

D. 24/9/25

1925.

WESTERN AUSTRALIA.

REPORT

OF

THE FORESTS DEPARTMENT

FOR THE

Year ended 30th June, 1925.

BY

S. L. KESSELL, B.Sc., Dip. For.,
CONSERVATOR OF FORESTS.

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

[SECOND SESSION OF THE TWELFTH PARLIAMENT.]

PERTH :

BY AUTHORITY: FRED. WM. SIMPSON, GOVERNMENT PRINTER.

1925.

Forests Department,

Perth, 1st September, 1925.

The Honourable Minister for Forests.

Sir,

I have the honour to transmit, herewith, my Report on the operations of the Department for the year ended 30th June, 1925.

I have the honour to be,

Sir,

Your obedient servant,

S. L. KESSELL,

Conservator of Forests.

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SUMMARY OF PROGRESS.

JULY 1ST, 1924, TO JUNE 30TH, 1925.

- (1) Eleven (11) Working Plans, covering an area of 111,500 acres, have received the approval of the Governor in Council.
- (2) 8,240 acres have been silviculturally treated for the natural regeneration of Jarrah (*Euc. marginata*), on the Group Selection system. On several thousand acres a very satisfactory crop of Jarrah seedlings has already developed and survived one summer.
- (3) 640 acres of Jarrah forest have been treated under the clear felling system, and a satisfactory crop of seedlings and coppice secured which will rapidly develop into valuable timber for mining requirements.
- (4) "Top Disposal Operations" have been carried out over 33,730 acres of Jarrah bush. Hundreds of thousands of Jarrah saplings, poles, and piles have in this manner been saved from destruction or serious damage by fire.
- (5) 965 acres of Tuart (*Euc. gomphocephala*) Forest have been treated on the Group Selection system, with the object of securing natural regeneration, and a heavy germination of self-sown seed has resulted.
- (6) Topographical survey work has been carried out over 296,390 acres, requiring 2,766 miles of traverse.
- (7) Control and exploitation by tree marking on the Group Selection system in lieu of minimum girth restriction has been introduced in eight (8) centres in the Jarrah bush.
- (8) Fire control measures have been maintained over 223,000 acres of Jarrah bush, with a loss of only 1.04 per cent. of the protected areas, although the forest fires reported by Look-out Towers numbered 135.
- (9) 284½ miles of bush tracks and old tramline formations, overgrown and blocked by fallen logs, have been cleared up and rendered fit for traffic.
- (10) Approximately 167,700 pines have been planted on 195 acres, and 306 pounds of seed broadcasted on 73.5 acres.
- (11) Seven new pine nurseries have been established, bringing the total up to fourteen, and in these
 - 350 pounds of *Pinus pinaster* seed, 100 pounds of *Pinus insignis* seed, and 60 pounds of other species have been sown. These nurseries should result in the annual area planted being raised to over 1,000 acres per year within two years.
- (12) 42,060 trees have been distributed at cost price to public bodies and landholders for planting in country districts.
- (13) A complete survey of Mallet Bark resources on Crown land has been carried out, showing that although many small areas of regrowth exist, mature trees fit for stripping have been reduced to a number sufficient to supply less than 500 tons of bark altogether.
- (14) 20,635 acres, carrying patches of mallet regrowth, have been gazetted as Reserves. The work of protection and extension of these areas has been commenced by treating and sowing 135 acres with the seed of Brown Mallet (*Euc. astringens*).
- (15) A close study of the development and parasitism of Sandalwood in low rainfall districts has indicated that the artificial regeneration by the sowing of nuts on the Eastern Goldfields on carefully selected areas may be expected to yield valuable returns. Approximately 25,500 acres of country carrying immature Sandalwood, a considerable area of which appears suitable for sowing, Sandalwood nuts, has been carefully classified. Approximately 780 acres have been sown with nuts, and approximately 1,800 acres fenced for the protection of immature Sandalwood and in order to carry out experiments in artificial regeneration.

The record revenue for the Department for the year of £182,000 may be held to indicate the increasing value of our partially exhausted forests, and the return that they may be expected to yield in future years under proper management. Despite the progress made, work can only be considered in its early stages, and much greater advances are necessary if the devastation caused to the forest resources of the State by over 70 years of practically uncontrolled exploitation is to be overtaken.

MAP

OF AREAS UNDER WORKING PLANS

or for which Working Plans are in course of preparation.

NOT TO SCALE.

REFERENCE.

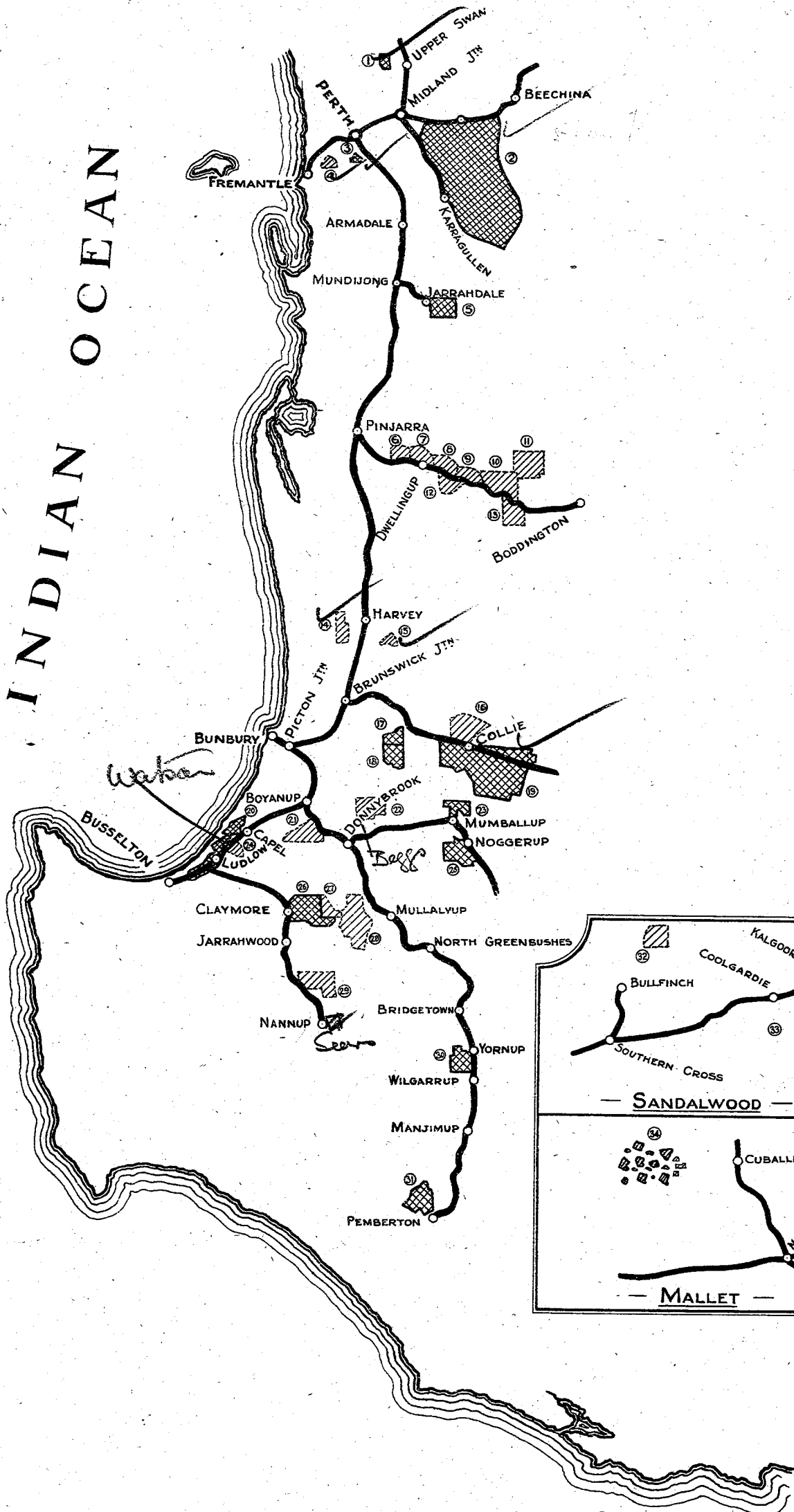
MAP

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Reference No.	Working Plan.	Working Circle.	Species.
1	Working Plan No. 8	Gnangara	Pines
2	Working Plan No. 1	Mundaring	Jarrah and Pines
3	Working Plan No. 10	South Perth	Pines
4	... ..	Applecross	Pines
5	Working Plan No. 15	Jarrahdale	Jarrah
6	... ..	North Marrinup	Jarrah
7	... ..	Dwellingup	Jarrah
8	... ..	Holyoake	Jarrah
9	... ..	Inglehope	Jarrah
10	... ..	Amphion	Jarrah
11	... ..	Wourahming Hill	Jarrah
12	... ..	Plavins	Jarrah
13	... ..	Wuraming	Jarrah
14	... ..	West Harvey	Pines
15	... ..	East Harvey	Pines
16	... ..	Harris River	Jarrah and Pines
17	Working Plan No. 14	Worsley	Jarrah
18	Working Plan No. 13	Potter's Gorge	Jarrah
19	Working Plan No. 3	Collie	Jarrah and Pines
20	Working Plan No. 2	Ludlow	Tuart
21	... ..	Argyle	Pines
22	... ..	Lowden	Jarrah
23	Working Plan No. 11	Mumballup	Jarrah
24	... ..	Ludlow	Pines
25	Working Plan No. 12	Noggerup	Jarrah
26	Working Plan No. 7	Claymore	Jarrah
27	... ..	Upper-Capel	Jarrah
28	... ..	Mullalyup	Jarrah
29	... ..	Sussex	Jarrah
30	Working Plan No. 6	Yornup	Jarrah
31	Working Plan No. 9	Big Brook	Karri
32	... ..	Cowine	Sandalwood
33	... ..	Karramindi	Sandalwood
34	... ..	Cuballing	Mallet

Notes

INDIAN OCEAN



REPORT OF THE FORESTS DEPARTMENT FOR THE YEAR ENDED 30th JUNE, 1925.

I. CONSTITUTION OF STATE FORESTS.

1.—FOREST RESERVATION.

It is a matter of considerable regret that so little progress can be reported on the most important question of the dedication of State Forests. Although increases are tabulated hereunder, progress is deplorably slow. It has been necessary to stress so frequently the need for action leading to the early dedication of prime forest country as State Forests that there is a danger of the matter being treated as an obsession on the part of officers of the Department and having little or no practical importance. On these grounds alone there would appear to be justification for briefly referring to a controversy which arose during the past year in connection with certain Jarrah country in the Bridgetown District. An area of some 11,570 acres, including portion of a "State Forest" under "The Land Act, 1904," and adjoining country which Lands Department officers had some months previously reported unsuitable for settlement, was mapped out during March, 1924, and reforestation operations commenced on a small scale. A Working Plan was prepared and received the approval of the Governor in Council on 30th July, 1924. Some five months later Group Settlers were sent to the area and took possession of blocks which had meantime been surveyed over the major portion of the Working Circle and which included land on which regeneration work had been started. The above particulars are not set out with any desire to re-open the discussion concerning the relative value of this particular land for dairying or forestry, but to illustrate that *forestry, more than any other form of agricultural development, requires security of tenure.*

A close study of Section 2 of the report relating to the timber trade, and the appendices showing the value of Jarrah and Karri exported, is commended to enthusiastic advocates of dairying and intensive culture in the South-West, who can only see in a crop of trees an encumbrance on the land. The £554,000 worth of timber which last year we sent to the Eastern States is a very useful set-off against the £540,000 worth of butter imported from that source. As, however, that region of the State commonly referred to as the South-West extends over at least 8,000,000 acres, and as the area which it is desired shall be dedicated as State Forest is only approximately 2,500,000 acres, there should be little or no conflict of interests. On an area basis there should be ample land for the dairy farmer to produce the amount of butter referred to above, and much more, without encroaching on the limited prime forest region. By early and adequate reservation of forest country the timber industry, which, in addition to supplying the local market, provided an export commodity last year valued at £1,492,000, can

be made a permanent asset; but it must be realised that the railway system in the South-West has been built up almost entirely on the timber industry. In consequence, existing railway lines penetrate into prime timber country and, in many cases, stop there.

It is not sound economic policy for the Forests Department to leave accessible heavily cut-over forest near railway lines and large centres of population and spend public funds on remote forests, merely to avoid raising an issue which must be finally settled sooner or later. The following extract from "A Discussion of Australian Forestry" by the late D. E. Hutchins (page 2) sets out the considered opinion of the most eminent Forester who has made a study of Australian conditions:—

"Not long ago an eminent French forester was showing me on a large-scale wall map the situation and value of the various State forests of France. He wound up a very interesting talk on the subject with this remark: 'These forests,' said he pointing to those near Paris, 'financially are carrying on their backs those others,' pointing to the Alpine forests. It is not that many of the Alpine forests are not much better than those near Paris, but it is the timber on the spot which gives their value to the suburban forests of Paris. Thus, in demarcating forests it may be laid down as an axiom that the first consideration is that of accessibility. Here the want of forest demarcation has hit the Eastern States of Australia severely. Of the four million acres which Victoria has set aside as national forest, not much above a quarter of a million is of much economic use to-day. This position is being rectified, but necessarily at some cost. The softwood forests are being laid down in accessible situations, and some of the accessible hardwood is being bought back. We have seen that Forestry may give employment to 30 men as against one man on sheep, but this is with the proviso that the forest timber is close to its market. It cannot walk 1,000 miles to its market, feeding itself on the way like a flock of sheep, yet this is the popular 'backwood's forest' idea of Australia."

2.—ALTERATION IN AREA OF FOREST RESERVATION.

*State Forests.
Under Forests Act, 1918.*

—	June, 1924.	June, 1925.	Increase.
	acres.	acres.	acres.
Jarrah	47,468	125,735	78,267
Karri	<i>Nil</i>	<i>Nil</i>	...
Tuart	6,091	6,091	...
Other Species	540	2,470	1,930
	54,099	134,296	80,197

The increase in Jarrah is accounted for by addition of 867 acres to State Forest No. 4, Collie District, and the dedication of State Forest No. 7 over that portion of the Mundaring Reservoir Catchment area carrying prime Jarrah forest. The increase in other species is accounted for by the dedication of State Forest No. 8 (Karramindie) for Sandalwood.

Timber Reserves.

Under Forests Act, 1918.

	June, 1924.	June, 1925.	Increase.
	acres	acres.	acres.
Jarrah	4,486	4,486	...
Karri	1,766	1,807	41
Other Species (Eastern Goldfields)	857,174	874,979	17,805
	863,426	881,272	17,846

The increase in Karri is accounted for by dedication of Timber Reserve 61/25, situated west of Eastbrook, Manjimup District.

The increase in Other Species is accounted for by the dedication of Timber Reserve 62/25 (23,100 acres), near Cowine Soak, Bullfinch District, and amendment to Timber Reserve 5/25 (Bendering) by excision of 5295 acres.

II. REVENUE.

(Gross Revenue, £182,764.)

The gross revenue for the year ending June 30th, 1925, shows an increase of £55,511 over the previous year, being an increase of 43.6 per cent.

1.—THE TIMBER TRADE.

No more striking illustration of the special qualities and peculiar merits of Jarrah and Karri among the Eucalypt timbers of Australia may be found than in a comparison of the position of sawmillers in the Eastern States with sawmillers in Western Australia during the past year. While those interested in the hardwood trade in the Eastern States have been appealing to the Tariff Board for increased protection, the Western Australian timber industry has enjoyed a prosperous year.

Overseas sales amounted to 11,844,000 cubic feet with a declared value of £1,478,000. Of this quantity 4,451,000 cubic feet, valued at £554,000, was sent to the Eastern States of Australia. The Union of South Africa has taken more than double the quantity of timber taken during the previous year, and during the year under review has ranked as almost an important market for Western Australian hardwoods as the other States of the Commonwealth. The United Kingdom remains the third most important market and quantities and values both show a slight increase on the previous year. Sales to India have dropped very considerably, so that New Zealand, despite a slight decrease in the total quantity received, now stands fourth on the list. Other countries to which quantities in excess of 100,000 cubic feet have been sent are Ceylon (402,000), Mauritius (204,000), and Belgium (182,000).

While the volume of timber being removed from the forest annually is greatly in excess of the annual increment an increased export trade is not altogether a matter for congratulation. A considerable volume of the trade, particularly in hewn sleepers, represents timber cut from private property and land in course of alienation for closer settlement. The development of motor transport has rendered available a large quantity of timber on private property hitherto inaccessible, and many inexperienced hewers have helped to increase the export trade, but have ruined much valuable timber in the process. It is necessary that a warning be issued. There is no future for this small army of hewers and those persons who have entered the industry with a full knowledge of the provisions of "The Forests Act, 1918," which limits hewing operations under permits issued by the Forests Department over forest country to persons who were engaged in the industry prior to the passing of the Act must be prepared to return to their former occupations when the present boom in hewing on private properties finishes.

