entrance, so far as I could with the naked eye. Whether we shall deepen the approach will depend on the cost, and on what support we can get from the Government. We cannot afford to dredge a passage, build beacons and make buoys, for the benefit of the shipping trade of the world. There is no safe anchorage near Fremantle.

484. But Rockingham is a private port?—Yes; but the so-called harbour between the island and the mainland does not belong to us. The beach at Rockingham is our private property. The difficulty in the way of increasing our wharfage there is that we should have to work in 50 feet of water, which would be expensive; and we have only the Jarrahdale concession there from which to draw timber. If we could draw timber from our other leases to Rockingham, we should not hesitate about the expenditure. But I take it that to obtain a right-of-way from the Government, or from whoever else is interested, would be practically impossible; therefore we cannot get timber to Rockingham from stations other than Jarrahdale, except over the Government railway.

485. I think the Government will hesitate long before spending money on improving a private property?—When I suggested Government help, it was not in order to facilitate our shipping there, but because I believed that if the Government contributed in some way to the opening of that channel the result would be a roadstead which could accommodate nearly all the British fleet; whereas there is now no place near Fremantle where a ship can lie in safety, outside the Swan River. Even if Rockingham did not exist, I think the Government ought to open the channel. The job would not be expensive.

(The witness retired.)

The Commission adjourned.

FRIDAY, 20TH NOVEMBER, 1903.

Present:
Mr. N. J. MOORE, in the Chair.
Mr. R. Hastie, | Mr. W. V. Fitzgerald.

5

(AT COOLGARDIE.)

Mr. Godfrey William Ellis, sworn and examined.

To the Chairman: I am inspecting surveyor for the Eastern Goldfields, and am conversant with the fields from Norseman to Eristoun, and from Southern Cross to Kurnalpi, practically the whole of the fields. In addition, I am Chairman of the Timber Tramways Application Board, the functions of which are to advise the Lands Department on all applications for permission to construct timber tramways. We recommend the application provided it does not interfere with timber supplies for local mining. We have dealt with about 12 different applications, and four applicants are now carrying on operations, while I understand several others have had their applications approved but have not yet started operations. The companies now carrying on are: The Westralian Timber and Firewood Company, Kanowna, with a 3ft. 6in. gauge line; the Sons of Gwalia Gold Mining Company, Limited, Mount Malcolm, with a 1ft. 8in. gauge; the Kalgoorlie and Boulder Firewood Company, Broad Arrow, with a 3ft. 6in. gauge; and the W.A. Goldfields Firewood Supply Company, Kurrawang, with a 3ft. 6in. gauge. When an application is made to the board, a plan showing the route to be taken is put before the board, and permission is given to the applicant after approval to put in spur lines from the main track for a distance of two and a-half miles without any farther application. This regulation is not carried out in accordance with the wording of Regulation 1 (Timber Tramways). Only the general direction of the proposed tramways has been furnished to the board. I am of opinion that a survey of the proposed tramway should be put in with the application, and also with any applications for extensions and deviations, and that these latter should be dealt with by the Timber Tramways Application Board in the same manner as original applications are dealt with.

By the Chairman: Have you had any application for a tramway running northwards from Ubini on the Government railway?—Yes.

Did you recommend its refusal?—Yes.

Why?—The department having advised us that application 10/802 had already been granted for practically the same country. Subsequently application 10/802 was submitted to the board for their recommendation.

What action was taken by the board?—We wrote to the department pointing out that we thought it would be advisable to reconsider application 12/802 before finally dealing with 10/802. These matters did not again come before the board.

In your opinion would it have been more in the interests of the State for the Ubini application to have been granted?—Yes.

Yes?—Because as pointed out by the board, by allowing the extension of 10/802 southwards in the direction of Bulla Bulling, timber within seven miles of the Government railway would be hauled over a private line for 30 miles practically parallel with the Government railway, whereas the tramline from Ubini would secure the revenue for that mileage to the Railway Department.

So that in this case the private tramway is in direct competition with the Government railway?—Yes.

Where do you consider the best areas of timber country on the Eastern goldfields are?—South of the Eastern railway from Bulla Bulling to Kanowna very little timber country has been cut out, and I consider this area to be quite equal to, if not better than that country now being operated on to the north of the Government railway. There are exceptionally good forests in the Gnarlbine district, and on and around the property of the Hampton Plains Company.

What is the timber like in the north and north-west of Kanowna?—There are several good belts, but it is more patchy than in the districts to which I have just referred.

Do you consider there are good supplies in the Southern Cross mining district?—Yes; especially in the neighbourhood of Blackburn's and Parker's Range.

What are the timbers that prevail over the areas referred to?—Salmon gum, gimlet wood, box, mallee, sheoak, and mulga.

With reference to the North Coolgardie, Mount Margaret, and East Murchison goldfields?—The timber is practically confined to mulga. The best patches in this country would not carry more than 50 per cent. of the amount available farther south.

Are there any firewood tramways in these districts?—The Gwalia Company's tram extends about eight miles south-west from Gwalia into about the best firewood country in the northern goldfields.

How do the other mines get their supplies?—By carting.

Has any provision been made for timber reserves for local mines?—Yes; areas have been reserved around most of the mining centres for local use. The Timber Tramways Application Board, in considering applications for tramway concessions, are careful to recommend suitable reserves for local use.

(The witness retired.)

The Commission adjourned.

MONDAY, 23RD NOVEMBER, 1903.

Present:
Mr. N. J. MOORE, in the Chair.
Mr. R. Hastie, | Mr. W. V. Fitzgerald.

(AT KALGOORLIE.)

5

Mr. Henry Nelson, sworn and examined.

To the Chairman: I am the general manager of the Westralia Timber and Firewood Company. The company was floated on 1st November, 1902. We commenced operations on the 20th November. Our plant consists of one locomotive, 15 wagons, and two water tanks. We have 15 miles of railway down, and expect to extend the line as required. We pay, approximately, £800 per mile for our completed 10 tramway, made up as under:—Clearing, laying, and forming, £80; rails and fastenings, £600; sleepers (condemned by the Government), £120. We had to lay nine miles of rails before we commenced cutting. Our line runs in a N.N.E. direction from Kanowna. We applied for permission to lay the tramway under Section 8 of the Land Act Amendment Act, 4th April, 1902; and we pay a license fee of £2 per annum per mile. No timber leases are granted on the goldfields. Some 150 men are employed in connection with our business. We pay for the wood delivered on the trucks. As a rule, each man is allotted a frontage to the line of three chains by a depth of 80 chains; and our lines are laid out in such a manner that it does not necessitate more than one mile of carting. We pay, delivered on trucks, 6s. 6d. per ton. The carters get 4s. per ton, 1s. 11d. goes for carting, and 7d. for loading. Our daily output is about 160 tons of firewood, besides a considerable amount of mining timber. The principal timbers found in the vicinity of our operations are salmon gum, gimlet, and mulga. As a rule, the firewood supplied is 5ft. long with a minimum thickness of three inches and a maximum of 10 inches. I consider that mulga makes the best fuel. I anticipate that our output will increase next year. We supply the Kalgurli and Associated mines, in addition to the local mines at Kanowna and local household firewood merchants in Kalgoorlie. We cut out the timber suitable for mining purposes before throwing open the areas to woodcutters. I consider that in good timber country five tons per acre would be about the average right through. We have cut about 40,000 tons off, approximately, 8,000 acres. We must be in timber country the whole time to secure this average. The standard price for firewood delivered on the mines is 13s. per ton in trucks. I do not consider that the re-growth after the timber country is cut out will be of sufficient importance to ever warrant putting down a railway line in the future for firewood. I think that in 30 considering applications for timber tramways and also extensions and deviations, the Government should be careful to provide that the operations of adjoining licensees are not hampered owing to their areas overlapping. I consider that if the present regulations are insisted upon no hardship will arise.

(The witness retired.)

Mr. William N. Hedges, sworn and examined.

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To the Chairman: I am the managing director of the W.A. Goldfields Firewood Supply Company, and have been about two and a-half years in my present position. The company started operations in 1899. The company was formed for the purpose of supplying the mines with firewood. At the present time we are working under the Land Act Amendment Act, 1902, which provides that all applications for construction of railways shall be accompanied by plans showing the localities of the proposed railways. I consider that the present regulations with reference to spur lines (two and a-half miles) should be amended, and that provision should be made for spur lines to be laid to suit the various belts of timber. There is a Timber Tramways Application Board which deals with all applications for tramways in the district. This board is appointed by the Government, and consists of, I believe:—The Chairman; Mr. Ellis, the inspecting surveyor, who has a good local knowledge and who is eminently suitable; Mr. Kelso, the local forest ranger, who also has the required local knowledge but who, I consider, owing to his position in the department would best serve the interests of the industry in an advisory capacity; Mr. Maughan, the secretary of the Western Australia Chamber of Mines, who has a good knowledge of the timber requirements, and as he is the representative of the consumers it is highly desirable that he should have a seat on the board; and Mr. Cunningham, who is understood to represent the various firewood companies. We had, however, no voice in his appointment. As the consumers are represented by the Secretary of the Chamber of Mines, I consider that the firewood companies should have a direct representative of their interests on the board.

By the Chairman: Does not Mr. Cunningham represent the company?—In my opinion he does not. I have never come in contact with this gentleman.

55

Is not your company the largest supplier of firewood?—Yes.

What is your monthly output?—It varies from 17,000 to 20,000 tons per month.

Do you think the output will increase?—No.

What mines do you supply?—We supply part of the Kalgurli, Associated Northern, Great Boulder, and Hannan's Star, two-thirds of the Perseverance, part of the Lake View, and Ivanhoe. The Horseshoe 60

and Boulder Main Reef wood is also supplied from our line. Some of the wood for domestic use also comes along our line. We have five locomotives, 25 wagons (including water), and 13 tanks. We use Government wagons as well for haulage. We have about 50 miles of rails laid, and 40 miles of telephone line. We buy our sleepers from the Government and from private contractors, and use jarrah sleepers only. About 450 men are employed in connection with our contracts. We do not supply much mining timber. We cut white gum, salmon gum, scrub morrell (red wood), and gimlet wood—all eucalyptus. I consider that the average country we have cut over will not go more than two and a-half tons per acre. Of course this only applies to timber belts that are worth following. Very large areas exist on which no timber is to be found at all. Speaking of the country with which I am acquainted on the fields, I do not consider more than 25 per cent. carries timber. I have noticed during the last three years that the seedlings are making good progress; and I noticed on the telegraph line between Coolgardie and Kalgoorlie that trees which must have been grown during the last 10 years, have attained a growth of 14ft. in height, and four inches or five inches in diameter. A good example of the re-growth of the young timber is to be found between Coolgardie and Kurrawang. I consider that we have cut over at least square miles. The average price of wood delivered on the mines is 13s., which I consider ridiculously low, and it is only by very careful management that it is possible to supply at this price. We are taxed in a good many different ways: firstly by a license fee of £2 per annum per mile of railway, and we are now paying for 100 miles; secondly the local roads board levy a rate amounting to £150 per year, and then, in addition, we pay a wheel tax of 10s. per pair of wheels. One of the heaviest taxes is the charge of 6d. per ton for the use of Government trucks. In addition to this we pay 2s. for each four-wheel wagon for shunting into the different mines' sidings. The amount paid on that item alone during the last two years has amounted to nearly £6,000. Of course, in addition, we have to pay the usual Government rates for freight. Water is supplied to the mines at 5s. per 1,000 gallons. We have to pay 7s. per 1,000 gallons for 300,000 gallons monthly, and 5s. per 1,000 gallons for anything over that. We use 500,000 gallons monthly. This is most unreasonable, more especially as the department have been put to no expense since we put down our own mains, and supply the people at Kurrawang, and, outside of a few of the big mines are the largest consumers on the fields. We are entirely a local company, the whole of the shares being held in Western Australia. I consider that if this company had not been started by Messrs. Smith, Timms, and Robson, the mines would have experienced great difficulty in securing cheap fuel, and their development would thus have been retarded.

(The witness retired.)

Mr. J. Coghlan, sworn and examined.

To the *Chairman* : I am managing director of the Kalgoorlie and Boulder Firewood Company. I have been in this position about one year and eight months. For two years previously I was general manager of the W.A. Goldfields Firewood Supply Company. I have been four years on the goldfields. Our present line branches from the Government line at Broad Arrow, and we run 19 miles into the bush. We started cutting at six miles 50 chains. The first portion of the line runs through the State forest, Broad Arrow. We have two locomotives, one portable engine for household firewood requirements, one travelling water tank, and 45 horses and drays. We employ approximately 300 men all told. Our weekly output is about 2,400 tons, principally supplied to the Kalgoorlie and Boulder mines; in addition to which we supply the Government railways from Leonora to Coolgardie. I think the output will be maintained. The standard price is 13s. per ton, and I think the prices will not alter during the next year, because we are able to pay the cutters a fair wage and yet have a fair profit. Our bush is not the best, and it is not equal to a Kurrawang bush. The principal timbers we cut are salmon gum and mulga, but there is a large quantity of oak which the mines refuse to buy, although for steaming purposes I consider it is the most economical, judging by experiments made at Kurrawang. Exclusive of oak, I think our bush would go about two tons per acre. We do not supply any mining timber.

The following are a few figures taken from an estimate of timber country traversed by me some four years ago with reference to a supply of firewood to the mines on the Eastern goldfields:—Taking 50 Kalgoorlie as a centre, and working 60 miles north, south, east, and west, would give 120 miles square at an average of 30cwt. to the acre, or 960 tons to the square mile would give the tonnage of 13,824,000 tons. Putting the consumption at 2,000 tons a day for 365 days of the year, the goldfields would have a supply of fuel for 18 years; deduct the past four years' consumption and you will have left about 10,000,000 tons, or, say, a 14 years' supply. But now that the Coolgardie water scheme is in operation, 55 and there are not any condensers in use in the Coolgardie, Kalgoorlie, and Kanowna districts, it is safe to say there is a 16 years' supply. I have always maintained, and I see no reason to alter my opinion, that these goldfields are most fortunate in having such a quantity of good fuel within such a close distance and at such a reasonable rate. Taking labour at the present rate, which I think is about a fair thing, and the Railway Department to run the firewood at, say, 1s. 2d. per ton per mile, I think the price of 60 wood would not go above 15s. 6d. per ton.