The waste of timber in the country is not confined to sleeper hewers, and there is room for considerable improvement in mill practice, despite advances made during past years. The number of sawmills operating on Crown lands during the year under review was 70, and, in addition, 50 mills of a much lower capacity were operating on private property. Despite the tremendous capital invested in the industry there is no Technical School for the training of engineers for the sawmilling industry on the same lines as Technical Schools usually associated with the mining industry. There is no apprenticeship system providing for the training of boys in such highly skilled occupations as "saw filers" and "benchmen," with the result that a benchman learns by experience, if he ever learns, and ruins hundreds of thousands of feet of timber in the process.

With the development of the small mill, the necessity for some control over mill design, gauge of saws used, and recovery of squared timber to be obtained, becomes increasingly important as factors in forest conservation. The day is not far distant when the elimination of unnecessary waste will have to be insisted upon with a view to conserving our limited resources. Of equal importance with the above is the necessity for standardising of sizes to be cut and compulsory grading with the object of getting the best results out of each log instead of trying to cut boards out of sleeper timber and sleepers out of joinery timber as is too often the case to-day. It is hoped that the readjustment of sawmilling practice to meet changing conditions and increased values will be sufficiently rapid to avoid the necessity for the Department interfering in any way, but it remains to be determined to what extent the Department is justified in standing by while timber equivalent to the increment put on by hundreds of thousands of growing trees is being either converted into sawdust or burnt.

122,169 sleepers were purchased on behalf of local Government Railways at a cost considerably below export values. The sleepers were inspected according to standard specifications, but prices were kept to a minimum by reserving certain of the most accessible permit areas for local government requirements.

The value of imported timber (£162,000) shows an increase of £22,000 over the previous year. Certain consolation may be drawn from the fact that an in-

creased demand for softwood is usually held to indicate increased industrial activities and consequent prosperity, but the need for afforestation is apparent.

A considerable quantity of oregon is still used for superstructural work despite the fact that Karri is a superior timber for the purpose. It is pleasing to note that certain architects are now specifying local timber almost exclusively, and if this rule were generally adopted throughout the profession the loss suffered by the State on the importation of foreign timbers for high grade work would be appreciably reduced.

(a) *Concessions and Leases on a Rental Basis.*

(Rents on Concessions, £50; Rents on Timber Leases, £4,060.)

At the close of the year under review there were 12 timber leases and one timber concession (Jarrahdale 12/0) still operating on a rental basis under the terms of the Land Act, 1898.

(b) *Leases and Concessions on royalty basis; sawmilling permits granted under Section 11 of Land Act Amendment Act, 1904.*

(Royalties, Jarrah, £55,005; Karri, £7,539.)

At the close of the year under review there were 10 timber leases and one timber concession (Canning 2/1) operating under extensions granted in accordance with the provisions of Section 6 (1) of "The Forests Act, 1918." The royalties payable on these leases and concessions are fixed on the same basis as the group of permits granted under "Land Act Amendment Act, 1904." Full particulars of periods of extension and date of expiry will be found in Appendix 3b, page 47. As in some cases a single mill operates over a group of leases, all leases subject to royalty payments were not worked during the year.

With the exception noted hereunder, sawmilling permits ("Land Act Amendment Act, 1904") were extended for a further 12 months. Permit 27/11 (State Sawmills) expired on 31st December, 1924, and as the area had been very heavily cut over and it was desired to commence regeneration operations, no renewal was granted. Permit 92/11 was forfeited for non-fulfilment of conditions relating to the erection of a sawmill, and subsequently advertised for sale as a sawmill permit under the Forests Act. The royalty, fixed by auction, was 7s. 3d. per load in the round, being more than double that prescribed under regulations for the original permit (92/11).

(c) *Permits under "Forests Act, 1918."*

(Royalties, Sawmilling (Jarrah), £30,428; Hewing (Jarrah), £6,277.)

The area of forest country not held under tenure is so very limited that permits have not been sold unless extension of area was necessary to keep an existing mill operating or it was desired to clean up timber in advance of settlement or in conjunction with regeneration work. The steady demand for jarrah has resulted in all mills operating continuously throughout the year with consequent increases in the total royalty received.

The marking of trees for falling has been substituted for minimum girth restrictions on a number of permits, and, as indicated elsewhere, the change of

system has given considerable satisfaction to those sawmillers who are concerned with prolonging the "life" of their respective mills. With existing high rates for tramline construction, treemarking has undoubtedly proved more economical in that the volume of timber to be cut per acre is greatly increased. In all cases this more intensive cutting on proper silvicultural lines has been followed by regeneration work.

Where found necessary to complete utilisation work by hewing before commencing regeneration operations, a system of local hewing permits has been introduced. Each pair of cutters receives a monthly permit over a definite area, which must be cleaned up before fresh country is made available. In the few cases where large hewing permits have been advertised over group settlement country in the Busselton-Margaret River Districts, royalties varied from 10s. 6d. to 35s. 6d. per load in the square; a remarkable indication of the rapidly rising stumpage value of jarrah.

2.—INSPECTION BRANCH.

(Inspection fees, £16,775.)

The volume of sawn sleepers inspected was 2,933,333 cubic feet.

The volume of hewn sleepers inspected was 4,282,392 cubic feet.

The volume of other class of timber inspected amounted to 676,331 cubic feet.

The volume of timber inspected principally on behalf of overseas buyers was practically double the volume handled during the previous year. The one standard has been maintained, and no serious complaints have been received. Buyers must realise that all timber is inspected green from the saw or the broadaxe, and suffers considerable rough handling and careless exposure during the period between inspection and delivery. Where timber other than railway sleepers is required for special purposes, the department is prepared to inspect according to special specifications, but full particulars, including the mills at which timber is to be cut, must be supplied in sufficient time to permit of instructions being issued to the inspectors concerned.

3.—TIMBER CUT ILLEGALLY.

It is satisfactory to note that there has been a considerable falling off in the number of prosecutions necessary for breaches of regulations. Proceedings were instituted in connection with nine charges and seven convictions secured. Only in one case has a serious trespass been reported, and the company concerned paid damages amounting to £1,528 4s. 7d. on account of 2,816 loads in the round illegally removed. A charge was also laid against the "bush boss" in charge of fallers, and a fine of £20 inflicted.

In a number of centres group settlers who are so constantly engaged on cutting, blasting, and ring-barking trees have failed to acquire any sense of the value of a well-grown jarrah tree. Considerable trouble has been experienced in impressing on these settlers that posts must be split from jarrah trees being destroyed in the course of clearing operations and not from adjoining timber reserves and other Crown lands. Final warnings have been issued both direct to settlers and through officers of the Lands

Department controlling group settlement work, so that in the event of further trespass the Department will be forced to institute proceedings against the individuals concerned.

4.—SANDALWOOD.

(Revenue, £52,511.)

The control of sandalwood getting from Crown lands under the license system fully explained in last year's report has been continued, and approximately 7,456 tons have been railed during the twelve months under review. The placing of orders for the considerable excess over 6,000 tons was possible, as approximately 1,090 tons of this sandalwood consisted of roots and butts utilised for oil distillation within the State. Two hundred and twenty tons of confiscated wood is included in the above total.

Regulation of output is an essential feature of the stabilisation of the sandalwood industry, and, with the satisfactory prices and constant demand associated with this stabilisation, many more people than those necessary to pull 7,000 tons are desirous of obtaining orders to get sandalwood. Despite

efforts made to provide for distribution of work on an equitable basis, there have been anomalies connected with the placing of orders, and the attention of licensees has been called to them on numerous occasions, with the result that arrangements have been made so that the maximum benefit might be gained by the largest possible number of genuine sandalwood getters who had actually been engaged in getting sandalwood in the past. To this end a condition has been inserted in every order that the holder of it must be actively engaged in pulling or cleaning the sandalwood referred to therein. Although certain carters and forwarding agents have undoubtedly "handled" greater quantities over a 12 months' period in the past, the maximum order has now been fixed at 50 tons per annum, the proceeds of which is a good return for the getter who works at the job himself. Departure from this condition is only allowed in the case of carters with big plants as a guarantee of certain definite use for these plants, when it might be impossible to maintain such plants by the carting of other getters' sandalwood. Carters' orders—of a maximum of 30 tons—are few in number.

During the period under report orders were placed for approximately 7,200 tons, as shown by the statement hereunder:—

Orders placed	Tons.															
	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
No. of persons receiving these orders	223	71	37	35	24	31	12	14	6	4	3	6	4	4	2	3

* That certain persons received orders for more than 50 tons of sandalwood for the period under report is due to the fact that the 50 ton maximum per annum only came into operation in February, 1925.

† Of this number 176 prospectors received orders for a total quantity of 880 tons.

Prospectors' orders are issued to persons who have met with temporary bad luck to provide the means of getting ready cash to continue their prospecting operations. Cases have come under notice where prospectors' orders have been issued to publicans, store-keepers, engine-drivers, wages men on mines, boys of 17 or 18, etc., and, although some of these persons may have prospected in the past, they do not appear to belong to the class that, it was intended, should receive prospectors' orders. Steps were taken some months ago to place these orders on a more satisfactory basis, with the result that there is now little cause for complaint. All applications are now investigated by officers of the Mines Department, and orders are only placed on the recommendation of that

department. On all orders now issued are instructions to pullers as to the necessity of properly cleaning the sapwood from green wood and the shelly and brittle wood from dry wood. Generally speaking, these instructions have been acted on, but occasional lots are still received which it is necessary to class as below fair average quality and allow deductions accordingly. The deductions made are considerably less than those asked for by licensees, who do not consider these deductions sufficient to compensate for the lower quality of such sandalwood. Little objection can, therefore, be raised to their action in withholding orders from those persons who persistently ignore instructions and forward inferior quality wood or refuse to clean their wood properly.

Statement showing quantities of Sandalwood below Fair Average Quality on which Deductions have been made in the price paid to the Pullers, 1st July, 1924, to 30th June, 1925.

No. deduction made on account of Tons.	Deductions to the amounts and quantities shown have been allowed.							
	10s.	£1	£1 10s.	£2	£2 10s.	£3	£3 10s.	£4
4795	tons. 123	tons. 236	tons. 159	tons. 97	tons. 51	tons. 19	tons. 4	tons. ...
87.4%	2.3%	4.3%	2.9%	1.8%	.9%	.3%	.1%	...

Average price received by pullers per ton, £15 16s. 7d.

Of the sandalwood confiscated by the Department, deductions were made in respect of 34 tons.

An unsatisfactory feature of pullers' operations, which latterly appears to be on the increase, is the pulling of immature trees. Cases have been noted where sandalwood consignments have largely consisted of young growing trees, the weight of such trees sometimes being not more than 4 to 5 lbs. each, *i.e.*, to obtain 200 tons of such sandalwood, approximately 90,000 to 112,000 young trees respectively have to be pulled. The pulling of these young trees is, of course, carried out by pullers obtaining sandalwood close to townsites and railways, that is, from areas which have been culled time after time.

It is a condition of every order that immature growing trees must not be pulled, but, as this condition is ignored in some cases, consideration is being given to other measures having for their object the protection of this young growth until it reaches a size fit for pulling.

The practice of pulling sandalwood from Crown lands and consigning it as private property sandalwood, which was referred to in last year's report, has continued to be prevalent during the period under report. In the Bencubbin and Bullfinch Districts this practice has been particularly rife. In all, eight persons were prosecuted. Although it can be shown frequently that the wood is not obtained from the private property nominated, positive evidence of illegal pulling from Crown land is considered by some magistrates to be necessary in order to sustain a prosecution. Satisfactory evidence is often difficult to establish, as frequently sandalwood is pulled from areas distant up to 50 miles from the private property from which it is alleged to have been obtained. For this reason, and also owing to the fact that the fines imposed were inadequate to deter persons from engaging in a highly profitable undertaking (such persons apparently considering a problematical £10 fine to be well worth risking in order to obtain some hundreds of pounds' worth of sandalwood), it was decided to proceed with prosecutions only in exceptional cases, and to obtain redress by virtue of provisions of the license. The provisions referred to throw the onus of proof of the origin of private property sandalwood on the licensee, and more salutary redress is obtained by confiscating all sandalwood obviously not pulled from the private property nominated in the declarations which are required in respect of all private property wood. The verification of particulars of statutory declarations, and latterly of particulars of private property sandalwood contracts, which are now required before it may be purchased by licensees, has entailed a considerable amount of extra work at the Head Office, and the services of two additional clerks have been found necessary. Increases have also been necessary in the strength of the field staff, of whom four rangers are engaged almost exclusively on patrol work and investigations in the wheat belt.

Confiscations have been made in respect of 220 tons, in which 50 persons have been involved. The proceeds of this confiscated wood, for which no return would have been received but for the Department's activities, represent a sum of approximately £4,500, *i.e.*, it has more than paid for the cost of the extra staff engaged. This total does not include the proceeds of seized wood in respect of which there was no apparent intention to evade royalty. Confiscations under this heading have been made in respect of 58 tons, in which 17 persons were involved. The net proceeds amounted to £540, exclusive of

royalty: The greater loss of Crown property which the operations of the field staff has been instrumental in saving is, of course, impossible to estimate, but it can certainly be put down at many thousands of pounds. The total quantity of private property sandalwood railed during the period of report was 4,926 tons.

The requirements of roots and butts of the two firms distilling sandalwood oil in the State have been met, the deliveries for the period under report being—

C. L. Braddock—203 tons.

Plaimar Ltd.—887 tons.

Royalty on roots and butts was 5s. per ton until 31st January, 1925, after which date it was increased to £1 per ton.

The export value of sandalwood oil sent from the State during the period under report was £41,884.

This industry is severely handicapped by the fact that British Pharmacopœia standards were established before it was on the market, and, in consequence, owing to certain obscure differences in physical properties shown by chemists, manufacturers, and medical authorities to be of no practical importance, it is held by some countries to be of inferior value. Any steps which can be taken by State or Commonwealth authorities to rectify this anomaly will directly assist a valuable and growing secondary industry.

The export of sandalwood overseas has not kept pace with the increased buying, with the result that large stocks have accumulated in Fremantle and Geraldton. If the present state of unrest in China continues, it is a difficult matter to estimate how long companies can continue buying at present rates. Presumably licensees are satisfied that the demand for shipments will come before their resources are exhausted, but they can expect little sympathy from the Government owing to the fact that they have seriously aggravated the position by creating a boom in the buying of private property sandalwood which market conditions did not and do not appear to justify.

III. EXPENDITURE.

(Total Expenditure from all funds, £86,739.)

1.—GENERAL ADMINISTRATION AND COLLECTION OF REVENUE.

(Charged against Consolidated Revenue £17,816.)

This item shows an increase of 12.5 per cent. over the expenditure for the previous year, but is more than offset by an increase of 43.6 per cent. in the gross revenue.

2.—REFORESTATION FUND.

The following statements show the position of the Reforestation Fund (Section 41, Forests Act, 1918) at the beginning and end of the financial year:—

		£
Revenue of Department, 1924-25 (excluding royalty on sandalwood)	...	145,255
Less—		£
Consolidated Revenue Expenditure	...	15,257
Interest on Loan	...	2,080
Sinking Fund	...	195
Special Acts	...	690
		18,222
Net Revenue	...	£127,033

Three-fifths of the above sum, representing the net revenue of the department, is placed to the credit of the Reforestation Fund, the position of which is set out below:—

Reforestation Fund—		£
Balance at 1st July, 1924	...	71,545
Transferred from Revenue, 1924-25	...	76,220
Sundry Recoups, 1924-25	...	109
Less Expenditure from 1924-25	...	65,497
Balance available for Reforestation work 1925-26	...	82,377

(a) Working Plan No. 1—Mundaring District.
(Expenditure, £7,592.)

Survey (Topographical).—99,730 acres have been surveyed in accordance with the general lines now adopted in connection with the Topographical Survey of the Jarrah Forest. A detailed account of the work is given in the report on Topographical Survey operations. This work is a continuation of the survey operations necessary for the preparation of a revised compartment plan of the area.

Control of Utilisation.—Control by tree marking of cutting operations to supply logs for four (4) small mills, was continued. A total of 428,460 cubic feet was removed from 3,100 acres of previously cut-over bush. One mill closed down and another commenced operations towards the end of the year.

Utilisation of any timber remaining, after saw-milling operations were completed, was secured by hewing and conversion of dead timber for firewood. Four (4) local hewing permits and 36 annual firewood permits were issued for the year.

Sylvicultural Work (£705).—Cutting operations for trade purposes were followed by the treatment of the areas for regeneration under the Group Selection System. This work was carried out by departmental employees.

2,081 acres were treated at an average cost of 6s. 4d. per acre.

A summary of the location and area of the work is as follows:—

Compartment	...	...	...	acres
32	...	...	...	395
Do.	31	...	...	415
Do.	13	...	...	160
Do.	116	...	...	591
Do.	117	...	...	200
Do.	155	...	...	320

Burning of debris, improvement work in the groups, and spot sowing in blanks was carried out over 1,000 acres treated in the previous financial year at a cost of 4s. per acre.

Fire Control (£1,032).—The area under protection comprises 120,000 acres. The season under review has not been a particularly severe one for controlling fires for, though at times some strong easterly winds were experienced which made the work difficult, several showers of rain fell during March at usually the most critical periods. A total of 462 points of rain fell during the six months ending 30th April.

From the middle of November the bush in many places would carry a running fire. The first fire on the protected country occurred on November 24th, 1924. Gungin Look-out Station was manned almost continuously from 16th November to 6th May. Dale Look-out Station was manned from 2nd September to 30th April, 1925.

Preliminary burning during December and January was carried out over 1,000 acres of blackboy gullies, and also stunted jarrah and wandoo country on the eastern fringe of the protected area. In addition breaks varying from one to five chains in width were burnt along roads and tracks for a distance of 12 miles.

Top-disposal work, at a cost of eleven (11) pence per acre was done on 920 acres of country cut-over for mill logs.

The last fire occurred on 4th May and the season ended officially on 6th May. The total number of fires reported was 74, details concerning which are scheduled hereunder:—

Number of Fires.

Areas burnt over.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	Total.
0 to 1	...	1	2	5	4	9	4	25
2 to 10	...	3	...	2	3	8	4	20
11 to 20	...	3	4	4	3	2	...	16
21 to 50	...	1	...	2	2	1	...	6
51 to 100	2	2	1	...	5
101 to 200	1	...	...	...	...	1
201 to 300	1	...	1
Over 300
Total	...	8	7	15	14	22	8	74

Cause of Fires.

Cause.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	Total.
Travellers	...	1	...	...	...	1	1	3
Hunters and Bee Robbers	2	...	...	2
Bush Workers	1	...	1	5	1	8
Settlers burning-off	...	1	...	1	...	1	...	3
Stock owners burning off for grazing	...	2	2	2	...	...	...	6
Campers
Government locomotives	2	1	1	...	4
Bush locomotives	...	2	1	1	2	2	...	8
Deliberately lit	...	1	1	8	7	12	6	35
Unknown	...	1	2	1	1	...	...	5
Total	...	8	7	15	14	22	8	74

Area under control	120,000	acres
Area burnt	1,400	"
Percentage burnt	1.17	%
Total cost	£979	
Cost per acre	1.96	pence

The detailed expenditure is listed hereunder:—

	£
Publicity Work	7
Manning Look-out Stations	213
Patrolling	90
Fire-fighting	219
Maintenance of Firebreaks	2
Upkeep of Government Horses and Vehicles	16
Horse Allowance	253
Car Allowance	116
Preliminary Burning (Danger Zones)	63

Clearing and Forming Tracks (£305).—82½ miles of bush tracks and old formations were cleared for traffic at an average cost of £3 per mile. Included in this cost was the formation of a track to Mt. Dale Look-out Station. In fire control these tracks have proved of great value, both for quick transport and efficient firebreaks in case of emergency.

Twenty (20) chains of forming, including construction of culverts and gravelling, at a cost of £42, was done on the approach to Barton's Forest Station.

On the upkeep of the departmental road round the Weir, £210 was spent. Assistance in this work was given by the sawmill permit holder using this road. Eight miles was used for heavy traffic by motor lorries and wood drays, and the following forest produce was transported over the road:—

60,500 cubic feet of jarrah logs.
5,625 tons of firewood.

Grazing Control (£21).—In past years considerable damage was caused by horses in the young plantations. With the object of combating this nuisance the portion of the working circle within the Mundaring Reservoir Catchment Area was declared State Forest. Powers given under the Forests Act were then used to prevent further trespass.

Fifty-nine (59) "brumbies" were yarded. All unbranded animals were destroyed, but branded horses were released to their owners on the distinct understanding that in the case of further trespass the owners would be prosecuted.

Permanent Plant (£2,393).—In furtherance of the policy of establishing resident forest overseers, and other employees on the forests, two new houses were erected, and three additional houses and five huts were purchased.

Additional sheds were erected at head-quarters.

Administration.—Forester Sharp was transferred to the Mundaring District on 16th July, 1924, to replace Forester Smith. Assistant Forester Lydiate was appointed to the Mundaring District on 9th March, 1925.

(b) *Working Plan No. 2, Ludlow.*
(Expenditure, £10,738.)

Control of Utilisation.—The departmental sawmill at Wonnerup continued operations during the financial year under review.

748 trees were marked and 2,545 loads felled at a cost of 3s. 10½d. per load. The use of the Vaughan drag-saw was continued in connection with falling operations. 2,500 loads were hauled to the mill at a cost of 14s. 6d. per load.

An extension of the bush tramline was made to the North, 153 chains of line being completed. 45lbs. and 60lbs. scrap rails from the Western Australian Government Railways were used in the construction.

Details of costs are listed hereunder:—

	£	s.	d.
Total cost of Construction	1,723	7	7
Unit cost of Construction (per mile of track)	901	2	6
Total cost of Material	1,357	18	10
Unit cost of Material (per mile of track)	711	15	4
Total cost of Labour	365	8	9
Unit cost of Labour	189	7	2

The cost of plate-laying, forming, and boxing was £77 4s. 7d. per mile of track, or 19s. 3d. per chain.

The cost of the scrap rails, fishplates and fishbolts on trucks at Wonnerup, was £578 16s. 3d. per mile of track. The railway freight alone on this material amounted to £157 17s. per mile of track.

Included in the cost of labour is the cost of unloading, cutting, straightening, and loading the scrap rails.

The total amount expended in connection with the tuart mill, exclusive of tramline charges, was £4,153.

Sylvicultural Work (£443).—In view of the heavy seed-year experienced, regeneration cleaning, in conformance with the group selection system, was carried out over 965 acres in Compartments 14, 12a, and 11, at a cost of 8s. 4d. per acre. An additional 1,500 acres, which is to be treated during the coming year, was burnt. In connection with these operations, 296 loads were felled for the Wonnerup Mill. 124lbs. of tuart seed was collected at a cost of 6s. 10d. per lb.

In May, 1925, an excellent natural regeneration appeared on the burnt areas.

Experimental work was carried out in connection with broadcast and spot sowings of tuart seed and the raising of tuart seedlings in trays and bamboo tubes.

Fire Control (£373).—The area under control in the No. 2 working circle comprises some 6,000 acres of prime tuart forest. The fire season commenced in early November and ended with the rains at the beginning of May, 1925.

361 points of rain fell during the six months ending 30th April, 1924.

Forty miles of half-chain firebreaks were maintained.

The details of, and expenditure in connection with, fire-control, are as follows:—

	£
Publicity Work	2
Fire-fighting, including supervision of burning off on private property	7
Patrolling	9
Maintenance of Firebreaks	187
Upkeep of Horses and Vehicles	8
	acres
Area protected	6,090
Area burnt	4
Total Cost	£213

Causes of Fires—

Travellers	1
Duck Shooters	1
Railway locomotives	1
Unknown	1
Total	4

The linking of the Ludlow working circle head-quarters, the sawmill at Wonnerup, and the Ludlow pine plantation, with seven (7) miles of telephone line, is nearing completion. An amount of £159 was spent on this work during the year.

Grazing Control (£104).—Forest grazing leases were again sold by auction, rights being granted for periods of four and six months. Six leases totalling 3,036 acres were sold, grazing being restricted to one head of stock to 20 acres. Three farmer's grazing leases, totalling 436 acres, are also held. The amount of revenue derived from the grazing leases was £126.

Expenditure was incurred in repairs to fences, maintenance of water supply, general control of grazing, and erection of 25 chains of additional fencing.

Permanent Plant (£370).—An office and quarters for the use of the officer in charge of the working circle were erected at head-quarters. Additional stabling and storage accommodation was provided.

(c) *Working Plan No. 3, Collie.*

(Expenditure, £7,623.)

Control of Utilisation.—On the coal mining leases, trade cutting proceeds on the assumption that the mining company holding a mining lease has prior right to the existing timber, suitable for mining purposes, on that lease.

Mining operations, requiring mining timber from this working circle, are being carried out by five (5) mines operating in and around Collie.

The average area worked over annually based on the years 1921 to 1925, is 750 acres. The area cut over during the financial year under review was 1,000 acres.

The amount of timber removed was 3,000 loads.

Control is obtained by restricting the cutters to small marked coupes which must be cut out to the satisfaction of the forester in charge.

During the year the seams of coal have increased somewhat in thickness and less coal is left on the floor of some of the mines, necessitating the use of props, averaging about 9in. more in length than the props used a year ago. In consequence trees hitherto suitable for pit props will not now serve that purpose, and a larger area must be cut over than was formerly the case.

In order to secure thorough utilisation, permits have been granted to allow conversion into mill logs

and hewn sleepers of any useful standing timber which may remain after the pit-prop cutting is completed. Under these conditions three (3) small mills operated for portions of the year, cutting 85,350 cubic feet from 850 acres. One local hewing permit was issued over portion of the mining leases, 23 loads of timber being removed.

On the country external to the mining leases, trade-cutting operations were controlled by tree-marking in lieu of the minimum girth restriction.

One sawmill operated to the South-West of Collie, cutting 196,000 cubic feet from 650 acres.

Local hewing permits were issued to permit the conversion of short-butted and dry-sided trees unsuitable for milling, 5,500 cubic feet being removed.

Sylvicultural Work (£1,336).—Following trade cutting operations, regenerating cleaning was carried out to provide conditions suitable for the natural regeneration of jarrah.

On the mining leases this work is carried out according to the clear felling system.

640 acres were treated at a cost of 12s. 3d. per acre, making a total of 2,100 acres treated since operations were commenced in 1921.

Ringbarking of seed trees on 400 acres of country previously treated was carried out at a cost of 1s. 11d. per acre.

On the country external to the mining leases, regeneration cleaning was carried out according to the group selection system.

Of the total of 1,981 acres, 600 acres were treated by a training camp of forest guards, and the remaining 1,381 acres by departmental employees, at a cost of 5s. 10d. per acre.

Fire Control (£1,651).—The area over which fire-control measures were exercised, totalled 103,000 acres.

The fire season commenced about the middle of November.

The fire tower was manned from 24th of November, and the first fire occurred on 25th November.

February and March were again the worst months for the season, the strong easterly winds in those months making the work of suppressing fires difficult on occasions.

Five inches of rain were recorded for the six months ending 30th April, 1925.

The last fire occurred on the 30th April, and the season ended on 6th May when the fire tower was vacated. The total number of fires which occurred in the protected area was 61, as scheduled hereunder:—

Number of Fires.

Area Burnt—Acres.	Sept.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May	Total.
0 to 1 ... ..	...	2	10	1	3	3	1	...	20
2 to 10	2	1	4	5	2	4	3	...	21
11 to 20 ... ..	...	...	2	1	1	2	1	...	7
21 to 50 ... ..	...	...	1	3	4	...	1	...	9
51 to 100 ... ..	...	...	...	2	...	...	...	...	2
101 to 200 ... ..	...	...	...	...	1	...	...	...	1
201 to 300 ... ..	...	...	...	...	1	...	...	...	1
Over 300 ... ..	...	...	...	...	...	...	...	...	<i>Nil</i>
Total	2	3	17	12	12	9	6	...	61

Details of Causes of Fire.

Cause.	Sept.	Nov.	Dec.	Jan.	Feb.	Mar.	April	Total.
Travellers	1	3	11	5	2	3	2	27
Hunters and Graziers ... ..	...	...	...	2	4	3	3	12
Bush Workers ... ..	...	...	1	2	3	2	...	8
Fires on Private Property	1	...	3	2	1	...	1	8
Bush Locos. ... ..	...	...	1	...	...	1	...	2
Government Locos. ... ..	...	...	...	...	1	...	...	1
Unknown ... ..	...	...	1	1	1	...	...	3
Total	2	3	17	12	12	9	6	61

The total expenditure for the season was £1,281, details of which are given hereunder:—

	Actual debits.	£
1. Publicity Work ... ..	...	4
2. Manning Look-out Station ... ..	...	122
3. Patrolling ... ..	...	65
4. Fire-fighting ... ..	...	406
5. Maintenance of Firebreaks ... ..	...	38
6. Upkeep of Government Horses and Vehicles ... ..	...	64
7. Horse Allowance ... ..	...	254
8. Car Allowance ... ..	...	129
9. Preliminary Burning ... ..	...	199
Area Protected	103,000	acres
Area Burnt	954	
Percentage Burnt	92	%
Total Cost	£1,281	
Cost of Protection per acre	2.99	pence

During the fire season experiments with wireless communication of fire-messages were carried out, though no definite results were obtained. Wireless was not used as a means of direct communication with the field gangs but only as a subsidiary service. A ground return tree telephone line was erected to connect the North block with the Collie office through the Postmaster General's Department circuit. Three miles 40 chains of line was erected at a total cost of £50 7s., or £14 7s. per mile. The cost of labour in-construction was £22 19s. 9d., or £6 11s. per mile.

Clearing Tracks (£235).—Before the commencement of the Fire Season all of the most conveniently situated and serviceable tracks were cleared up and made fit for bush traffic. These served as fire-lines, and rendered access easy and rapid. The distance cleared was 202 miles, at a cost of £1 2s. 7d. per mile.

Grazing Control.—Three grazing leases at a total rental of £15 per annum were held over portion of the Working Circle. A large number of cattle owned in and around Collie have caused considerable damage to young pines in the plantations. Negotiations between the Collie Town Council and this Department, with a view to the establishment of a fenced commonage, are still proceeding.

Repairs to old fences for the purpose of establishing a horse paddock cost £14.

Permanent Plant (£2,045).—Three houses were erected for the use of Resident Overseers. Stables were provided with each of the houses, and large stables and sheds erected at the District Headquarters. The necessary clearing was carried out on the site for the proposed office and storeroom.

Administration.—Forester Weston was transferred to Collie on the 8th July, 1924, to take charge of the Collie District and Working Circle.

(d.) Working Plan No. 6—Yornup.

(Expenditure, £366.)

The Yornup Working Circle, an area of 5,600 acres in the Bridgetown District, is situated about two miles south-west of the Yornup Siding on the Bridgetown-Manjimup Railway.

Most of the northern portion of the Working Circle is prime jarrah country. To the south the forest becomes poorer, finally merging into the treeless Donnelly Plains on the southern boundary.

Five thousand (5,000) acres is held under Sawmill Permits Nos. 187 and 438 by Messrs. Lewis & Reid, Ltd. A sawmill with a daily average capacity of ten (10) loads of squared timber is established on the area.

A survey of the roads, tracks, and natural features was carried out in June, 1924.

A Working Plan, dated 1st April, 1925, to govern the operations on this Working Circle was drawn up and approved by the Governor in Executive Council.

Control of Utilisation (£40).—In lieu of the Minimum Girth Restriction, trade cutting has been controlled by tree marking, according to the Group Selection System, since 22nd July, 1924.

Eight hundred acres have been free marked at a cost of 11.92 pence per acre. This area has been cut over and 4,218 loads of timber removed.

A limited number of piles and poles were converted and disposed of under local permit for a royalty of £30.

Sylvicultural Work (£318).—Following trade-cutting operations, 800 acres were treated for regeneration, according to the Group Selection System, at a cost of 7s. 10d. per acre.

Permanent Plant.—Includes the clearing of the site for the overseer's cottage and stables, which are being erected on the area.

(e) Working Plan No. 7—Claymore.

The Claymore Working Circle, an area of 13,000 acres in the Jarrahwood District, is situated 22 miles west of the Port of Busselton, and on the Wonnerup-Nannup Railway.

The subject area is typical jarrah country and, while the volume of timber is not so great, and the trees do not attain such large dimensions as in the region of optimum development for jarrah, the timber is, in general, sound.

15,800 acres is held under Sawmill Permit No. 91 by the Swan Saw Mills, Ltd.

A sawmill with a daily average capacity of 15 loads in the square is established on the area.

A working plan, dated 1st January, 1925, to govern the operations on this working circle has been drawn up and approved by the Governor in Executive Council.

Survey.—In the Claymore working circle, the bush tramlines serve as the basis of subdivision which is made according to formations, roads, tracks and creeks as the work proceeds. 3,376 chains of survey have been completed at a cost of 3.1 pence per chain.

Control of Utilisation.—Arrangements were made with the permit holder, Swan Saw Mills, Ltd., that from 7th December all trade cutting for mill logs should be controlled by tree-marking.

1,249 acres have been tree-marked at a cost of 15.54 pence per acre, and 415,543 cubic feet of mill logs removed from 1,190 acres, an average of seven loads per acre.

Silvicultural Work.—Following trade-cutting, regeneration cleaning was carried out to provide conditions suitable for the regeneration of jarrah. 581 acres were treated at a cost of 9s. 3d. per acre.

In view of the good seed year occurring at Claymore, 415 acres of this area were burnt at a cost of fourpence per acre.

86 pounds of jarrah seed were collected at a cost of 6s. 8d. per lb.

Administration.—Assistant Forester Thomson was transferred to Claymore on 6th December, 1924, to take charge of the Claymore working circle.