The following figures work out the labour in the different branches:—

	Cutting	13,824,000 tons at	4s.	...	...	...	..	...	...	...	£2,764,800
	Carting	do.	1s.	...	...	...	...	...	...	...	691,200
	Loading	do.	7d.	...	...	...	...	...	...	...	403,200
65	Tramways	do.	3½d.	...	...	...	...	...	...	...	201,600
	Running	do.	6d.	...	...	...	...	...	...	...	345,600
	Supervision	do.	6d.	...	...	...	...	...	...	...	345,600

	£4,752,000
Revenue to Government by railage at mean distance, 2s. 6d. per ton . . .	£1,728,000

Since this estimate was made I have had four years' experience in the trade, and I do not consider I have over-estimated in any way. We get our water supply from the Broad Arrow dam at present. I have taken an interest in the growth of the young timber, and consider that for the first year or two the growth is more noticeable, but I do not think much timber will be derived from the seedlings. At the present time a considerable amount of small timber is left standing—timber under about five inches at three feet from the ground. We pay 4s. per ton to the cutters. An average cutter can make 14s. per day of six hours. I consider that a firewood cutter on the fields is 4s. per day better pay than the faller on the coast, working eight hours per day. I do not think it costs a man on the fields more than 2s. 6d. per week in excess of what he would have to pay for his food on the coast. I do not consider that after the timber has been cut out it would ever pay to put in a tram line again. We have cut out about 60 square miles of country for 80,000 tons of firewood, or two tons per acre. We run over 26 miles of Government railway at the rate of 1d. per ton per mile, and pay 4d. per ton for shunting charges, and for hire of trucks 3d. per ton up to 25 miles, the total payment to the Railway Department being 2s. 9d. per ton. I think if the Railway Department charged $\frac{1}{2}$ d. per ton per mile they would make a handsome profit. We estimate our running expenses at $\frac{1}{4}$ d. per ton per mile. I consider an efficient officer of the department should be appointed to see that the bush is cut out in a systematic manner, and that no isolated patches are left. I consider that the present license fee of 1s. per month is altogether too low, as the revenue derived from this source cannot be sufficient to pay the official whose duty it is to collect the same, and that the companies should be responsible for the men's license fees. What is required in this district is that an officer with a knowledge of surveying should be appointed. He would be capable of setting out our tramways so that different applications would not clash, and he would be able to point out when we are in danger of crossing into a reserve, and to generally advise us.

(The witness retired.)

Mr. Alexander Porter, sworn and examined.

To the Chairman: I am Secretary of the Kalgoorlie and Boulder Firewood Company. I have 25
heard Mr. Coghlan's evidence, and can corroborate it. The financial department is my particular
business, and I would like to give a few particulars of the cost and wages, so that the Commission may
understand into what a large industry the firewood supply has developed. Our wages for ten months of
this year amounted to £30,082. We have paid in railage during the same period over £12,000, and our
output for that time was 81,000 tons. Horse feed has cost us £2,500. Our company is a purely local 30
one, the whole of the shareholders, with one exception, being resident on the fields. We supply in part
the Lake View Consols, Ivanhoe, Perseverance, and the Associated; and in whole we supply the
Kalgoorlie Electric Power and Lighting Corporation, Golden Link, Lake View South, and Oroya-Brown
Hill.

(The witness retired).

Mr. Edward Johnston, sworn and examined.

To the *Chairman* : I am a general storekeeper and contractor, of Lake Side, Mount Malcolm, and Sons of Gawlia, and I have been a resident on the goldfields for 10 years, having been over practically the whole of the fields, and possess a good knowledge of the country carrying timber. In my opinion the finest belt of timber lies from Lake Side to the Santa Claus mine (south-east), a distance of 50 miles. It has a width of 25 miles, and averages about four tons per acre. This timber is principally salmon gum. The best mining timber on the fields within 60 miles of the Government railway is found on this belt. Another good belt lies between Lake Side and Widgiemooltha to the south, and this should go about $3\frac{1}{2}$ tons per acre. To the north-east of Kanowna, in the direction of Edjudina, for 50 miles, one would go through fair timber for a distance of 40 miles. This would average 3 tons per acre, and is principally mulga. North of Broad Arrow one can go for 50 miles through fair timber country carrying $2\frac{1}{2}$ tons per acre, the northern portion of this belt being exclusively mulga. The country lying to the west of Broad Arrow, in the direction of and beyond Siberia, carries real good salmon gum, and should average 3 tons per acre. I am of opinion that there is within a 60 mile radius of the Golden Mile at least 15 years' supply, taking the present consumption as a basis.

(The witness retired.)

The Commission adjourned.

TUESDAY, 24TH NOVEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.

Mr. W. V. Fitzgerald.

(AT KALGOORLIE).

Mr. Edmund Kelso, sworn and examined.

486. *By the Chairman:* You are a forest ranger on the Eastern Goldfields?—Yes.
487. What is the extent of your district?—From Southern Cross as far northward as the Broad Arrow district. It has never been clearly defined.
488. What are your duties?—To attend to the regulations in regard to the cutting of timber; to open up new areas and belts; to facilitate the cutting of timber near the mines, as well as looking after the necessary reserves and trying to promote forest conservation.
489. In addition to your duties as a forest ranger, you hold a position on the Timber Tramways board?—Yes; I am a member of the board.
490. What is the constitution of that board?—It was originally constituted as follows:—One member representing the Government; one member representing the timber cutters; one member representing the Chamber of Mines, and another member representing the companies.
491. Since its formation you have been continuously on the board?—Yes.
492. How long has the board been in existence on the fields?—Since the 1st of January, 1900.
493. You have been three years in the district?—Yes; I am in my fourth year.
494. Have you had any previous experience in forestry matters?—I have been connected with timber cutting mostly. I have never had any practical experience in forestry conservation, except what I saw in Europe.
495. What part?—In the south of France and in Italy.
496. Practical experience or observation only?—Practical experience.
497. And since you have been in this State have you had any experience in timber matters?—Yes; down below in the South-West. I was there connected with one of the mills on the coast.
498. I suppose that one of the principal duties you have to perform is the collecting of licensing fees?—That is one of the duties.
499. Will you give us your opinion in reference to that?—Personally, I find that if it were not for the timber tramways it would not pay to collect the licenses.
500. What is your idea as to the licensing fee?—Monthly licenses are ridiculous. I should prefer annual licenses.
501. What do you consider a fair price?—Say, 20s. for an annual license.
502. That would mean 1s. 3d. per month?—Yes; 1s. 3d., as against 2s. 6d. Under the new Act, I might state, the possession of a miner's right gives most drastic rights in regard to the cutting of timber. Holders may go on Crown lands and take any timber they may require for mining purposes.
503. Do you consider that firewood would come under the heading of "timber required for mining purposes"?—It has been so construed. Under these miners' rights the holder can go and cut timber without an ordinary license.
504. In reference to the royalty system, do you think if that were adopted that trouble would crop up in the collecting of it?—Well, of course, the royalty would have to be applied for. I do not think it practicable.
505. But the whole of the firewood supply for Kalgoorlie and Boulder comes over the railway?—Yes; there would be no trouble in collecting that.
506. What percentage of the whole amount of fuel consumed on the field goes over a Government railway?—Roughly, three-quarters.
507. Not more?—I am taking this Kalgoorlie and Boulder belt as against the whole of the field.
508. The Kanowna supply is brought in by rail, is it not?—No; they are still getting it in from the bush. I have a record for the various fields. From the North-East Coolgardie goldfields (that is the Kanowna field), about 16,800 tons. All of these outlying fields have been decreasing. I know that at Southern Cross there was about 12,000. Southern Cross is 12,000 tons per annum.
509. *By Mr. Fitzgerald:* Will you give us any other list?—Yes. Broad Arrow goldfield, 4,800 tons; say, 5,000. Those are all the goldfields. I do not take in Menzies.
510. But you have not given this district?—Oh, that is 375,600. These are my latest figures:—Yilgarn goldfields (that is Southern Cross), 10,300; Coolgardie goldfields, 28,720; East Coolgardie (that

is Boulder and Kalgoorlie), 375,600; North-East Coolgardie (that is Kanowna and district), 16,800. I have Broad Arrow queried at 9,000. Menzies I have got at about 25,000. Of course this latter does not come in my district. The total consumption would be about 465,420 tons. This return was made on the 26th October, 1903. Now I have the prices paid in the different districts. They are as follows:—Coolgardie area, 9s. 8d. to 14s. per ton; Southern Cross, 8s. 7d. per ton; East Coolgardie, 13s. per ton; North-East Coolgardie, 10s. 7d. per ton; Broad Arrow, 12s. per ton, and 11s. for the outlying districts; Menzies, 12s. per ton.

511. *By the Chairman:* That practically comprises the whole of the centres?—Yes.
512. Is there any firewood within the East Coolgardie-Hannans belt?—Practically none. Some people go out and get in a load or so; but no firewood worth mentioning is brought into the mines.
513. Have you formed an estimate of the total amount of firewood that has been consumed on the fields?—Of course there are no reliable figures previous to 1900. In that year the roasters began to work; and before that the firewood industry was very intermittent.
514. Can you give us an estimate of the amount of firewood consumed during the last three years: since you have kept a record?—Yes; 1,317,050 tons.
515. What area of country do you estimate that that timber was cut off?—About 42 square miles.
516. Give it to us in acres?—About 220,000 acres.
517. Then that would be on an average about six tons to the acre?—Yes.
518. In making out an estimate, what do you generally consider a fair average?—Five tons to the acre, and others four and a-half. It should be remembered that this first lot was mostly taken from off railway sidings down the line, and of course was cut in rather picked country.
519. What proportion do you consider the timbered country bears to the whole area within a radius of 60 miles of the Hannans Belt?—I am prepared to say that a third of it is not timbered country.
520. You think that two-thirds of it is timbered?—Yes.
- 520A. What in your opinion is the present rate of consumption? How many years available fuel is there?—Under the present timber reserves in existence and applied for, there is about eight years. Of course I am not taking outlying centres.
521. Eight years only?—Yes.
522. Under the present tramways applied for?—Yes.
523. But cannot they extend? I mean to say up to their mileage. What is the consumption of firewood at the Boulder mines?—Up to 380,000 tons per annum is consumed, and there is about eight years' supply within the zone of operations of the timber tramways.
524. Is that on the railway side of the line?—Yes. Including Hampton Plains estate and excluding all declared reserves, there are approximately 4,500,000 tons of timber. That would represent a full 12 years' supply, bringing the total fuel supply up to 20 years.
525. In reference to the timber tramways, have you any suggestions to make, or do you think they give satisfaction?—They are satisfactory. Still, the mode of application is not satisfactory.
526. Give us the mode of procedure in making an application?—A man applies for a tramway in a certain locality to the Minister for Mines. It is advertised in two issues of the local paper circulating in the district, and a notice is posted on the warden's notice board. The application is accompanied by a plan, very rough plan indeed. Most of these people advise me of their application in my capacity of forest ranger; and in my case I show them where the best timber is. Then the Minister forwards the application to the board for their report. A meeting of the board is held, and the application is considered. In some cases the board make a point of going over the ground. They make certain recommendations, and these are forwarded to the Minister.
527. Are these recommendations of the board so carried out?—Not in every case.
528. Can you give us any instance of where a recommendation has not been acted upon?—In the case of an application made by W. E. Prince, at Ubini. In this case a prior application was considered by the Minister without referring the matter to the board for their consideration.
529. In that case the application was considered without any reference whatever to the board?—Yes.
530. What was the result eventually?—The Minister's recommendation was acted upon.
531. Are the objections to any applications for a tramway deposited with the board, or with the department in Perth?—The regulations state that the objections should be sent to the Minister in a registered letter.
532. Are you asked to report on these applications? Are these objections forwarded with the application?—With the complete file.
533. Do you consider that the lines should be pegged out before the application is sent in?—Yes.
534. Why?—The application now made is so very vague, being given only in an approximately general direction, that it is difficult to locate the line of ground.
535. Do the timber tramway people find any difficulty in determining whether or not they are on a reserve?—I generally go with the Kurrawang people. I have always done it. I pick out the reserve and affix calico notices to define it.
536. You pick out and place the reserve?—Yes.

537. By *Mr. Fitzgerald*: Only in the case of the Kurrawang Company?—If it is necessary and there is any risk, I do it for everybody.

538. By *the Chairman*: Otherwise the reserve is surveyed?—Yes.

539. Do you wish to make a statement with reference to the permanent reserves around declared townships?—Yes; I consider the present system unworkable. A reserve is declared around a rising townsite; it becomes necessary for the prospectors and pioneers of the district to obtain their mining timber from the nearest point; and the prevention of their cutting timber on this area would be a severe restriction on prospecting for gold. A suggestion I should like to see given effect to is the adoption of the commonal forest areas system.

540. By *Mr. Fitzgerald*: As in France and Austria?—Yes.

541. By *the Chairman*: How many men are employed in connection with the firewood industry on these fields?—There are about 1,000 directly employed.

542. How many of that 1,000 are actual woodcutters?—The numbers vary from 375 to 420.

543. Do you base your calculation on the number of licenses issued?—Not exactly. I go by the number of men along the line. I took a list of these in July, when I made a report on each tramline.

544. What do you estimate as a fair average day's work for a man?—They cut anything up to four tons.

545. How much per ton do they get?—4s. Some make £1 a day.

546. What revenue does the State receive?—Three-sixteenths of a penny per ton.

547. Under a farthing per ton?—Yes. It is only the cutters' licenses, at that rate.

548. What is the total revenue received by you from licenses?—It varies considerably. Last month it was £17 17s., and this month it was £7 6s. There were 360 men along the Kurrawang line last month cutting wood, and this month there are only about 130 odd. One hundred and thirty odd should give a revenue of £6 10s.