(f) *Working Plan No. 9—Big Brook.*

The Big Brook Working Circle, an area of 7,750 acres in the Manjimup district, lies about eight miles to the north of Pemberton.

The area is prime karri country.

Pure karri forest predominates, but karri does not exist throughout in a pure state, for occasional belts of a mixture of karri, marri, blackbutt and some jarrah occur. The pure karri stands contain a very high volume, as much as 50 loads of timber per acre. The average length of bole may be taken to be between 80 and 100 feet.

The virgin forests consists, in general, of a dense stand of mature and overmature trees. The cut-over bush in consequence contains few, or no trees of immature size, and therefore the clear-felling system has been applied in the treatment of this bush.

The only trade cutting at present carried out on this working circle is the sawmilling operations, under Sawmill Permit 85/11, by the State Saw Mills.

For the present, silvicultural work will be confined to regeneration cleaning following the cutting of mill logs.

A working plan, dated 1st April, 1925, and drawn up to govern the operations on this working circle, has been approved by the Governor in Executive Council.

Survey (£49).—The topographical survey of the creeks, prominent ridges, tram lines, formations, and tracks was carried out in January, 1925.

Control of Utilisation.—During the year, 600 acres of the working circle were cut-over by the State Saw Mills under Sawmill Permit No. 85/11. 71,572 loads in the round were removed, or an average of 5,950 cubic feet per acre.

Silvicultural Work.—100 acres have been treated for regeneration, at a cost of 6s. 9d. per acre.

Permanent Plant.—This includes the cost of clearing the site for an overseer's cottage, which is being erected on the working circle.

(g) *Working Plan No. 11—Mumballup.*

The Mumballup Working Circle, an area of 6,500 acres in the Noggerup district, is situated about two miles north of the Mumballup Siding on the Preston Valley Railway, and is prime jarrah country.

The whole area is held under Sawmill Permit No. 492 by the Mumballup Timber Syndicate.

A saw mill with a daily average capacity of seven (7) loads of sawn timber is established on the area.

A working plan, dated 1st May, 1925, and drawn up to govern the operations on this working circle, has been approved by the Governor in Executive Council.

Survey.—During October and November, 1924, the area was surveyed in accordance with the general lines adopted in connection with the topographical survey of the jarrah forest.

Control of Utilisation.—Sawmilling operations were commenced by the Mumballup Timber Syndicate in March of this year. Control of the felling was exercised by tree-marking, on the group selection system, from 20th May, 1925.

211 acres were tree-marked at a cost of 7½d. per acre.

Trade-cutting will be followed by regeneration cleaning.

(h) *Working Plan No. 12, Noggerup.*

The Noggerup Working Circle, an area of 9,300 acres in the Noggerup district, lies about two miles south of the Noggerup siding on the Preston Valley line, and is prime jarrah country. The whole area has been heavily cut over in the past for mill logs, and the Eastern portion in addition intensively worked for hewn sleepers, upwards of 20 loads in all per acre having been removed.

A portion of area adjoining the Western boundary, less heavily cut over than the remainder, has been temporarily reserved as a possible saw-mill permit. The Eastern portion of the working circle is not considered, owing to the low volume of timber it now carries capable of being economically worked for sawmilling purposes, and in consequence utilisation of the few remaining trees is being effected by hewing.

A working plan, dated 1st June, 1925, drawn up to govern the operations on this working circle has been approved by the Governor in Executive Council.

Survey.—During the months of March to May, 1925, the area was surveyed in accordance with the general lines adopted in connection with the topographical survey of the jarrah forest.

Control of Utilisation.—Tree-marking, according to the silvicultural system, selection by groups, was commenced on 28th January, 1925, in connection with sleeper hewing.

594 acres were tree-marked at a total cost of £19 5s., or 8d. per acre.

480 acres were cut over for sleepers during the period.

Silvicultural Work.—292 acres were treated for regeneration at a cost of £83, or 5s. 8d. per acre.

(i) *Working Plan No. 13, Potter's Gorge.*

The Potter's Gorge Working Circle, an area of 11,000 acres in the Collie district, lies about four miles to the South of the railway siding of Fernbrook, on the Brunswick-Collie line, and is prime jarrah country.

A feature of the forest is the excellent height growth made by the trees. From some portions as much as 100 loads per acre have been removed.

The area has been heavily cut over in the past for mill logs and hewing timber, and the present stand consists essentially of overmature and worthless trees with scattered piles and poles of good quality. On the more distant and less accessible portions in the gullies and gorges, 20 to 70 loads in the round still remain.

Seven thousand acres is held under Sawmill Permit S2/11 by the State Sawmills.

A mill with a daily average capacity of eight loads of timber in the square is established on the area. Control of the cutting operations for this mill will in future be controlled by tree-marking on the group selection system, in lieu of the control by the minimum girth restriction.

A working plan, dated 1st June, 1925, and drawn up to govern the operations on this working circle has been approved by the Governor in Executive Council.

(j) *Working Plan No. 14, Worsley.*

The Worsley Working Circle, an area of 5,000 acres in the Collie district, is situated about two miles to the East of the Worsley siding on the Brunswick-Collie railway, and is prime jarrah country.

The greater part of the forest was cut over for sawmilling in the early years, and more recently heavily cut over for hewn sleepers, and is greatly in need of treatment for re-establishment.

Portion of the area is held under Sawmill Permit No. S2/11, and the remainder under Sawmill Permit 581 held by the State Sawmills. In connection with Permit No. 581, sawmilling operations are to be carried out for a mill, with a daily average capacity of about two loads of sawn timber, being erected on the working circle. Operations will commence early in the next financial year.

A working plan, dated 1st June, 1925, and drawn up to govern the operations on this working circle, was approved by the Governor in Executive Council.

(k) *Working Plan No. 15, Jarrahdale.*

The Jarrahdale Working Circle, an area of 27,000 acres in the metropolitan forests district, is situated about 30 miles south of Perth, and is prime jarrah country.

This forest is included in the Wongong Brook and Serpentine water catchment areas, the forest produce being under the control of the Conservator of Forests.

The working circle forms portion of Timber Concession 12/0, held by Messrs Millars' Timber and Trading Company, Limited.

It is intended that operations on this Jarrahdale working circle shall supply not more than an average of 40 loads in the round per day, a portion only of the total volume required for the mills operating on the concession. This trade cutting will be controlled by tree-marking, according to the group selection system, in lieu of the control by the minimum girth restriction.

A working plan, dated 1st June, 1925, and drawn up to govern the operations on this working circle, has been approved by the Governor in Executive Council.

Survey.—In the Jarrahdale working circle the bush tramlines serve as the basis of subdivision which is made according to formations, roads, tracks, and creeks as the work proceeds.

Control of Utilisation.—Arrangements have been made with the concession holder, Messrs. Millars' Timber and Trading Company, Limited, that all trade-cutting for mill logs shall be controlled by tree-marking.

This arrangement took effect from 12th March.

248 acres have been tree-marked at a cost of 9d. per acre.

(1.) *Working Circles for which Working Plans are in course of preparation.*

(i)—*Lowden Working Circle.*

The Lowden Working Circle, an area of 6,000 acres in the Donnybrook District, is situated four miles to the north-east of the Lowden Siding, on the Preston Valley Railway, and is prime jarrah country.

2,857 acres are held under Sawmill Permits Nos. 322 and 502 by Messrs. Bunning Bros., Ltd., to supply a mill with a daily average capacity of 12 loads of sawn timber. This mill is erected on private property near Lowden Siding.

470 acres are held under Sawmill Permit No. 574 by Messrs. Millars' Timber & Trading Co. to supply a mill with a daily average capacity of 11 loads, in the square, established on the area.

A Working Plan to govern the operations on this Working Circle is in course of preparation.

Survey.—A survey, of the natural features, roads and tracks, in accordance with the general lines adopted in connection with the topographical survey of the jarrah forest, is nearing completion.

Control of Utilisation.—By arrangements with Messrs. Bunning Bros., trade cutting on Permits Nos. 322 and 502 is being controlled by tree-marking on the Group Selection System. 650 acres have been tree-marked at a cost of 10½d. per acre.

On Sawmill Permit No. 574, control of trade cutting will be exercised by tree-marking from the beginning of the new financial year.

Silvicultural Work.—Following the trade cutting, 112 acres were treated for regeneration at a cost of 8s. 10d. per acre.

(ii)—*Sussex Working Circle.*

The Sussex Working Circle, an area of 15,000 acres in the Jarrahwood district, lies about two miles to the east of the Cambray Siding on the Wonnerup-Nannup railway.

The subject area is typical jarrah country, and while the volume of timber is not so great, and the trees do not attain such large dimensions as in the region of optimum development for jarrah, the timber is in general sound.

10,000 acres of the working circle are held under sawmill permit No. 145 by John Nicholson, Esq. A sawmill with a daily average capacity of 11 loads of sawn timber is established on the area.

By arrangement with the sawmill permit holder, control of trade cutting for this Sussex mill has been exercised by tree-marking since the 8th June, 1925. 130 acres were tree-marked at a cost of 12 pence per acre.

In connection with the sawmilling operations on the Jarrahwood leases, cutting of mill logs is carried out to supply the Jarrahwood mill, which has a daily average capacity of 20 loads of square timber.

Cutting operations have been controlled by tree-marking from 8th January, 1925, 2,390 acres being tree-marked since that date, at a cost of 8.73 pence per acre. This area has been cut over and 420,135 cubic feet of mill logs removed. Following the cutting operations, 900 acres have been treated for regeneration, at a cost of 7s. 7d. per acre.

(iii)—*Dwellingup Working Circle.*

The Dwellingup Working Circle, an area of about 5,000 acres in the Dwellingup Forests District, is situated to the immediate north of the Dwellingup Siding on the Pinjarra-Dwarda railway, and is prime jarrah country.

A very fine stand of jarrah has been carried in the past, but the area has been heavily cut-over, being portions of four different sawmilling permits. Reproduction following the "falling" has been exceptionally good, though the seedling and sapling growth which does occur has, in most instances, become malformed through repeated fires.

As indicated in the last annual report, an experimental area of 2,000 acres was established at Dwellingup, and this area has now been included in the Dwellingup Working Circle.

A working plan to govern the operations on this area is now in course of preparation.

350 acres were treated for regeneration, at a cost of 7s. 2d. per acre.

(iv)—*Marrinup Working Circle.*

The Marrinup Working Circle, an area of 10,000 acres in the Dwellingup District, is bounded on the north by the South Dandalup River and on the south by the Pinjarra-Dwarda railway. Marrinup is the railway siding for the area.

This working circle is prime jarrah country. Virgin forest occupies the northern portion, while the remainder has been heavily cut-over for mill logs.

The cut-over area is at present held under timber lease 330/113 and sawmill permit 440 by Messrs. Millars' Timber and Trading Co., Ltd.

A working plan to govern the operations on this working circle is in course of preparation.

During April and May, 1925, the area was surveyed in accordance with the general lines adopted in connection with the topographical survey of the jarrah forest.

The bush tramlines will serve as the basis of subdivision, which will be made according to the formations, roads, tracks, and creeks as the operations proceed.

Control of trade cutting will be exercised by tree-marking, commencing early in the new financial year.

(v)—*Plavin's Working Circle.*

The extent of this working circle, which is in the belt of prime jarrah country south of the Hotham Valley railway line, will be decided in the near future, when the topographical survey which is now being carried out has been completed.

The country was all cut over by sleeper hewers some years ago, and is now held by the Australian Lumber Company, under Forests Act sawmilling permit No. 54.

Regeneration following the sleeper cutting was good, and although groups of good saplings do exist, the majority of the trees have become malformed by successive fires.

It is anticipated that in the future trade cutting will be controlled by tree marking.

Regeneration cleaning has been commenced on country which has been heavily cut over, but on which there are still a few milling logs.

The work has been done with a view to the mill eventually taking the milling logs, and for the purpose of training staff for this and other centres.

300 acres were treated for regeneration at a cost of 10s. per acre.

(vi)—*Pindalup Working Circle.*

A topographical survey of the country to be included in this working circle, which is on the Hotham Valley railway line in the Dwellingup District and nearing the edge of the prime jarrah belt, has been carried out, but the boundaries have not yet been definitely determined.

The area has been heavily cut over, both for hewing and milling timber, and is now held under permit No. 34/11 by Messrs. Port & Co., who have difficulty in working their mill during the winter months owing to the distance from the mill of sufficient quantities of timber and the state of the bush tracks.

Control of trade cutting has been commenced, and will be resumed on the approach of summer.

Reproduction has taken place, but the sawmillers' methods of extracting the timber in the past by repeatedly running over the country have resulted in the felling and fires damaging most of it.

Regeneration cleaning has been commenced, and 130 acres were treated at a cost of 4s. 2d. per acre.

The boundaries of the working circle will be decided, and a working plan prepared, early in the new financial year.

(vii)—*Amphion Working Circle.*

The boundaries of this working circle, comprising an area of about 5,000 acres of prime jarrah country, which has been heavily cut over both for hewing and milling, have not yet been definitely located.

Very few millable trees remain in close proximity to Amphion mill, which has been operating for the last 11 years, and regeneration work, already commenced, will have to be carried out over a considerable area without further utilisation being possible.

Further from the mill there are trees fit for milling and hewing, but it is doubtful whether the re-opening of the mill will be justified.

A working plan for the area will be prepared in the near future.

Regeneration cleaning was carried out over 710 acres at a cost of 3s. 5d. per acre.

(m) *Education of Apprentices—£2,933.*

During the year under review eight new apprentices were engaged and seven finished their course of training at Ludlow Forest School.

The final term for fourth year apprentices opened in August, 1924, and closed in November. The subjects studied were: "Forest Management," "Utilisation," "Transport and Engineering," "Forest policy."

In addition to class work, these apprentices carried out a topographical survey and classification of Ludlow pine plantation as data for a working plan. Fortnightly demonstrations were given in sleeper inspection and the detection of timber faults generally. Plans were drawn of tramway bridges and of the layout of a sawmill, and instruction given in signalling with instruments as used in fire control. All apprentices gained a satisfactory pass mark in the final examination and were distributed at the close of the term amongst the various forest districts for further practical experience.

The school term for the new apprentices engaged in January, 1925, commenced in February and ended in May. The following subjects were embraced in the curriculum: Botany, Entomology, Geology and Climates, Mathematics and English. In addition to subjects studied in class, fortnightly demonstrations were given in timber inspection and practice obtained in the use of signalling instruments. The boys were also partly employed in tending a bamboo tube nursery. All apprentices gave a satisfactory account of themselves in the final examination, and were sent to a training camp at the close of the term for practical experience in nursery work and in the use of tools.

Of the six apprentices engaged in January, 1924, two were released from indentures and the remaining four employed on effective forestry work in various districts throughout the year.

(n) *Advertising, Publicity and Popular Education.*

The timbers of the State received a splendid advertisement at the British Empire Exhibition at Wembley Park. The exhibit had a first class position, close to the main entrance.

The rack of 12in. x 1in. x 8ft. boards showing the timber as it left the saw, then planed and finally polished, was much admired, as was also the panelled room carried out in polished jarrah, furnished with a suite of polished jarrah office furniture which came in for favourable comment, not only from the general public but also from furniture manufacturers and cabinet makers, and many enquiries were made with regard to quantities of seasoned timber available and prices of same.

The display of sleepers and large scantlings and bridge timbers in the lumber section, each showing durability specimens that had been in use for a large number of years, should prove of great benefit to the State, for engineers from practically every country in the world made close examination, not only of the exhibits, but also of the specimens prepared at the Midland Junction Workshops, showing the breaking strain of our timbers in comparison with other timbers used for similar purposes.

As the work of reforestation and afforestation of our timber areas is gradually extending south, it has been found necessary to undertake certain propaganda work to educate the public living in and adjacent to the forest land, as to their responsibility in the preservation of this great State asset. To this end, posters have been prepared and placed on all railway stations and along the roads in each working circle, warning the people of the danger of lighting fires in the forest country.

Head Forester McVicar's lantern lectures are gradually being extended as the work of the Department is extending further south. He not only lectures at the principal centres, but also at the timber mills and at the schools throughout the forest areas.

The results derived from this popular form of education are more noticeable each year in the gradual change of opinion, and more care and a readiness to help when called upon in a fire emergency by those who a few years ago reckoned a bush fire was nothing, or in fact something to be desired, as it cleaned up the scrub and made kangaroo shooting easier.

(o) *Top Disposal Operations.*

(Expenditure, £3,092.)

Top disposal operations on lines similar to those indicated in my last annual report were carried out at all the milling centres in the prime jarrah belt.

The work, having been sufficiently organised to render separate control unnecessary, was placed under the control of officers in charge of the various districts and operations were carried out at the following centres:—

Harris River	Jarrahdale	Holyoake
East Kirup	Dwellingup	Pindalup
Jarrahwood	Hoffman	North Dandalup
Sussex	East Mornington	Treesville
Ellis Creek	Marrinup	Nanga Brook
Lowden	Wuraming	Wellington

The total acreage treated was 33,730 acres, at a cost of 1s. 10d. per acre.