549. What revenue does the Forest Department get?—I can ascertain that later on.

550. What would be the annual revenue if a royalty of one penny per ton were charged?—It would produce £1,610 12s. per year. That is taken over the timber tramways only.

551. What do you consider the cost of supervision, including administration?—£339 per annum.

552. Most of these men are employed as sub-contractors?—Yes.

553. What is the method of allotting areas to these men?—Well, along the timber tramways a block is assigned to each sub-contractor, ranging in size according to the number of horses he employs. These blocks are again subdivided into blocks of about three or four chains, with a frontage to the timber tramway. Parties of cutters (generally two or three) are assigned sub-blocks, with instructions to cut the block out clean to a depth of one mile, and are paid at the rate of 4s. per ton. The contractor carts the wood into the tramline, loads it on the trucks, and delivers it to the company at the rate of 6s. 3d. per ton. When the lead is a mile and a-half the sub-contractor gives 6s. 6d. per ton right through. The sub-contractor makes a profit of between 4d. and 5d. per ton.

554. Do firewood cutters' licenses give the holders the right to cut mining timber?—Well, the present regulations are very much mixed on that point. There is no definite rule. But there are some new regulations that have been proposed during the last two years, but which are not in force. They propose the levying of a 5s. tax on all mining timber.

555. What is the procedure in the case of a breach of any of these regulations?—We take the usual police court proceedings.

556. What is the penalty in the case of a man cutting without a license?—A stipendiary magistrate will fine him up to £5, and honorary magistrates about 5s. It generally does not compensate the department for the trouble they take in the matter.

557. Does not a conviction carry costs?—They will not allow me costs personally.

558. Do you know if the Forestry Department derives any benefit from these fines?—Absolutely none; and if we lose a case we have to pay costs.

559. What are your views on re-forestation on the goldfields?—I should first of all like to see this system of desuckering thoroughly carried out. I consider that a sum should be provided for making reliable experiments. At the same time, some attempts at plantation should be made.

560. With reference to this desuckering, do you know of any area suitable for that purpose?—I should suggest that after a spur on a timber tramway has been pulled up, an area should be desuckered and declared a reserve, with most stringent regulations for cutting on that area. The sidings along the Eastern Railway (the old wooded sidings) would suit nicely. Desuckering could also be carried on.

561. What suitable areas are there?—There are many.

562. Give an example?—There is one east of Coolgardie, one north-west of Coolgardie, and two along the railway line between Bulla Bulling and Coolgardie, that would make excellent places. About two or three miles should be set apart for this purpose.

563. What kind of timber grows there?—Mostly gum.

564. What method of desuckering would you favour?—I should like to see the butt-gang system adopted. Send men out into the bush to desucker. Their operations would have to be supervised and their work passed.

565. By *Mr. Fitzgerald*: Have you any idea as to what extent you would desucker?—I should call out according to size of the butt, which should be fixed by regulation.

566. Have you any idea as to what it would cost to desucker a square mile of country?—I have spoken to men on the subject, and it depends greatly on the growth. On certain areas it would cost from £30 to £60 per square mile. It depends very much on the strength of the growth.

567. Well, we will suppose that this system was adopted, how long would it be before the timber would reach a sufficient size to be of commercial value?—At the old Woolgangie condenser, where timber was cut down in 1893 and 1894, in cases where only one sucker survived, there are now trees about 18 inches in girth. I find that where they have been desuckered the growth increases in the first year from four to five inches.

568. In reference to planting, have you gone into that question?—Only roughly.

569. Have you any suggestions thereon?—I should like to see an area set apart to be used as an experimental station.

570. What timber would you recommend?—I should like to see blue gum tried, and I should certainly like to see gimlet. It is fairly quick of growth in the early stages and very suitable all round.

571. Have you received any trees from the State nursery at Hammel?—Yes; but I had no provision for protecting them. We had sugar gum, acacia, etc. Robina was the most successful.

572. What about the sugar gum?—The bark was eaten up by borers, and the tree eventually died.

573. What kind of a tree do you think most suitable for growing here?—I like the gimlet wood.

574. Is not it subject to the attacks of the borer?—Yes; but it seems to thrive better than others.

575. The borer does not confine its attacks to one tree only?—It does not confine itself to any special tree. I should like to make a statement in reference to the trees sent up by the Forestry Department to the various municipalities. These trees in a great many instances do not receive a fair trial. The municipalities sell many of them, and the Forest Department gets nothing whatever for them, not even a reasonable account of how they are progressing.

576. By *the Chairman*: Do I understand that the municipalities and road boards sell them?—That is quite true.

577. Have you reported this to the department?—I believe Mr. Richardson, the secretary, had some conversation with the Minister on the matter; but I believe nothing came of it.

Consumption of firewood as per return dated 26th October, 1903.

Coolgardie	...	...	...	28,720 tons from	9s. 8d. to 14s. per ton.
Southern Cross	...	...	...	10,200	" 8s. 9d. "
East Coolgardie	...	...	...	375,600	" 13s. "
North-East Coolgardie	...	...	...	16,800	" 10s. 7d. "
Broad Arrow	...	...	...	9,000	" 12s. "
Menzies	...	...	...	25,000	" 12s. "
Total	...	...	...	465,420	

(*The witness retired.*)

Mr. William Edgar Prince, sworn and examined.

578. By *the Chairman*: What are you by profession, Mr. Prince?—I am an engineer.

579. What is your position at present?—Engineer for the W.A. Goldfields Firewood Supply Company.

580. In that connection you are responsible for the laying down of the company's tramways?—Yes.

581. Have you long been a resident of these fields?—About three years.

582. How far distant from Kalgoorlie is the point on the main line where your line branches off?—Eight miles.

583. At Kurrawang?—Yes.

584. How far into the bush do you go at the present time?—About 48 miles.

585. That includes all your branches?—Yes.

586. How long is the main line?—It is hard to define. As a matter of fact they are all spur lines. There are none down for any great length of time. The first 30 miles you might call main line.

587. Are you in fairly good bush?—Yes.

588. What estimate do you give to the acre?—You mean timber country.

589. Yes; the timbered portion?—Well, I should say that if you take the timbered country along with the other there is about 2,000 tons to the square mile.

590. That is three tons to the acre?—Yes; or 1,920 tons to the square mile, to be exact.

591. What is the proportion of timbered country to the whole?—Taking a belt of country 60 miles square, with Kalgoorlie as its centre?

592. Yes. What proportion of that country would you call timbered?—Without having regard to its being cut out?

593. Yes; as it is at the present time?—Well, about 10 per cent. of that might be considered timbered country at the present time; that is, exclusive of reserves.