Top disposal operations were also carried out in conjunction with silvicultural operations at the following centres:—

Mundaring	Yornup	Amphion
Collie	Claymore	Pindalup
Lowden	Jarrahwood	Plavin's Mill
Mumballup	Jarrahdale	

(p) *Topographical Surveys.*

(Expenditure, £2,722.)

Topographical surveys have been continued throughout the year and an area of 296,390 acres completed at a cost of £2,722, being 2.2 pence per acre or 19s. 7d. per mile of traverse surveyed. Work was carried out in the Mundaring, Collie, Pinjarra, Bridgetown and Manjimup Districts.

Plane tables were used at the inception of the operations, but during the winter months, compasses were brought into use. The Verschoyle Transit Prismatic compass, the Military Sighting Vane, and the Forester's compass were tried in turn, and of these the Forester's compass (by Cooke, Troughton & Sims) has proved the most reliable and satisfactory.

The number of camps has, during the year, been increased from three to six.

It was originally intended that the prime timber belt should be surveyed on a face, but this was found impossible, owing to the urgency of work requiring attention at various centres where working plans were to be drawn up. The whole country so far surveyed is "cut over" prime jarrah forest, with the exception of a small area of 2,500 acres of "cut-over" karri forest at Big Brook.

Officers who have become proficient in conducting the topographical survey are required, in addition, to collect data for working plan reports.

(q) *Sandalwood Propagation (Santalum cygnorum).*

Total area sown—approximately 780 acres. In view of the limited areas available for the above purpose in the heavier rainfall belts, and the low yield, and, according to present British pharmacopoeia standards, the relatively inferior physical properties possessed by sandalwood oil produced from trees growing in these areas, the possibility of regenerating sandalwood in the Eastern goldfields districts, where very large areas are available, and where the sandalwood trees produce better oil, has received close attention. It is evident that, given certain conditions, sandalwood can be established on these low rainfall areas as it grows there naturally, sparsely distributed over very large areas, and evidence of natural regeneration during the past decade is plentiful.

The sandalwood tree seeds freely, and hundreds of seeds may be found under almost any mature tree. Generally speaking, these seeds remain lying on the surface of the ground, where they are cracked by the heat of the sun and subsequently decompose. Occasionally a seed is buried by debris and, when conditions are favourable, it germinates and produces a seedling. Even so, such a seedling generally germinates in proximity to a mother tree, and, although sandalwood roots parasitise on the roots of other sandalwood trees, it is obvious that such a seedling has not the same chance of subsequent development as one in close proximity to host plants that are not already nourishing a mother tree.

The sandalwood seed's adaptation for dispersal would appear to depend on—

1. Its succulent outer fruit, which may be eaten and carried by animals, as in the case of the seeds of quandong, many of which have been observed in the droppings of emus, and

2. The round shape of the nuts, which are admirably adapted for carriage down slopes into flats and watercourses by heavy rains.

The number of seeds which reach conditions suitable for their development is infinitesimal in proportion to the thousands of seeds which are shed by mature sandalwood trees.

To provide artificial conditions most favourable for the establishment of sandalwood seedlings, and consequently to obtain a higher stocking of sandalwood trees on certain areas to augment the present sparse stocking was the problem studied.

As a result of close observations, the following deductions were tentatively arrived at:—

1. That, provided suitable sites were chosen, e.g., water courses, gullies, flats between hills, etc., sowings would receive sufficient moisture to germinate seeds and establish seedlings in years of average rainfall.

2. That on such sites the moisture available is much greater than on non-catchment areas, and, therefore, that the rate of growth is faster than would be supposed if the actual rainfall were taken as the only guide.

3. That sowings should only be made on such sites, because, although in years of exceptional rainfall such as that of the present season, sowings might become established even on slopes and ridges, such sowings would be in the nature of a risky experiment, and because in any case the rate of growth of seedlings which did survive would necessarily be slower than those on the catchment areas.

4. That sowings should only be made under host trees throwing adequate shade, as, apart from the desirability of establishing seedlings in close proximity to hosts from the roots of which they draw their food supplies, such shade protects tender seedlings from the direct rays of the sun, besides protecting the soil and allowing the moisture in it to be available for seedlings for the maximum period. It has been assumed that adequate shade is a factor which will probably determine the survival of the seedlings through the long, hot summer of the goldfields.

5. That seeds should be sown before the rain, that they must be covered to a sufficient depth, so that they will not be cracked by the heat of the sun before the advent of the rain, but that they must not be sown too deeply, so that they will receive the requisite degree of warmth and moisture when the rain sets in.

6. That the sites, even if suitable in other respects, cannot be considered as first-class unless they have a fair stocking of young, vigorously growing hosts. In this connection it should be noted that host species are apparently short-lived, and, in any case, as they get bigger they are naturally wider spaced and do not furnish such good shade as younger trees.

7. The country on which the large timber has been removed by firewood companies fulfils this latter condition, as the cutting of the big timber has been followed by natural regeneration and further spreading of the host species.

8. That the browsing of cattle, both of sandalwood trees and host species, is a serious adverse factor to sandalwood regeneration, and, where grazing is severe, hosts and sandalwood have been practically exterminated.

9. That areas six or seven miles distant from permanent water have been comparatively little damaged by grazing, but that, with the probable extension of the pastoral industry, and the consequent provision of wells and dams, cattle-proof fencing will be essential for areas where regeneration operations are to be carried out.

10. That in average years rabbits are not a serious menace, but, as they are liable to increase in numbers very quickly after good rainfall years, the desirability of rabbit-proof fencing needs to be determined.

Mr. H. R. Gray, Divisional Forest Officer, is to be specially commended on his investigations into the above problem. As a result of his observations many obscure factors have been determined and made a basis for further experimental work.

Sample plots, to determine the rate of growth of sandalwood on the goldfields, have been established. The site of one plot is on a stony ridge and the other on an alluvial flat. The first measurement has been made.

Although sandalwood parasitises on many shrubs with which it occurs in association, it shows a preference for some species over others. A commencement has been made in proving which shrubs are attacked, and the intensity of the attack, etc. Mr. C. A. Gardner, Assistant Government Botanist, has identified host plants when the material submitted has rendered this possible. In all 50 hosts have been identified, of which 30 were not previously recorded.

It is known that sandalwood (*Santalum cygnorum*) trees growing in the South-West portions of the State produce an oil inferior in yield and physical properties to those growing in comparatively arid inland districts of the State. The cause of different physical properties possessed by trees growing in the same locality of these latter districts is at present obscure and presents an interesting scientific problem. A commencement has been made in obtaining for analysis samples of sandalwood sawdust from growing trees, with a view of ascertaining the reason for this phenomenon.

Karramindie Reserve.

An experimental area of approximately 1,800 acres has been established at Karramindie, about 20 miles south-west of Kalgoorlie. This area was cut over by a firewood company about 15 years ago, and a fair proportion of the area consists of alluvial flats carrying a dense stocking of young host plants. This area is typical of many others of larger extent on the Eastern Goldfields.

For the purpose of sowings this year, as far as possible only large seeds were used, as the seedling can live for some time before parasitising a host plant, and the larger the store of nutriment in the endosperm of the seed, the longer the period for the seedling to attach itself to the roots of a host plant. A 7-months old sandalwood seedling has been observed parasitising a host.

A portion of the area is being rabbit-proof fenced and a portion cattle-proof fenced. Approximately 150 acres have been sown. The main sowing commenced on 19th February, 1925, and was completed by the end of April. Further sowings on small areas are being carried out each month, and sample plots have been established for the observation of the development of sowings carried out at different times,

the object being to determine whether seeds will remain sound in the ground for varying periods until conditions are favourable for the establishment of seedlings.

The first sowings (in a flat) resulted in 100 per cent. germination. At the date of report, some of these seedlings had attained a height of 6in. Eleven per cent. of the seeds sown on a ridge produced seedlings 15 weeks after sowing, whereas, of the sowing carried out a fortnight later on a flat, over 50 per cent. of seeds produced seedlings in 10 weeks, although these latter sowings had not received as much rain as the former. These results confirm the contention that sowings on ridges have not the same chances of success as sowings on flats, even when the rainfall is above the average, as is the case this year. It is probable that, in years of average rainfall, seeds sown on a ridge would not germinate at all.

At the date of report all sowings on flats were progressing satisfactorily and, as rain has fallen since, there is every prospect that the majority of the sowings will produce seedlings. About 5½ inches have fallen since sowing commenced, and it now remains to be seen how the seedlings will survive the summer.

Cowine Reserve.

This area of about 30,000 to 40,000 acres, starting about 12½ miles north of Bullfinch, has produced large quantities of sandalwood in the past. About 40 per cent. of the area carries large timber trees, under which are a few scattered hosts. The remainder of the area carries a fair stocking of host plants. Except that it contains practically no catchment areas, this area is similar to eastern goldfields areas which have not been cut over by firewood companies. The timbered areas, in their present condition, are not suitable for reforestation of sandalwood, but, in view of the fact that rainfall in this district is rather heavier and more certain than that of the eastern goldfields, it may be that the increased rate of growth may justify preliminary work, i.e., felling the large timber, cultivation of soil, and sowing of host plants seeds, being carried out, to produce a good stocking of hosts on such areas. A small area of timber country is being treated in this way. In addition, 300 acres of country carrying a fair stocking of hosts of all sizes, and 100 acres of country carrying large isolated hosts have been sown. There is little danger of damage from cattle in this district, and, if rabbit-proof fencing is not essential, the sowing up of areas already carrying hosts can be proceeded with. On the other hand, if such fencing is essential, the necessary inclusion of timbered country carrying few hosts renders it desirable not to proceed with sowing of sandalwood until larger compact blocks of country have been brought into a condition suitable for the purpose.

To test the damage to be expected from rabbits in this district, 100 acres of this year's sowings are not being rabbit-proof fenced.

Sowing commenced on the 30th March and was completed by the end of May. This year the rains in Bullfinch district were unusually early, about 5½ inches falling before the end of February. At the date of report, only about one inch of rain had fallen since sowing took place, and no seedlings are yet showing above ground.

Bending Reserve.

The sowing of the south plantation in 1922 and that of the north plantation in 1923 have been a comparative failure. Eating of seedlings by rabbits is probably largely responsible for this. These plantations, however, have yielded valuable information as to the methods of propagation of the species. It was decided to re-sow those portions of the south plantation which, from present knowledge, promise to offer the best chance of success. The original sowing methods were also rather altered. As a preliminary to the sowings, active steps were taken to exterminate rabbits in the plantation. A poison cart of the Rabbit Department has at different times visited the plantation and laid poison baits, and this work has been supplemented by fumigation of rabbit burrows with carbon bi-sulphide.

Two hundred and thirty acres were sown with sandalwood seed. Sowing commenced on 6th April and was completed by 30th April. Four inches of rain has fallen since sowing took place, and germination has commenced.

As portions of the plantations are poorly stocked with host plants, the possibility of increasing the stocking was tested, and an area of about five acres was experimentally sown with seeds from a host species, *Casuarina huegeliana*. Before the sowing took place, the old and dying timber on the area was felled or rung, the debris burned, and soil preparation carried out with a spring-tooth cultivator.

A sample plot has been established to determine the rate of growth of sandalwood in the district, and the first measurement has been made.

(r) Mallet Propagation (*Eucalyptus astringens*).

A classification of country west of Cuballing reported to be good mallet country has been made. 62,350 acres were compass traversed, and approximately 5,800 acres were found to be carrying mallet in some stage of development. These mallet areas varied in extent from a few acres to 70 acres. Some of these areas consist of dense mallet regrowth. Unfortunately, these patches are very scattered and the protection of them from fire is rendered difficult. Much of the intervening country between the mallet patches, however, has either obviously carried mallet in the past or appears to be suitable country for mallet to grow on. From present indications it appears that it may be possible to artificially propagate mallet on such intervening country, so that compact mallet areas of workable size, *i.e.*, 200 acres and upwards, may be established. The areas available west of Cuballing warranted the establishment of a resident overseer. A house site was selected on high ground from which most of the area could be seen, and a house and stables erected. An area of about 300 acres containing mallet regrowth and country apparently suitable for mallet was selected for treatment this year. Compartments were surveyed and fire-breaks formed around each compartment (size of compartment approximately 50 acres), as well as around the whole area. Before sowing took place the inferior wandoo and other valueless species were ringbarked and the low scrub slashed and burnt. The operations this year were not commenced until February, and the resultant burn was not as good as may be expected in future operations.

An infinitesimal proportion of the seed shed by mother trees would produce a stocking of natural wandoo seedlings which might jeopardise the establishment of artificially sown mallet. The treatment of wandoo country, even though the burning be carried out after seed fall, may therefore be followed by a crop of wandoo seedlings. To minimise this risk it may be advisable to delay burning of treated country until a year or longer after ringbarking has been carried out on it. To test this theory, one compartment ringbarked this year will be burned at the end of the coming summer.

To mallet sowings wandoo suckers will not probably be such serious competitors, as these latter will occur at the base of the boles of ringbarked wandoo, which are considerable distances from each other.

Collection of seed presented some difficulty, as very few mature mallet trees remain. Over 90lbs. were, however, collected, which, under the circumstances, was very satisfactory. Mallet seeds are very small, about 83,000 being contained in a pound of mixture (*i.e.*, actual seed and seed "chaff"). About 13½ per cent. of "mixture" consists of actual seed.

Mallet grows naturally in dense thickets, and thousands of seedlings in this regrowth are ultimately suppressed and die. In the meantime, diameter growth of the dominants is retarded. In view of the small supplies of seed available, and the consequent necessity for economy of seed, wider spacing would seem to be necessary. Apart from this, it appears that mallet can be grown on a short rotation, and the wider spacing would provide for more rapid diameter development. Some of the experiments hereunder are aimed at producing a better espacement than obtains under natural conditions.

The treated area was sown with quantities of mallet seed varying from ¼lb. to 1lb. per acre. Portion of the treated area was broadcasted without soil preparation. Portion was cultivated with a spring-tooth cultivator and broadcast sowings made. On the cultivated area sowings were also made in lines. In one case the cultivated ground was rolled after the seed was sown, and in the other case the ground was rolled before the seed was sown. About 40 acres were spot sown. This was carried out where the burn had not been very satisfactory. Experiments are also being carried out in the time of sowing. Certain areas of intervening country between mallet patches do not appear to be suitable for mallet, and experiments are being carried out to determine whether Golden Wattle (*Acacia pycnantha*) can be grown on these areas. In all, 135 acres were sown. Future artificial propagation will depend on the result of this season's work.

Apart from the artificial regeneration of mallet, the very considerable areas of mallet regrowth are a valuable growing asset, and some of them are large enough to warrant fire protection in their present condition, and this will form an important part of the work in the coming year.

It is common knowledge that mallet trees have been ruthlessly and wastefully exploited in the past, and, as little mature mallet is now left, stripping of immature trees even down to a diameter of 1½ inches has been very prevalent in the last few years. With the limited staff which has been available in the past, little action has been possible to prevent this abuse.

A flying reconnaissance has just been completed of practically the whole of the Crown land within the mallet habitat. About 321,200 acres have been traversed, and approximately 8,376 acres were found to be carrying mallet. Including the areas west of Cuballing, of which mention has already been made, the total area traversed is approximately 383,550 acres, of which 14,171 acres carry mallet. It appears that in the northern part of its habitat mallet generally grows on poor ironstone gravelly slopes. This country is poison infested and of little use for agriculture. In the southern portion of the mallet habitat, however, mallet trees appear to favour better soil, and although in this district the rate of growth may be faster, very few areas of Crown lands are available.

The quantity of bark which it is estimated can be obtained from mature trees on Crown lands this season is something over 350 tons.

Chiefly to prevent the stripping of immature mallet, the old system of issuing bark strippers' licenses, by virtue of which the holder can strip any quantity of bark from any area, has been abandoned. No person may now strip mallet from Crown lands except under permit. The permit prescribes the area from which the permit holder may strip mallet bark, and he is responsible for all operations on the permit area. Permits will not be granted for any greater quantity of bark than is known, as a result of the reconnaissance, to be obtainable from the permit area. With the adequate supervision which it is now possible to exercise over the operations of bark strippers, the protection of immature mallet is a practical undertaking.

3.—AFFORESTATION.

Owing to the planting season extending from May until the end of July, it has been found advisable to deal with the full season's planting in the one report, instead of requiring returns extending from 1st July to 30th June. This practice will delay the publication of this report by a few weeks and cause a slight discrepancy in financial statements, as all appendices refer to the period ending 30th June.

(A).—Working Plan No. 1, Mundaring.

The work of planting the resumed farm lands on the Water Supply Catchment Areas was continued.

(1) Clearing for Planting.

Fifty-eight acres in Compartment 64 (Greystones) were cleared at a cost of £2 12s. 8d. per acre.

(2).—Planting.

(a) *Greystones Plantation*.—In Compartment 63, 11 acres were planted with *P. pinaster*, 6ft. x 6ft., at a cost of £4 per acre (August to September, 1924), and one acre in June, 1925.