594. And you think 10 per cent. would carry three tons per acre or more?—Well, I suppose there would be about three tons to the acre. Of course that gives me a very rough idea. It would not be a very hard matter to get a map and trace the proportion. Within 30 miles of Kalgoorlie there is a terrible lot of timber gone off. Originally I consider 50 per cent. of this country was timbered.

595. And what do you consider that portion averaged?—About three tons. I think that is a good average.

596. At the present rate of consumption, how many years' supply can you see within the zone of your operations?—Of the Kurrawang Company's operations?

597. Yes?—Well, of course, that would depend on various things; but I should say from three to four years.

598. That is, by extending your lines?—Extending the lines, of course, to the areas we know of and exclusive of reserves.

599. Have you formed any estimate as to what you consider the life of the firewood supply on the fields?—No; but I have thought that that should be done. A careful estimate should, I think, be carried out. That means going into the matter pretty closely.

600. It would not be a very expensive matter?—No. If it were done by a compass traverse it probably would not be difficult to arrive at the quantity of timber available.

601. What timber predominates in your area?—Gum. We have practically nothing else.

602. No mulga?—No.

603. Which timber do you think gives the best results as a fuel?—I think there is very little difference; but, of course, the fact of the mines excluding oak may be considered sufficient evidence of its unsuitability. They will not take oak at all.

604. Is that prejudice merely, or the result of actual experiment?—Well, I think it is mostly the result of experiment; but I think that oak thoroughly dried is not a bad fuel. In places where they object to oak, if you can supply them with oak that has been cut for a considerable length of time, they will oftentimes take it; but they will not stand it green.

605. Does your company supply any mining timber?—No. What we do is this: the logs that will not split readily we send in as mill logs. About half-a-dozen trucks a day of mill logs would supply the whole of the mines in the Kalgoorlie belt.

606. Are these cut up by local mills?—Yes; nearly all have small benches. The salmon gum is a very suitable timber for using underground as passes. It does not wear away like coastal timber, and it gets a glassy surface.

607. Is it a very expensive matter laying tramways down in the country by your company?—No; not very, provided that due regard is taken in locating the line.

608. What would be the worst grade on your line?—About 1 in 100.

609. With the load?—No; against the load. We have steeper grades with the empties.

610. What is your average train load?—About 55 wagons.

611. What do they carry?—Six tons; one bogie equals two ordinary trucks.

612. What class engine do you use?—About a Class G. We have one locomotive (the "Kurrawang") which is just on a par with a Class G.

613. What are your rails?—Forty-five and 46½ lbs. per lineal yard.

614. And your sleepers: do you purchase old ones or do you buy new?—Lately we have been taking many of those relay sleepers.

615. On the Eastern line?—Yes.

616. And do they give satisfaction?—Yes. They are perhaps not heavy enough for Government.

617. What weight are the Government sleepers?—94½ lbs.

618. Do you think that the present procedure in making application for timber tramways is giving satisfaction?—Through the Mines Department?

619. No; through the Lands Department?—I have never heard of any dissatisfaction.

620. Are you now making an application for a tramway?—No.

621. Why not?—Because the Minister refused a recent application of mine without giving any fair reason. I understood that there was a prior application. There is one thing, however, that I should like to draw your attention to, and that is the creation of these reserves. Some of them are marked off without sufficient judgment having been exercised. The Balgowrie reserve, for instance, contains enough to supply the whole of Kalgoorlie for a considerable time; and I think there is far more timber there than is warranted by the mines in the locality. That timber will never go to Kalgoorlie; because the Kanowna country is cut out, and nobody would ever think of laying a road into a single belt. I think more care should be observed in defining these reserves. Due regard should be given to the quantity of timber that the mines in the vicinity are likely to require.

622. You think that, in many instances, if these reserves were made parallel to the railway line, they would be more suitable?—Yes. The great mistake that has been made with regard to the local reserves is that in very many cases they were declared after the forests had been denuded.

623. Have you made any observations with reference to the regrowth of timber?—Well, I cannot say exactly what wood is coming up; but there is a lot of suckers showing.

624. Any seedlings?—Yes. And the regrowth from the old stumps depends entirely upon the season of the year the timber was cut.

625. What season of the year do you consider most advantageous for securing regrowth?—Just before the summer is coming to a close. The sap is then down, and shoots will spring from the stump and will not be killed by the rays of the sun.

626. Really then, the best time would be about May?—Yes. The shoots will then be enabled to get a good start, and a good chance to grow.

The following are the Gazetted Forests Reserves on the Eastern Goldfields, 20th November, 1903.

Goldfield.	District.	Area, square miles.	Approximate, say, in tons.	Annual consumption.	Equal to year's supply.	Remarks.
C. ...	Balgarri ...	10	25,000	100	250	Timber tramway applied for
C. ...	Burbanks ...	60	10,000	7,500	1	
C. ...	Do. Extension	30	160,000	do.	...	
B.A. ...	Broad Arrow ...	306	350,000	Mostly supplied from tramway
N.E.C. ...	Bulong ...	155	300,000	5,000	60	
C. ...	Cashmans ...	66	130,000	Very little timber used District only in prospecting stage
N.E.C. ...	Edjudina ...	80	190,000	...	...
E.C. ...	Feysville ...	14	9,000	900	10	Mines deserted
C. ...	Gibraltar ...	15	30,000	...	...
N.E.C. ...	Gindalbie ...	65½	150,000	3,000	50	
C. ...	Jourdie Hills ...	51	100,000	3,100	33	Only a few small mining props used Not working constantly
C. ...	Gnarlbine ...	9	25,000	...	...
N.E.C. ...	Kalpini ...	108	210,000	1,080	...	
N.E.C. ...	Kanowna	Mines working very intermittently Very little mining going on Mine on tribute From the 434 Mile-post, on the Kalgoorlie-Menzies railway, all timber must go northward
C. ...	Kunanalling ...	211	316,000	5,600	50	
N.E.C. ...	Mulgarrie ...	120, approx.	200,000	3,200 ?	...	
C. ...	Waverley ...	233	400,000	...	...
C. ...	Yerdi ...	54	162,000	1,080 ?	...	
N.C. ...	Menzies	

(The witness retired.)

THURSDAY, 26TH NOVEMBER, 1903.

Present:

Mr. N. J. MOORE, in the Chair.
Mr. W. V. Fitzgerald.

(AT KALGOORLIE.)

Mr. Thomas Maughan, sworn and examined.

627. By the *Chairman*: You are the General Secretary of the Chamber of Mines, and have been appointed by the Executive Council to give evidence with regard to the consumption of firewood and mining timber by the mines?—Yes.

628. What do you estimate to be the consumption of firewood on this field?—I estimate that the present consumption of firewood in this district is 1,200 tons per day of six days per week. That means 7,200 tons per week, or say 360,000 tons per annum. This includes the consumption by the mines on the Hannan's Belt or "Golden Mile."

629. How does that compare with the preceding year?—There is a slight diminution in the consumption due to the dismantling of the condensing plants on the mines since the advent of the Mundaring water.

630. Do you anticipate that the consumption will increase?—I think it will increase inasmuch as several mines are increasing their treatment plants and installing additional roasting furnaces.