In Compartment 65, 11.46 acres were planted with *P. insignis*, 8ft. x 8ft., at a cost of £5 10s. 5d. per acre (August to September, 1924), and 81 acres in the 1925 planting season at a cost of £3 6s. per acre. In addition, 2 acres were planted with *P. muricata*, 8ft. x 8ft., at £3 11s. per acre.

Refilling was carried out in the 1924 planting (*P. insignis*).

(b.) *Mudros Plantation*.—Refilling with *P. insignis* and *P. pinaster* was carried out in the 1922-23 planting.

(c.) *Byfields Plantation*.—1,500 *P. palustris* were planted as refills on the area burnt in 1924.

7,200 *P. insignis* refills were planted in the 1924 block.

Owing to unfavourable weather conditions very little planting was completed at the close of the financial year.

(d.) *Summary*.—The area of effective plantations to the end of 1925 planting season is 261.46 acres, details of which are as follows:—

Sub-Compartment.	Species.	Area.	Total.
Year 1921-22.			
63A (Greystones) ...	<i>P. insignis</i> ...	50	50
Year 1922-23.			
77A (Mudros) ...	<i>P. insignis</i> ...	28	
77B (Mudros) ...	<i>P. pinaster</i> ...	17	
77O (Mudros) ...	<i>P. pinaster</i> ...	4	
74F (Byfields) ...	<i>P. palustris</i> ...	3	52
Year 1923-24.			
65F (Greystones) ...	<i>P. insignis</i> ...	50	
63A (Greystones) ...	<i>P. insignis</i> ...	3	53
Year 1924-25.			
63 (Greystones) ...	<i>P. pinaster</i> ...	12	
65 (Greystones) ...	<i>P. insignis</i> ...	92.46	
63 (Greystones) ...	<i>P. muricata</i> ...	2.00	106.46
	Total ...	...	261.46

(3).—Sowing.

In Compartment 64, 10 acres were sown with 6lbs. of *P. canariensis* seed, in spits of 6ft. x 6ft., at a cost of approximately £2 14s. per acre.

(4).—Nursery Operations.

(a.) *Headquarters Nursery*.—The planting stock for the 1925 planting season will be obtained from this source. Nursery stock is as follows:—

52,000 *P. insignis*, available for planting out in 1925 season.

50,000 *P. insignis*, to be held as planting stock for the 1926 season.

Small quantities of other species, including *P. muricata* and *P. caribea*, will provide a limited supply of experimental planting stock for the 1925 season.

(b.) *Weir Wall Nursery*.—28 lbs. of *P. insignis*, and smaller quantities of *P. pinaster* and *P. muricata*, were sown in May, 1925.

7,500 *P. pinaster* (two year old stock) from this nursery was largely used in refilling during the 1925 season.

(c.) *Greystones Nursery*.—26 lbs. of *P. insignis*, 7 lbs. of *P. pinaster*, and a small quantity of *P. torreyana* seed, were sown in June, 1925.

(d.) *Karagullen Nursery*.—An area of about one acre was established as a nursery and half of it sown in June, 1925, with 17 lbs. of *P. insignis* and 10 lbs. of *P. pinaster* seed.

(e.) *Bickley Nursery*.—7 lbs. of *P. insignis* seed were sown in September, 1924, and approximately 10,000 plants were available for planting in the 1925 season.

(B).—*Working Plan No. 3 Collie.*

(1).—*Clearing for Planting.*

(a.) In Compartment P. 3 approximately 36 acres were cleared for planting, at a cost of £2 per acre.

(b.) At Mungallup 38 acres of heavily timbered country were cleared at a cost of £3 16s. per acre.

(2).—*Planting.*

(a.) On Compartment P. 7 (Proprietary Plantation No. 2) approximately 20 acres were pit planted in July, 1924, with 21,000 *P. pinaster* two-year seedlings, 6ft. x 6ft., at a cost of £4 9s. per acre.

This is a continuation of the plantation of 2 acres established in June, 1924, and described in the last annual report.

(b.) At Mungallup 34.3 acres were planted, 8ft. x 8ft., with 23,353 *P. insignis*, mostly two year old stock, at a cost of £5 8s. per acre. *P. insignis* two-year seedlings were used as refills over an area of 10 acres planted in 1924.

(c.) In Compartment P. 3, 33 acres were planted 6ft. x 6ft., with 36,649 *P. pinaster* two-year seedlings, at a cost of £5 14s. per acre.

(d.) In Compartment P. 14 an area of 5 acres was planted, 6ft. x 6ft., with 6,000 *P. pinaster* two-year seedlings.

(e.) *Summary*.—The total area of plantations established up to the end of the 1925 planting season is 144.3 acres, details of which are as follows:—

Plantation.	Species.	Area.	Total
		acres.	acres.
Year 1921-22			
Compt. P14 (No. 1 Proprietary), June, 1922 ...	<i>P. pinaster</i> ...	7.5	
Compt. P14 (No. 1 Proprietary), June, 1922 ...	<i>E. globulus</i> ...	3.75	
Compt. P14 (No. 1 Proprietary), June, 1922 ...	<i>E. goniocalyx</i>...	.75	12
Year 1922-23.			
Compt. P14 (No. 1 Proprietary), June, 1923 ...	<i>P. pinaster</i> ...	15	15
Year 1923-24.			
Compt. P7 (No. 2 Proprietary), July, 1923 ...	<i>P. pinaster</i> ...	7	
Compt. P7 (No. 2 Proprietary), June, 1924 ...	<i>P. pinaster</i> ...	2	
Compt. P14 (No. 1 Proprietary), June, 1924 ...	<i>P. insignis</i> ...	6½	
Mungallup, June, 1924 ...	<i>P. insignis</i> ...	9½	25
Year 1924-25.			
Compt. P7 (No. 2 Proprietary), July 1924 ...	<i>P. pinaster</i> ...	20	
Mungallup, June-July, 1925 ...	<i>P. insignis</i> ...	34.3	
Compt. P3, June-July, 1925 ...	<i>P. pinaster</i> ...	33	
Compt. P14 (No. 1 Proprietary), June-July, 1925 ...	<i>P. pinaster</i> ...	5	92.3
	Total ...		144.3

(3).—*Sowing.*

Experimental sowing was carried out at Mungallup on small areas with *P. canariensis* and *P. muricata* seed.

(4).—*Nursery Operations.*

(a.) *Mungallup Nursery*.—An area of about half an acre was cleared, grubbed, drained, and fenced at a total cost of £56 3s. This area was then formed into nursery beds and sown with approximately 22 lbs. of *P. insignis* seed at a total cost of £32 16s.

(b.) *Arboretum Nursery*.—20,000 two-year *P. insignis* seedlings raised in this nursery were planted out at Mungallup, and 65,000 two-year *P. pinaster* seedlings in Compartments P. 3 and P. 7 (Proprietary Plantation No. 2).

It is estimated that 60,000-70,000 two-year *P. pinaster* seedlings and approximately 5,000 two-year *P. insignis* will be available for planting out in the 1926 season.

A sowing of 55 lbs. of *P. pinaster* seed was carried out in May and June, 1925, at a total cost of £14 6s. Beds varied from 60 ft. x 70ft. to 60ft. x 60ft., and the seed was sown in rows at the rate of 20 to the foot. The cost of preparing the beds was £31 15s.

Detailed cost of raising planting stock are difficult to obtain while nursery operations are in the experimental stage, but the following figures obtained for the Arboretum Nursery at Collie are interesting.

In May, 1923, sowings of 100 lbs. of *Pinus pinaster* and 20 lbs. of *Pinus insignis* were made, together with small quantities of seed of other species, including *Pinus caribaea* and *Pinus muricata*. The cost of preparing the beds was £23 16s., and the cost of sowing £22 16s.

Weeding to 30th June, 1924, cost £28 3s. 10d., and in September, 1924, 19s.

In March, 1925, £5 10s. 6d. was spent in wrenching.

In June, 1924, 32,000 *P. pinaster* and 18,000 *P. insignis* were planted out from this nursery as one-year stock.

In June, 1925, 66,800 *P. pinaster* and 23,140 *P. insignis* were planted out as two-year seedlings.

The cost of raising, exclusive of lifting the plants, was £81 5s. 4d., or 11s. 7d per thousand, for a total of 140,000 plants.

The amount of plantable stock obtained per lb. of seed sown was 1,000 for *P. pinaster* and 2,000 for *P. insignis*.

The number of plants obtained is low and the cost comparatively high on account of the fact that a section of the beds were flooded by an exceptionally high rise in the river, and all the sowings were made on new ground. Also, approximately 100,000 plants were discarded in the 1925 season on account of the fact that they had attained a height of 3 to 4 feet in the second year, and were consequently useless as economical planting stock.

(C) *Working Plan No. 2, Tuart Working Circle.*

(1).—*Clearing for Planting.*

25 acres in Compt. 12a was cleared at a cost of £2 12s. per acre.

10 acres in Compt. 14 was cleared at a cost of £3 6s. per acre.

(2.)—Planting.

(a) In Compt. 12a, 18 acres was planted, 6ft. x 6ft. with two-year *P. pinaster* seedlings from Ludlow Pine Plantation Nursery at a cost of £3 9s. 4d. per acre.

(b) In Compt. 14, 9 acres were planted with two-year *P. pinaster* seedlings, at 6ft. intervals and 1 acre with *P. caribea* one-year seedlings, 6ft. x 6ft., at a cost of £3 9s. 4d. per acre. The planting stock for this compt. was also supplied from Ludlow Pine Plantation Nursery.

(D.)—Ludlow Working Circle.

(1.)—Sowing.

(a) 60 acres embracing Compt. 15 and portions of Compts. 23, 24, 29 and 30, were broadcast sown with *P. pinaster* seed at the rate of 5lbs. per acre in May, 1925.

(b) *Experimental*.—Small plots totalling 1¾ acres in area were planted with *Pinus caribea* one-year seedlings.

(2.)—Summary.

The total areas under different species to 30th June, making allowance for non-effective areas in compartments established, are as follows:—

569.5 acres of effective *P. pinaster* plantations has been established.

117.5 acres was broadcast sown and planted with *P. pinaster* in 1924 and 1925.

80.0 acres is carrying *P. insignis*.

4.0 acres is planted with *P. palustris*.

226.0 acres is at present swamp or waste land on which experimental planting is being carried out.

(3.)—Nursery Operations.

50lbs. *P. pinaster* seed was sown in May, 1925, and 10 lbs. *P. palustris* along with small quantities of other species for experimental purposes in June, 1925.

25,000 two-year old *P. pinaster* seedlings were supplied from this nursery for planting out in No. 2 Working Circle.

(E.)—Working Plan No. 8—Gnangara.

The Gnangara Working Circle, an area of 500 acres in the Metropolitan Forest District, is situated about 12½ miles north-east of Perth, and in the vicinity of Lake Gnangara.

The country consists of undulating sand hills intersected by sandy flats with small swamps, all of which, with the exception of one on Loc. 2828, are dry during the greater part of the summer. From an economic standpoint tens of thousands of acres of this type of country, apparently unsuitable for any other purposes, require attention.

For the purpose of experiment an area of 500 acres is to be afforested with *P. pinaster* as the main planting stock, and other species on a smaller scale during the next five years. From results of such experiments it will be decided whether enlargement of the scope of operations is justifiable.

A working plan, dated 1st March, 1925, to govern the operations in this working circle, was drawn up and approved by the Governor in Executive Council.

Nursery Work.—Two acres of land purchased for £75, was established as a nursery in April, 1925.

70lbs. of *P. pinaster* seed were sown in May and 25lbs. of *P. palustris*, along with small quantities of other species, in June, 1925.

The complete cost of preparing the ground and sowing the seed was £32 11s. 4d. New fencing and renovation of the existing fence, with the addition of wire netting, cost £4 19s.

Permanent Plant.—A house for the resident overseer, with stables, tool and implement shed, were erected at a total cost of £812 16s.

Paddocks were established at a cost of £17.

(F.)—Working Plan No. 10—South Perth.

The South Perth Working Circle, an area of 1,075 acres, is situated in the Metropolitan Forest District, and in the South Perth Road Board District.

The country is in general gently undulating with more prominently defined ridges towards the Northern boundary. A swampy area of about 90 acres in extent in the centre of the plantation dries out about the middle of December. The soil is a deep white sand.

During the next five years afforestation is to be carried out at the rate of 100 acres annually with *P. pinaster* as the main planting stock, and other species on a smaller scale for experimental purposes.

A working plan dated 1st March, 1925, to govern the operations in this working circle was drawn up and approved by the Governor in Executive Council.

Nursery Work.—An area of one acre on the edge of a swamp consisting of fairly heavily timbered land was cleared, grubbed, and established as a nursery at a cost of £80, the work commencing in February, 1925. A temporary fence with rabbit-proof netting was erected at a cost for labour of £6 8s. 5d.

60 lbs. of *P. pinaster* seed were sown with the Planet Junior, on half an acre of nursery in May, at a cost of £1 15s. 2d.

Permanent Plant.—A house for the resident overseer, stables, and tool and implement shed were erected at a cost of £595 8s.

Paddocks were established at a cost of £16 12s. 7d.

(G.)—Applecross.

This plantation area, situated 1½-2 miles south of Applecross Wireless Station and comprising Location 549 (Reserve 9366), an area of 2,300 acres, forms part of the University Endowment Lands. By mutual arrangement between the Forests Department and the University authorities, the Government is to finance the afforestation scheme and the University is to provide the land for 50 years, profits to be shared equally.

The country is gently undulating sandplain characteristic of the coastal type. The soil is yellowish sand with a darker subsoil resting on a limestone formation, outcrops of which are frequently met with in the South-Western portion of the area.

The object is to develop the University Endowment Land by growing one or more crops of *P. pinaster*. It is intended to carry out afforestation at the rate of about 100 acres annually with *P. pinaster* as the main planting stock.

Nursery Operations.—In May, 1925, a portion of Location 45, three-quarters of an acre in extent, was leased as a nursery at a rent of £7 10s. from 1st June, 1925, to 31st May, 1926. This area, previously cultivated for three or four years, was ploughed, cultivated, formed into nursery beds and sown with 80 lbs. of *P. pinaster* seed in May, at a total cost of £12 2s. 10d.

Fencing was erected at a cost of labour of £2 18s. 3d.

(H).—*East Harvey.*

The pine plantation area, comprising Water Reserve 15515 (675 acres), is situated about three miles east of Harvey.

The main portion of the area consists of a basin bounded by steep hills to the north. The soil is dark brown in colour and of a fairly close texture, tending to bake in summer. Outcrops of granite rocks are frequently met with, and patches of laterite gravel also occur.

During the next five years it is intended to afforest the area at the rate of about 100 acres per annum with *P. insignis* as the main planting stock.

Nursery Operations.—An area of half an acre was leased and sown by hand with 20 lbs. of *P. insignis* seed in May.

(I).—*Nannup.*

To the south and south-west of Nannup there is an area of at least 100,000 acres of Crown lands carrying practically no prime jarrah forest and regarded as unsuitable for settlement purposes.

The country is not uniform in type but embraces a considerable area of sandy gravel overlying fairly stiff clay, and this may prove suitable for afforestation with conifers. The locality has a mean annual rainfall of 43 inches, and this factor renders it somewhat attractive for afforestation purposes.

With a view to testing the suitability of this country for the growth of conifers, an experimental area of 100-150 acres will be established over a period of three years with *P. pinaster* and *P. insignis* as the main species. Observations made on the behaviour of these and other species over a period of 10 to 15 years should help to determine, in large measure, the value of this type of country for afforestation purposes.

Nursery Operations.—Planting stock for these experimental plantations will be obtained from the Nannup Arboretum Nursery, in which 7 lbs. of *P. pinaster* and a like amount of *P. insignis* were sown in May, 1925.

(J).—*Argyle.*

To the east of Argyle Siding, on the Boyanup-Bridgetown Railway, there is a considerable stretch of sandplain country which is to all appearances continuous with the Capel River sandplain.

The area is bounded to the east by low laterite ridges carrying a sparse crop of stunted jarrah, and to the west by swampy country. In the northern portion the soil is a well-drained white sand overlying laterite gravel and reaching in places a depth of 8 feet. The rainfall is high, and the locality, on preliminary inspection, appears distinctly favourable for the growth of *P. pinaster*.

Afforestation operations on this area will be carried out in conjunction with reforestation work in the adjoining jarrah country.

Nursery Operations.—Planting stock for the first few years will be obtained from the Donnybrook Arboretum Nursery, in which 56 lbs. of *P. pinaster* seed were sown in May, 1925.

(K).—*Seed Store.*

With expansion of field work, the need has arisen for a properly equipped seed store from which seed true to name and of known germinating capacity may be issued. Owing to the unusual botanical interest of many endemic species the Department is continually in receipt of requests for seeds of not only trees, but shrubs and wild flowers, from scientific institutions in all parts of the world. With a widely distributed staff the work of collecting seeds of native plants at the proper season is not difficult, and it is proposed to keep a small stock of such seed for sale at a low cost to cover expenses. Managed on this basis, the seed store should not only facilitate the plantation work of the Department, but provide for an evident need at little or no cost to the Department. A suitable room has been secured and equipped with germinating boxes electrically heated and other necessary accessories.

IV. PROGRESS OF WORKING PLANS.

During the financial year under review eleven (11) new Working Plans, covering an area of 111,520 acres, have been approved by the Governor in Executive Council. These include the Hester Working Plan, completed last year:—

	acres.
Working Plan No. 5, Hester	12,000
Working Plan No. 6, Yornup	5,600
Working Plan No. 7, Claymore	18,000
Working Plan No. 8, Gnangara Pine Plantation	7,700
Working Plan No. 9, Big Brook	7,750
Working Plan No. 10, South Perth Pine Plan- tation	1,303
Working Plan No. 11, Mumballup	6,500
Working Plan No. 12, Noggerup	9,325
Working Plan No. 13, Potter's Gorge	11,250
Working Plan No. 14, Worsley	5,100
Working Plan No. 15, Jarrahdale	27,000

The revision of the Collie Working Plan is nearing completion.

Working Plans for Lowden, Dwellingup and Marrinup Working Circles and Applecross and East Harvey Pine Plantations, are in course of preparation.

V. SILVICULTURAL NOTES.

(1).—*Indigenous Species.*

Reforestation operations continue to show the importance of seed years in securing a plentiful crop of seedlings by natural regeneration.

The first heavy fruiting of Tuart (*Euc. gomphocephala*) reported since 1918, occurred during the past year and has resulted in a satisfactory germination under mother trees.

With the exception of the Jarrahwood district, the crop of jarrah seed (*Euc. marginata*) in prime forest areas was extremely light. In prime jarrah forest general seed years would appear to occur at least every three years. At the same time no definite periodicity is known and cases are on record where heavy crops of seed have been borne in successive years. Scrub jarrah on the coastal sand plain appears to seed freely practically every year. Under normal conditions seed is not distributed much further from the base of the mother tree than a distance approximately equal to the height of the tree, and, in consequence, practically every jarrah of any size which is ultimately to be ringbarked, must be saved as a seed tree until seedlings are on the ground. A heavy fire when the seed is ripe, but before it falls, is found to provide the most favourable conditions for natural regeneration. The main reasons for this burning are not generally understood, but experiments would appear to indicate that the following are the most important:—

- (1) Fire, by destruction of the woody undergrowth, to a great extent frees the seedling during the early stages of its growth from intense root competition.
- (2) Innumerable insect pests are destroyed in the fire.
- (3) The fire causes a heavy and simultaneous fall of seed by the drying effect of the hot air on the seed vessels, which still adhere to the mother tree.

An interesting discussion on the effect of advance burning on the fruiting of jarrah has occurred during the year. Some officers maintain that advance burning carried out before trade cutting operations commence (not to be confused with burning prior to seed fall) has a serious adverse effect on the formation of buds and flowers, and consequently lessens the crop of seed produced in the following season. The present heavy seed crop in the Yarloop district does not bear out this contention. Areas burnt over by a slow fire in November, 1924, now show not only a very heavy crop of well formed fruits, but also a heavy crop of buds which will flower in the coming spring. The mild and dry winter would have appeared to influence this seed as the vessels are unusually well formed and large for this time of the year.

Sample plots established in the Mundaring district show that areas treated for regeneration in January, 1924, resulted in a heavy crop of jarrah seedlings. As many as 80 seedlings to the square yard were found over considerable areas. During the following summer, 80 per cent. of seedlings died, leaving 10 to the square yard. Although to local observers this heavy mortality may appear disastrous, it is to be hoped that the present average of 10 to the square yard will be still further reduced by natural means. The average of these seedlings are now 3 to 4 inches high, while some have reached a height of 10 inches. Heavy frosts during the winter will probably kill off a number of these seedlings.

(2.)—*Exotic Species.*

Unexpected difficulty has been experienced in developing nursery practice. Conditions which proved very satisfactory for flowers and vegetables have not resulted in the even and sturdy growth of pine seedlings desired. Heavy watering in summer months has not proved a solution of the problem. Better results are being obtained in nurseries which have been cultivated continuously for several years. Old clearings which have not been cultivated for some years have the disadvantage of heavy weed growth. For this reason one season must elapse between the time of acquiring the ground and the sowing of the seed so that the weeds may be kept down by constant cultivation.

The shading of beds of open root pines during summer months would appear from the few experiments tried, to result in more even and satisfactory growth, but the shade must be provided early before the spring growth ceases. More extensive and complete experiments will be tried during the coming season.

Planting practice has shown that the most satisfactory results are obtained with comparatively large and sturdy plants, provided they are well planted.

Owing to the excessively dry soil conditions in summer, all forms of cheap planting such as spearing and notching gives unsatisfactory results under local conditions. A sturdy plant with a well developed root system spread naturally in planting is necessary.

On sand-plain country, especially where the sand is white in colour, young pines are seriously damaged by sun-scorched ground level. In consequence, two-year old planting stock with well developed bark is advisable in planting out *Pinus pinaster* on this class of country. This may explain the comparative failure of broad-casting on sandplain country.

The following measurements of *Pinus insignis* planted out at 6ft. x 6ft. apart on old cultivations at Mundaring in the 1922 season give some indication of what is possible on good soil under local climatic conditions. On the lower slopes odd trees have attained a height of 20 feet and a girth of 13 inches at 1 foot from the ground. The average height throughout is 9 feet and the average girth 7.2 inches.

VI. ARBORICULTURE.

76,063 plants were raised at Hamel Nursery during the year. Of these, 42,063 were sold at cost price to persons residing outside the metropolitan area, for a total of £543; 6,170 were distributed free to public bodies and charitable institutions, and 11,935 sent out to arboreta and experimental plantations.

An arboretum, 2½ acres in extent, was established at Manjimup, near the forester's quarters. The ground was cleared, ploughed and fenced, and in June 16 different species of pines were planted.

In November, 1924, two junior assistant foresters, who had been through a course of training as apprentices at Ludlow Forest School, were sent to South Australia, with a view to their obtaining wider experience in plantation work under dry conditions than is possible in this State. These officers spent four months gaining practical experience in various forests, and at the conclusion of the course (March,

1925) one went to Victoria to get first-hand information concerning the very successful school plantation scheme established in that State. The purpose of this trip was to fit the officer in question for work in connection with the promotion of arboriculture generally in farming areas and for advisory work in the establishment of school plantations in this State.

VII. FIRE CONTROL NOTES.

Results, so far, have shown that the system of fire control established for this State has proved effective with regard to general principles originally adopted. Efforts were accordingly directed to increasing efficiency by improving the details of organisation and methods.

The success of fire-control measures depends largely on the efficiency of the look-out tower.

With the single range-finder system, the exact location of a fire cannot be obtained, unless the actual site can be seen from the tower, because it is only possible to range on to some definite object such as a tree trunk, and not smoke.

The position of fires hidden by ridges from the tower, and the higher smoke only of which can be seen, cannot be determined with the range-finder. The distance to such fires can only be estimated, necessitating amplification of the system of location by patrol to investigate smoke arising in such situations.

With the cross-bearing system, the location of a fire is determined by cross-bearing taken on the smoke, and consequently a view of the actual site of the fire is unnecessary.

Telephonic communication is provided between headquarters, fire tower, and overseers' houses. The lines are tapped by working parties using field telephones.

The advantages of the telephone are that no training is required for its use, and that with it detailed information can be obtained. However, unless the present high cost of establishing a telephone system can be reduced, communication by telephone must be supplemented by some other means.

The heliograph has proved its value, but its use requires a little training and the knowledge of the Morse code. It is difficult to provide this training on account of the fact that the personnel of the fire-fighting gangs is constantly changing. With the erection of houses for employees this disadvantage will be decreased to some extent.

There is a fairly general prejudice against the heliograph on account of lack of knowledge of the instrument, its possibilities, and use. The instrument has often been wrongly condemned for failure and mistakes, due entirely to failure of officers in charge to provide short instructional courses in its correct use.

The work in the past has been so organised that the gangs in the bush have been working either in proximity to the telephone lines or high points from which heliograph communication with the look-out towers could be maintained.

In time greater distances must separate the men working in the bush from existing telephone lines and heliograph stations.

Communication by wireless being independent of the topography of the country, it is hoped that where several men are working together in a gang it will prove efficient and economical to provide such a gang with a portable receiving set. Messages would be transmitted from a more or less central

main station, probably the local headquarters. Experiments were conducted at Collie during last summer with a transmitter, fitted to a hand generator established at the tower and two-valve receiving sets, which were tested intermittently for four months at stations in the bush varying in distance from one to ten miles from the tower. The results obtained were disappointing, as regular communication could not be maintained to any point in the bush. Screening, due to the close proximity of trees in the transmitting station, is considered to be the chief obstacle. Further experimental work was deferred until next summer, when the transmitter will be installed at the forest headquarters in the town of Collie to avoid the screening effect.

In connection with equipment, great difficulty has been experienced in obtaining a type of rake suitable for use among stones and scrub. Rakes for carrying on a saddle must be fitted with an eye socket, as on a mattock, in order that handles must be inserted in the bush.

Departmental employees engaged on forest work are trained in fire-fighting and general fire-control methods, and are used as a nucleus of a fire-fighting force obtaining assistance from settlers and other local residents.

Casuals so employed, although willing, are, on account of lack of training, usually considerably less efficient than regular employees.

The fire-control circulars originally issued were revised for the past season, embodying instructions based on the experience obtained since the inception of fire-control measures in this State.

Preliminary burning is of value in fire-control for the following reasons:—

- (a) The reduction of hazards, particularly where country before burning is very inflammable, such as that carrying a dense growth of blackboys.
- (b) The aid in fire-fighting when used as—
 - (i) Pivot points from which a back-fire can be lighted instead of from an open flank.
 - (ii) Impassable barriers towards which a serious conflagration can be diverted if required.

The policy adopted during past seasons was the burning of blackboy flats, creeks and other waste areas. Last season great difficulty was experienced in burning these types of country, owing to the fact that rains continued until late in the calendar year, and after they ceased the summer set in almost immediately. In consequence of these conditions, the low lying flats, creeks, etc., would not carry a fire until the surrounding jarrah country became very inflammable. During such seasons in future it will be necessary to burn strips of jarrah country adjacent to blackboy flats and creeks, in order that the latter may be burnt during the summer with comparative safety. This problem of varying seasons presents little difficulty while treated country is limited, as a considerable area of prime forest awaiting treatment can be burnt by slow fires. It is anticipated that later, when the whole forest has been regenerated, the areas first treated will have reached that stage when a ground fire may be run through portions of them with little or no damage to the new crop.

In order to reduce fire hazards following silvicultural operations which involve the ringbarking of comparatively large areas, it has been decided not to

carry out regeneration cleaning within 5 chains of the boundary of each compartment. The average area of a compartment is 500 acres, and it is proposed, where necessary, to burn the 5-chain strips around compartments treated in alternate years. In all new Working Circles the work of clearing up old tramway formations and whim tracks is being expedited in order that these tracks, which are used as compartment boundaries, may form a network of roads for access in exploitation, fire fighting, and also serve as fire lines from which back fires may be started in cases of emergency.

VIII. RESEARCH AND INVESTIGATION.

(1.)—*Wood Technology Investigations.*

With the completion of the development of data relative to the kiln-drying of jarrah for high-grade purposes, the problem of the seasoning of jarrah flooring has come under consideration. The output of this product aggregates about 40 or 50 million running feet per annum. At some 25 stacking yards widely distributed throughout the South-West it is, under existing conditions, air-seasoned for periods varying from four to 18 months.

It was evident from the outset that kiln-drying with delicately controlled kilns would be too expensive a proposition for material of this kind, while with drying plants of a cheaper and cruder type, the somewhat refractory nature of jarrah precluded the possibility of drying timber green from the saw. A combination of air and kiln seasoning seemed to provide a solution to the flooring seasoning problem. To understand the possibilities of such a system it is essential to bear in mind that the most difficult period in seasoning timber, and the period which requires the greatest expense of construction and operation to provide delicacy of kiln control is the period in the early stages of drying, when the "free" moisture, or the moisture which gives timber its "green" appearance is being dried out. Superficial observation of the results being obtained with the air-seasoning of jarrah flooring indicated that this period can successfully be accomplished under ordinary atmospheric conditions. Moreover, inspection of the meagre information available on the rate of drying showed that, while this initial dangerous stage was passed at a rate at least comparable with that obtainable in the kiln, the removal of the rest of the moisture in the wood was accomplished only at an extremely slow rate. The situation may, therefore, be briefly stated as follows:—On the one hand, the initial stages of drying which necessitate kilns of a complex and expensive type can, in the case of flooring timber, readily be carried out in a reasonable period by air-seasoning, while, on the other, the final stages which prolong air seasoning to such an extent, can be covered rapidly and satisfactorily in a cheap and simple type of kiln. The advisability of investigation into a combined method is therefore evident.

For the combined system to be a sound commercial proposition, it is essential that it should have very appreciable advantages not only over existing air seasoning methods, but also over any improved standard to which the existing practices of air-seasoning might readily be capable of being raised. The results of the kiln drying tests in this State provide a definite basis for computation as far as that section of the combined method is concerned, but, unfor-

tunately, in the case of air-seasoning there is almost an entire dearth of information. For this purpose alone, therefore, an investigation into air-seasoning is warranted, and when the present wide variation in stacking methods and periods allowed for seasoning is considered, it must be admitted that such an investigation, even from the air-seasoning standpoint alone, is long overdue.

On account of the multiplicity of the variables, such as stack heights and widths, direction of stacking, types of foundations, thickness and frequency of spacing strips, etc., the study of air seasoning is a very complicated one. In other countries the problem has been investigated by the laying down of large numbers of test stacks in which the various variable features are isolated and studied independently. Such a system might be adopted in this State by erecting the test stacks at some place such as the vicinity of the experimental kiln at Crawley, but the enormous amount of timber required would make the cost of such a method excessive. In addition, there could be no assurance that the conditions would be representative of those likely to prevail throughout the timber areas. Neither could the test be carried out by laying down such test stacks at existing yards, for the number of stacks required would be so great that no yard could provide sufficient timber without serious interference with its normal activities. It was, therefore, decided to carry out a test in the first place by studying the effect of the factors existing at present throughout the State with a view to reducing the number of variables. This would permit of the use, at a later date, of a limited number of test stacks to confirm results and to finalise knowledge of the effect of the few remaining variables. At 16 representative stacking yards, observations relative to stacking conditions and measurements of the rate of seasoning are, therefore, being carried out.

As the investigation consist chiefly in the study of the effect upon the drying rate of the various factors, determination of the moisture content of stacks and the subsequent changes of this moisture content becomes the cause of the whole test. With the exception of the minor case of stacks being demolished, when moisture contents are obtained by direct test, the system of tracing the changes in moisture content of the stacks consists entirely in the placement and observation of "sample" or "specimen" boards. These boards are short lengths of timber in the stack, selected so as to be representative of the timber in the stack. After determination of moisture content, in order to make the short sample truly representative of an ordinary long board, the ends are coated with paraffin wax to prevent end drying. By weighing the sample board, its moisture content can be determined, so that periodical weighings enable its changes in moisture content to be followed and so indicate the rate of seasoning of the timbers in the stack. These specimen boards are prepared in two different ways. In the case of stacks already erected, a keyhole saw is used to cut a short length from a board in a stack, and this piece, after moisture determination and treatment, is returned to the position from which it was cut. On the other hand, in case of stacks in the course of erection, a number of sample boards are cut from a long piece of timber, selected from the timber being stacked, and arrangements are made with the stackers whereby spaces

are left for the insertion of these sample boards in definite positions after they have been prepared.

At the commencement of the investigation, a field party visited each of the stacking yards in turn. Sample boards were placed throughout a large number of the existing stacks, and in any stacks in the course of erection, while tests were taken on boards selected from stacks being demolished. In addition, full details of yard layout and stacking methods were obtained. At the completion of this work, an officer was sent throughout the circuit, re-weighing sample boards, placing samples where necessary in new stacks, and in stacks being erected, testing stacks being demolished, and collecting any further information available. This circuit, which takes about one month to complete, is being repeated continuously, so that observations are made throughout all the stacking yards approximately at monthly intervals.

The determination of moisture content is made by cutting small sections from the timber, weighing, drying out thoroughly, and re-weighing. These sections, after being cut and weighed at the stacking site, are forwarded to head office. Here the sections are dried out in electric ovens installed for this purpose, and the collection and correlation of all data is carried out. Meteorological information is obtained daily from the Commonwealth Bureau, and to supplement this, readings relative to temperatures, humidities, etc., are obtained from recording stations established at various schools throughout the stacking area.

On account of the long time probably necessary for the seasoning of jarrah, and because of the widely differing conditions of summer and winter the test has not yet proceeded for a sufficient length of time for results to be available. As far as combined air and kiln seasoning is concerned, it is hoped in the near future to carry out a series of tests with a simple type of kiln which has been designed especially to suit the drying of timber which has previously been air-seasoned. From the observations to date, it is anticipated that it will be possible to season timber more thoroughly, and at a lower cost, than can be done with the existing air-seasoning methods.