631. How are the mines on the "Golden Mile" being supplied with wood?—Almost entirely by rail, the supplies being chiefly drawn from three companies.

632. What are the companies?—The W.A. Goldfields Firewood Supply, Kalgoorlie and Boulder Firewood Company, and the Westralia Firewood and Timber Company. There is still a small amount of wood carted in.

633. Is there a standard price or a contract price?—The standard price is about 13s., and most of the mines are paying that now, which is about 1s. 6d. cheaper than the mines were paying under contract two years ago, namely 14s. 6d.

634. Do you anticipate that under present conditions the price will increase?—That is chiefly dependent upon industrial matters. I understand that at the present time some of the firewood companies have been cited by the cutters to appear before the Court of Arbitration in connection with a claim for an increase in the rates for cutting. It follows that if there is any increase in the rate for cutting, that increase will fall upon the consumers.

635. What is the principal firewood used on the mines?—Mixed gum in this district and principally mulga in the Northern districts.

636. Do you know which particular timber is giving the most satisfactory results?—Salmon gum I should say.

637. Why is oak objected to?—Well I suppose it is because it does not burn so freely, and in consequence would not have the same calorific efficiency as gum.

638. Have the mines you represent made any tests with reference to coal?—Yes; one or two mines have made tests of the relative efficiency of coal and wood fuel.

639. Could you give us the results?—The Great Boulder made a test some time ago and the results they got were that one ton of Collie coal was equivalent to 22 cwts. of wood, and one ton of Newcastle coal was equivalent to two tons of wood, but it has to be borne in mind that the quality of the local coal has somewhat improved since those tests were made, and it may now be taken that one ton of Collie coal would be equivalent to 25 cwts. of gum.

640. What is the cost of Newcastle coal delivered on the mines?—The cost is 23s. 9d. per ton at Fremantle ex ship's slings, or £23 0s. 3d. per ton delivered at Kalgoorlie.

641. What is the cost of Collie coal delivered on the mines?—Taking the price at the pit's mouth at 10s. 6d. per ton, the price at Kalgoorlie (adding freight on 502 miles) is £1 12s. 9d. per ton.

642. No doubt your Chamber has given this firewood supply question a considerable amount of consideration?—Yes.

643. What are their views?—The view taken by the chamber is that the Government should offer encouragement for the building of light timber tramways into the bush, so that both mining timber and firewood, within a reasonable radius, could be made available for the use of the mines. It is therefore highly necessary that permission should be readily granted to applicants for timber tramways. The first concern of the mines is to get this timber as cheaply as possible.

644. Are the Government guided to a large extent by the recommendations of the local Timber Tramways Board?—Yes.

645. Do you consider that that board has sufficient power?—Well, as a member of that board I must say that I have some diffidence in answering the question. (Question not pressed.)

646. You represent the Chamber of Mines on the Tramway Board?—Yes.

647. Who are the other members?—The chairman is Mr. G. W. Ellis (Inspecting Surveyor, Coolgardie), and Mr. E. G. Cunningham (Kalgoorlie), and Mr. Forest Ranger Kelso.

648. Is Mr. Cunningham a nominee of any particular interests?—Not that I am aware of.

649. The various timber companies have no voice in recommending a nominee for the board?—Not as far as I know. I may say with regard to the Tramway Board that the practice has been for the department to refer the papers in connection with any application to the board for their recommendation or otherwise. In several instances the board found that the regulations had not been complied with in regard to the advertising of the application in the local paper and posting at the Warden's Court, and in other cases extensions had apparently been approved by the department without reference to the board, or had been carried out before obtaining the necessary permission.

650. Was not a reason given?—No. After making its recommendations, the board hears nothing further as to whether the recommendation is approved or not. I may add that the prerogative of the board is to conserve the interests of all the mines, and whilst I, as a member of the board, am anxious to see that no restrictions are placed on the cutting of timber required for the large mines in the respective centres, due regard is always had to the requirements of the smaller outlying mines, and ample provision is made to reserve sufficient timber in the immediate vicinity of such mines to meet their estimated requirements for some years to come.

651. With reference to the mining timber, where do the mines draw their principal supplies from?—Round timber for underground work is chiefly procured from the district below Coolgardie, Nangeenan, Doodlekine, and Kellerberrin, whilst a fair amount of suitable mining timber is procured from the firewood companies.

652. Where do you procure most of your sawn timber from?—With regard to sawn timber, jarrah represents the largest amount used of local sawn timber to my knowledge. There is also some business in wandoo, and a considerable amount of Oregon timber is used for constructional work on the mines.

653. Could you give us the price of jarrah delivered on the mines, or do you buy f.o.b. Perth?—Arrangements with regard to the price of timber vary; in fact the several timber people have different methods of grading timber, and that renders it somewhat difficult to make a fair comparison.

654. Needless to remark, it is much higher now?—Yes.

655. How does the price for jarrah compare with what it was in June last year?—The following comparative prices for standard sizes at Golden Gate will give you an idea of the increase:—

Size.	Price June, 1902.	Present price.	Increase.
	s. d.	s. d.	s. d.
10 x 10	20 6	23 0	2 6
9 x 2	20 3	22 0	1 9
5 x 2	19 3	21 0	1 9
4 x 3	19 3	21 0	1 9
4 x 2	19 3	21 0	1 9

656. A considerable amount of Oregon is also used, is it not?—Yes; but it would be difficult to mention specific amounts. Oregon is chiefly used for surface work, although if it were cheaper there would be some inducement to use it for certain classes of work underground. Having a greater elasticity than jarrah, it will carry a heavier lateral strain.

657. What is the price of Oregon at Fremantle?—The price of Oregon at Fremantle is 13s. 6d. to 14s. per 100 superficial feet, free on rails.

658. What is the principal sawn timber used?—Salmon gum. I estimate that 1,000 logs of mining timber averaging 12 inches to 14 inches diameter, about 16 feet long, are used in this district every week, the price varying from 10d. to 1s. 4d. per foot delivered, according to size.

659. What timber do you use principally for poppet legs and where long timber is required?—Jarrah chiefly, although in some instances karri logs have been used for poppet legs. The Golden Link poppet legs, which are 100 feet long, are of karri.

660. Do you find that white ants affect the timber underground?—A little while ago I received a report from a manager to the effect that in inspecting the underground workings of a mine on the Golden Mile, white ants were found in the timbers at a depth of 200 feet.

661. Would the Chamber of Mines be prepared to make a test of some of our other timbers, such as red gum and blackbutt, with a view to seeing whether they would be suitable for mining purposes?—I may say that this matter was submitted to the Chamber by the secretary of the Commission some time ago, and the Chamber then decided to order a truck load—for each of the large mines—of blackbutt and red gum in order to test their utility and suitability for underground work, and this order is being prepared.

662. Have you any information showing the amount of timber used by any mines outside the Golden Belt?—Yes. The following statement showing the estimated amount required by the Westralia Mt. Morgans mine may prove of interest:—

Statement showing Quantity of Western Australian Hardwoods used on this Mine during 1901 and 1902, and an Estimate of our Annual Requirements in the immediate future.

Class of Timber.	1901.	1902.	Estimate of annual requirements. Lineal feet.
	Lineal feet.	Lineal feet.	
MULGA PROPS (local).			
Small end :—			
4in. diameter ... ..	...	2,000	...
6in. „	2,710	15,000	2,000
7in. „	3,952	257	1,000
8in. „	16,823	12,145	3,000
9in. „	979	107	...
MULGA LATHS (local).			
3 inches at small end and 7 feet long ...	16,446	44,331	50,000
PINE LOGS (local).			
4in. diameter ... ..	...	680	100
6in. „ ... ..	...	819	100
7in. „ ... ..	...	232	50
8in. „ ... ..	...	141	50
9in. „ ... ..	...	335	50
SALMON GUM.			
Small end :—			
6in. diameter ... ..	...	1,155	5,500
7in. „ ... ..	...	4,488	6,000
8in. „ ... ..	...	...	6,500
9in. „ ... ..	...	...	1,500
10in. „ ... ..	...	...	1,500
GIMLET WOOD.			
Small end :—			
4in. diameter ... ..	...	2,158	...
5in. „ ... ..	...	160	...
YORK GUM.			
Small end :—			
8in. diameter	2,226	...	...
KARRI ... ..	...	Super feet. 332	...
JARRAH.			
Sawn	Super feet. 2,121	Super feet. 3,977	Super feet. 10,000

Note re Jarrah.—As soon as the railway line is extended to here, jarrah will be used in place of Oregon for buildings, ore chutes, etc.

Mount Morgans,
10th June, 1903.

For the Westralia Mt. Morgans Gold Mines Coy., Ltd.,
M. P. MORGANS, Manager.

(The witness retired.)

The Committee adjourned.

INFORMATION OBTAINED FROM MR. GODECKE, ENGINEER, AT GWALIA.

The Sons of Gwalia Mine uses about 1,100 cords, or say 2,000 tons of firewood per month, for which they pay 10s. per cord for cutting and 6s. per cord carting. The firewood is brought in 12 miles over a 20 inch gauge tramway by a 10-ton locomotive. About 60 men are employed in connection with the firewood supply, and 300 men on the mine. Mulga is the only firewood available and will not go more than one cord per acre. Most of the timber used comes from Doodlakine and consists principally of gimlet wood and salmon wood. Oregon is used largely for building, about 7,000 feet per month, and a considerable quantity of jarrah. We also use about 4,000 feet of tuart monthly for mill guides, bearings, etc., and it gives great satisfaction.

APPENDIX A.

Result of Test, Hewers v. Millers, held at Mornington Mills, 29th July, 1903.

MILLERS.

Ten logs in the round, containing 30 loads 26ft., produced—

	Lds.	ft.	in.		Lds.	ft.	in.
Sleepers	14	35	4	} = 22 9 9			
Paving	3	6	0				
Scantling and Pickets	4	18	5				

Percentage obtained—

Sleepers	48.164	} = 72.73 per cent.
Paving	10.223	
Scantling and Pickets	14.354	

HEWERS.

Ten logs in the round, containing 25 loads 7ft., produced—

	Lds.	ft.	in.		Lds.	ft.	in.
Sleepers	14	15	8	} = 14 44 6			
Posts	0	28	10				

Percentage obtained—

Sleepers	56.88	} = 57.12 per cent.
Posts	0.24	

Advantage of millers over hewers, 15.51 per cent.

The hewers took 257 hours to produce 307 sleepers, valued at £22 10s. 4d., equal to 1s. 9d. per hour.

APPENDIX B.

Analyses of Barks, made by direction of the Commission, by Mr. S. S. Dougall, F.I.C.

MALLET AND SPOTTED GUM.

	Mallet.	Spotted Gum.
Tannic Acid	22.44 p.c.	36.58 p.c.
Moisture	11.87 p.c.	15.81 p.c.
Tannic acid in moisture, free sample ...	25.46 p.c.	43.44 p.c.

GIMLET.

No. 1, old sample; No. 2, young.

	No. 1.	No. 2.
Tannic Acid	41.98	27.02
Moisture	6.11	4.04
Tannic Acid in moisture, free sample ...	44.71	28.15

APPENDIX C.

Comparison—Coal and Wood.

WOOD.

Taking one cord of wood equal to 35cwt., and one ton of coal equal to 45cwt. of wood, 45cwt. costs £1 16s.

COAL.

	£	s.	d.
Newcastle coal, in slings at Geraldton	0	18	0
Wharfage	0	2	0
Loading from slings	0	0	9
	<hr/>		
Freight to Cue	1	0	9
	<hr/>		
Cost of coal	2	6	6
Cost of wood	1	16	0
	<hr/>		
Amount in favour of wood	£0	10	6
	<hr/>		

APPENDIX D.

Return showing the Quantity of Jarrah and other Timber Exported during the Year 1903.

Country to which exported.	Port from which shipped.					
	Albany.	Bunbury.	Flinders Bay and Hamelin.	Fremantle.	Rockingham.	Total.
	loads.	loads.	loads.	loads.	loads.	loads.
Adelaide ... ..	...	3,559	...	...	...	3,559
Algoa Bay ... ..	...	874	...	158	2,138	3,170
Antwerp	304*	...	...	...	...	304
Bombay ... ..	...	...	...	170	...	170
Calcutta ... ..	...	...	...	7,503	...	7,503
Cape Town	1,148*	10,361†	...	245	186	11,940
Ceylon ... ..	...	2,139	...	...	...	2,139
Chinde ... ..	...	488	...	...	...	488
Colombo ... ..	...	67	...	140	...	207
Delagoa Bay ... ..	...	27,427	...	4,666	26	32,119
Durban ... ..	...	5,898	...	...	...	5,898
Karachi ... ..	...	10,190	...	...	...	10,190
London	8,541*	20,194	3,944¶	5,616	...	38,295
London, East ... ..	...	2,913	...	595	...	3,508
Madras ... ..	...	...	...	1,046	...	1,046
Manilla ... ..	...	2,363	...	200	...	2,563
Mauritius ... ..	...	652	...	...	468	1,120
Melbourne ... ..	...	1,517	...	...	...	1,517
Monte Video ... ..	...	862	...	...	...	862
Natal ... ..	...	1,356	...	...	...	1,356
New Zealand ... ..	...	7,053§	...	...	7	7,060
Quilon ... ..	...	...	544	...	...	544
Shanghai ... ..	...	...	...	782	...	782
Singapore ... ..	...	...	...	400	...	400
South Africa ... ..	...	9,708‡	5,804*	...	...	15,512
United Kingdom (for orders)	828*	...	...	...	...	828
Total	10,821	107,621	10,292(a)	21,521	2,825	153,080

* Karri Timber. † Including 4,567 loads of hewn Jarrah. ‡ Hewn Jarrah. § Including 9 loads of Tuart Timber. ¶ Including 2,319 loads of Karri Timber. ‡ Including 1,218 loads of Karri Timber. (a) Also 67 loads of Jarrah, and 807 loads of Karri Timber shipped to Fremantle.