Of recent years considerable progress has been made in the science of the preservation of timber. The extraordinary durability of jarrah makes this study of little interest as far as our principal timber is concerned, but in the case of karri preservation is of great importance. The method of treatment at present in use in this State is the powellising process. Although this process has given some very satisfactory results, it is desired to test the economy and relative efficacy of existing methods.

Several years ago an investigation into the powellising process was commenced by the Forest Products Laboratory, but, owing to the cessation of the activities of that institution in this State, the tests were discontinued. At the beginning of the period under review the committee agreed to carry out an investigation for the State Saw Mills with a view to continuing the earlier tests. With the co-operation of the Railway Department, this investigation has been commenced, but owing to the large amount of preliminary chemical investigation necessary, sufficient advance has not been made to justify the publication of results.

In the report for the previous year reference is made to a test on the effect of powellising upon the

bending strength of karri, which was subsequently kiln dried. During the year under review a further contribution was made to the information available by the completion of a series of transverse bending tests on powellised and untreated karri, which was subsequently air dried. In these tests, as in the former ones, it was found that, while powellising seemed to result in a very slight lowering of the modulus of elasticity, it appeared to have little or no effect upon the strength of the wood. It is worthy of note also that these two series of tests give an opportunity for studying the effect of kiln drying upon the strength of karri. It is often stated that kiln drying has the effect of reducing the strength of timber, but the present tests indicate that, as far as the bending of karri is concerned, such a statement is without foundation. This result is in accordance with those obtained from exhaustive tests in other countries, which indicate that, providing the kiln drying conditions are moderate, the strength of the resulting kiln dried product is equal to, and, in a few cases greater than, that of the air seasoned material.

Permanent office accommodation, adjacent to the Stores Branch of the Department, has been obtained for the officers of the Research Branch, and here also will be located a Trade and Technical Museum.

Much remains to be done to interest people, both locally and overseas, in the use of jarrah and karri for higher grade purposes than sleepers. In the past this work has been attempted with the help only of intermittent displays at different exhibitions. A limited stock of exhibits, many dating from 20 years ago, have been stored as so much lumber and brought to do duty on innumerable occasions. Such a method of exhibition has been both expensive and ineffective, and the need for a permanent museum, which in addition would form a storehouse from which material for exhibits could readily be drawn, has long been felt. Similarly, no place has been available where specimens of technical interest may be safely collected and grouped so as to be of the maximum value. For instance, an exhibit demonstrating the method of testing for moisture content is urgently required, since, although these tests are simple, require little equipment, and are of incalculable value to the manufacturer requiring seasoned timber, their value and simplicity cannot be appreciated unless they have been demonstrated.

Research work has been carried out under the direction of the Wood Technology Investigation Committee. The Committee sustained a very severe loss through the death of one of its members, Associate Prof. A. Tomlinson, who has displayed a very keen interest in wood technology for many years. It is desired to place on record an appreciation of the great value of Professor Tomlinson's services in advancing our knowledge of the qualities and correct uses of local timbers. The Committee now consists of Mr. S. L. Kessell (Chairman), Professor H. E. Whitfeld, and Professor N. T. M. Wilsmore.

The thanks of the Department are due to Professors Whitfeld and Wilsmore for their valuable assistance.

2. MARRI KINO INVESTIGATION.

No satisfactory method of tapping *Eucalyptus calophylla*, in order to obtain a heavy and sustained flow of kino, has been evolved. Negative results in

tapping experiments have considerably increased our knowledge of the phenomenon.

The periodicity of kino production has corresponded with that shown during the preceding twelve months. From September the production of kino steadily increased until it was in full flow during December, January, and February. In March the flow suddenly ceased, but, unlike the previous year, the trees became active during April and May, and after that remained dormant. It is suggested that bright and mild weather was responsible for renewed activity during April and May, and observations would appear to indicate that borers and all classes of insects shared in this unusual period of renewed activity.

Mr. W. E. Champion, who has been engaged on this work, is satisfied concerning the pathological origin of gum veins, and holds the view that the changes produced are the result of chemical action probably not associated with the presence of a living organism in the tissue. He suggests that the chemical equilibrium within damaged tissue is upset by an excess of carbon dioxide, resulting in an end product the mixture of tannin and colouring matter commonly known as Marri Kino. It is hoped to produce a bulletin at an early date giving more precise information concerning this research work.

Mr. L. W. Phillips, M.Sc. of the Perth Technical School, has carried out some valuable research work in the chemistry of Marri Kino. As this work is still proceeding, any mention of results obtained would be premature; but the thanks of the Department are due to Mr. Phillips for the great assistance already rendered in this connection.

A Microscopical Examination of the Timbers of Jarrah (*Euc. marginata*) and Karri (*Euc. diversicolor*).

Microscopical examination, associated with chemical tests, has failed to provide any reliable and easily applied method of differentiating between these timbers, despite their difference in physical properties and durability. Normal specimens of these two timbers are easily identified by persons accustomed to working, or even handling, them; but specimens frequently occur which it is quite impossible to identify by ordinary means. Fortunately, the trees are very distinct and their habitats separated sufficiently to prevent confusion in the trade; but the work was undertaken with a view to establishing a reliable test to meet all cases.

It would appear that after examining some dozens of specimens an experienced investigator accustomed to microscopical examinations of timbers would have no difficulty in correctly identifying samples of either timber, but the decision would of necessity be based on a number of factors considered together rather than on any specific character.

As a guide to future investigators the differences noted are listed hereunder:—

	KARRI.	JARRAH.
Fibres :		
Lumen nearly always un-		Lumen always blocked.
choked.		
Tyloses never occur.		Tyloses common.

	KARRI.	JARRAH.
Pores :		
Usually larger than Jarrah.		Usually smaller than Karri.
Tend to a radial arrangement and scattered.		Tend to an arrangement in seasonal bands.
Parenchyma :		
Around pores, and scattered.		Rare (scattered) or nil.
Medullary Rays :		
Usually smaller than Jarrah.		Usually larger than Karri.
Cells tend to be small.		Cells tend to be large.

3.—ENTOMOLOGICAL INVESTIGATION.

Problems of forest entomology have been dealt with by the Government Entomologist (Mr. L. J. Newman) and field investigations carried out by the Assistant Government Entomologist (Mr. J. Clark).

Important advances have been made in our knowledge of the life histories of the more important forest pests. Complete information is now available concerning the Jarrah Leaf Miner (*Timea sp.*); the Marri Borer (*Trypopharia hamata*), the Pinhole Borer (*Atractocerus kreuslerae*), and the Tuart Bud Weevil (*Haplonyx tibialis*). Considerable attention has also been given to the Cossid Moth larvæ, which cause considerable damage to jarrah and marri.

The work of the entomologists would appear to indicate that ants are not of any great importance as a factor influencing natural regeneration owing to their habit of seed collecting for either food or nest building. Many local foresters hold the contrary view, and the question cannot be regarded as settled definitely, but several careful investigations have failed to disclose eucalypt seed stored in the nest of harvesting ants. Up to the present, the only ant found to make any use of eucalypt seed was the Twig mound ant (*Iridomyrmex conifer*). Apparently this ant only uses these seeds among other materials, such as twigs, small pebbles, pieces of charcoal, and other light material it can drag to the nest. This collection of small debris is used only in the construction of the above ground portion of the nest. The seeds so used are not eaten and might be recovered or sown broadcast by scattering the nest. This ant should not be destroyed on account of its seed gathering activities, as it is a great insect feeder and destroys countless destructive insects.

Work has proceeded in connection with the collection and identification of Termites. In trees still growing, although not necessarily in living tissue, the following species have been found:—

- Coptotermes on Jarrah, Tuart and Marri.
- Leucotermes on Karri, Jarrah, Tuart, Wandoo and Marri.
- Calotermes on Karri, Tuart, Wandoo, and Banksia.

Imported timber, particularly from tropical countries, has been inspected, and logs found infected with prohibited borers have been destroyed.

IX. LEGISLATION.

AMENDMENT TO FORESTS ACT, 1918.

A short amending Act came into force on 16th January, 1925. This Act provides that revenue from sandalwood during the period 1st July, 1924, to 30th

June, 1925, shall be excluded from the provisions of Section 41 (2) of the principal Act and shall pass into general revenue, with the stipulation that one-tenth of the revenue received from sandalwood, or £5,000, whichever shall be the greater, shall be paid into a trust account for expenditure on works connected with the preservation and reforestation of sandalwood.

Judging from the discussion when this amending Act was under consideration, it would appear that the deplorable state of our forests is not generally realised. Where they should be showing an average annual increment of at least 75 cubic feet per acre per annum, it is questionable whether they are growing at the rate of five cubic feet of sound timber per acre per annum. Heavy uncontrolled cutting has resulted in overmature trees and useless species being left in possession of hundreds of thousands of acres. Natural regeneration has followed cutting operations on many areas; but frequent fires have resulted in a hundred malformed saplings for every straight pole.

£25,000,000 worth of timber has been cut from the forests and less than £100,000 has been spent on their perpetuation. The first reforestation work was started in 1920, and there are seventy years leeway to be made up. The Department has no large reserve of funds accumulating and the problem of the future, now that trained administrative staff is available, is to confine work urgently requiring attention to the limits prescribed by funds available.

AMENDMENTS TO REGULATIONS.

Three minor amendments were gazetted during the year.

Owing to a necessity which arose for a reprint of regulations, it was decided to consolidate the whole of existing regulations and regazette in a more concise form. This work was carried out, and the new regulations now known as the "Forest Regulations, 1925," were gazetted on 19th June, 1925.

X. ADMINISTRATION.

The staff of the Department has been gradually strengthened as the services of suitable men have become available. The first apprentices, who entered into indentures in 1917 and 1918, have been promoted to Assistant Foresters, and the capabilities of these junior officers would appear to fully justify the scheme of training adopted.

The principle of establishing resident workmen on defined areas of forest under treatment has been adopted, and to meet new conditions, a new grade designated "Resident Overseers" has been created. Partly owing to the large amount of work offering in the timber industry and partly owing to the fact that the importance of such positions in the Depart-

ment is not yet generally appreciated, there has been difficulty in certain districts in obtaining suitable men. Improved wages, however, are now being offered and more publicity given to the need for experienced men, so that it is anticipated that little difficulty will be experienced in the future.

A resident overseer's "range" in the jarrah forest usually consists of 5,000 to 10,000 acres of cut over bush, on which such officer will control operations and carry out necessary tree-marking as directed by the District Forester. As the basis of all work in the jarrah bush is the marking of mature and overmature timber on the Group Selection System for trade cutting and the ring-barking of useless trees under silvicultural rules, a thoroughly practical and experienced bush worker is necessary for the position. As a good type of house is being erected and facilities will be provided for a small grass paddock, home orchard and vegetable garden, first-class men should be attracted to the work.

(a) Appointments.

Mr. T. N. Stoate, B.Sc., was promoted to the position of Working Plans Officer as from 1st January, 1925.

Mr. A. D. Helms, M.D.F.F., was appointed Divisional Forest Officer as from 28th August, 1924.

Mr. S. A. Clarke, B.E., was appointed to the permanent staff as "Officer in Charge of Wood Technology Investigation" as from 1st November, 1924.

Two probationers with professional qualifications have been employed on field work in connection with the preparation of Working Plans.

The number of Assistant Foresters has been increased by 17.

Eight new apprentices entered into indentures.

Two additional draftsmen have been employed, and extra clerical assistance has been found necessary to cope with the work of the office.

(b) Resignations and Transfers.

One draftsman and one clerk have been transferred to other departments.

Two apprentices were released from indentures.

Rapid expansion of field operations has again caused much extra work, and results obtained indicate the enthusiasm with which the whole of the staff, both in the field and office, have endeavoured to assist in the progress. In concluding this report I desire to express my appreciation of the keen interest shown by all grades of the service in the work and welfare of the Department.

S. L. KESSELL,

Conservator of Forests.

Forests Department,

Perth, 1st September, 1925.

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APPENDIX 1a.

General Statement of Revenue and Expenditure for the Year ended 30th June, 1925.

Dr.		£ s. d.		£ s. d.		30th June, 1925:		£ s. d.		Cr.	
30th June, 1925:						By salaries of office and Administration Field Staff		8,397 14 9		£ s. d.	
To Log royalty from Permits granted under Section 11 of "The Land Act, 1898," and Leases and a Concession now on royalty basis—											
Jarrah	51,475	1	10								
Karri	7,538	13	6								
				59,013	15	4					
„ Log royalty from Permits granted under the "Forests Act, 1918"—											
Jarrah	30,428	3	7								
Banksia	1	15	3								
Sheoak	117	4	0								
				30,547	2	10					
„ Miscellaneous royalties—											
Piles and Poles	211	18	10								
Hewn sleepers (Forests Act)	6,276	18	6								
Hewn sleepers (Land Act)	3,530	1	5								
Firewood	408	14	0								
Beams	65	11	8								
Illegally Cut Timber	186	12	7								
Hewn Timber (other than sleepers)	328	8	11								
Posts	22	12	0								
Sundries	11	4	0								
				11,042	1	11					
„ Sandalwood—											
Royalty	38,720	6	10								
Roots and Butts	6,434	17	7								
Confiscated Wood	2,355	11	11								
				47,510	16	4					
„ Inspection Fees—											
Hewn sleepers, Crown Lands	2,813	8	2								
Sawn sleepers, Crown Lands	3,770	0	6								
Sawn timber, Crown Lands	1,170	14	4								
Hewn sleepers, private property	5,769	8	10								
Sawn sleepers, private property	2,095	12	6								
Sawn timber, private property	755	5	1								
Piles and Poles	240	7	4								
Miscellaneous (including Beams and re-inspected sleepers)	160	12	6								
				16,775	9	3					
„ Rents—											
Concessions	50	0	0								
Leases	4,060	0	0								
Tramways	936	15	6								
Sawmill Sites	133	5	0								
Forest Leases	150	11	2								
Cottages	160	1	0								
				5,490	12	8					
„ Sales—											
Tuart	4,596	9	9								
Trees	542	18	9								
Branding hammers	162	5	0								
Publications	8	3	0								
Confiscated timber	9	12	6								
Miscellaneous	321	12	7								
				5,641	1	7					
„ Miscellaneous Revenue—											
Registration Fees	523	3	0								
License Fees	410	0	3								
Exemption Fees	39	5	6								
Sundries	123	8	9								
				1,095	17	6					
Total Net Revenue				177,116	17	5					
Sandalwood Trust Fund				5,000	0	0					
Mining Leases Royalties				646	16	7					
Total Collections				£182,763	14	0					
									£182,763	14	0

APPENDIX 1b.

Forests Improvements and Reforestation Fund as at 30th June, 1925.

Section 41 (2) "Forests Act, 1918."

Dr.		£	s.	d.		Cr.
30th June, 1925:					1st July, 1924:	£ s. d.
To Working Plan No. 1	...	7,592	19	4	By Balance brought forward	71,545 8 5
" Working Plan No. 2	...	10,738	4	1		
" Working Plan No. 3	...	6,845	0	5	30th June, 1925:	
" Minor Working Plans	...	2,548	16	10	By Three-fifths of net revenue in accordance with	76,219 18 6
" Research and Investigation	...	1,183	7	4	Forests Act, 1918	
" Arboriculture	...	182	10	11	" Sundry Recoups	108 13 6
" Sandalwood Propagation	...	2,425	19	6		
" Education of Apprentices	...	2,933	1	6		
" Popular Education	...	135	0	3		
" General Equipment and Incidentals	...	5,634	0	8		
" Advertising and Publicity	...	359	13	3		
" Salaries and Allowances	...	7,841	18	3		
" Top Disposal Operations	...	3,092	7	2		
" General Housing	...	1,945	14	3		
" Topographical Survey	...	2,722	12	6		
" Refund to Treasury (Sandalwood Adjustment)	...	9,315	11	0		
" Balance Carried forward	...	82,377	3	2		
		£147,874	0	5		£147,874 0 5
					1st July, 1925:	
					By Balance brought forward	82,377 3 2

APPENDIX 1c.

Statement of General Loan Fund for Year ended 30th June, 1925.

Dr.		£	s.	d.		Cr.
30th June, 1925:					30th June, 1925:	£ s. d.
To Purchase of Land	...	447	10	1	By amount provided by Treasury Department	1,000 0 0
" Pine Planting	...					
<i>Ludlow—</i>						
Salaries	...	263	0	10		
Allowances	...	49	19	10		
Permanent Plant	...	21	18	5		
Raising Plants	...	5	6	8		
Clearing for Planting	...	68	8	9		
Cost of Planting	...	20	6	8		
Administration	...	29	5	3		
Maintaining Firebreaks	...	30	6	8		
Experimental Work	...	21	15	2		
				510	8	3
<i>Nangara—</i>						
Establishment of Nursery	...	39	5	11		
Preparation of Soil	...	2	15	9		
				42	1	8
		£1,000	0	0		£1,000 0 0

APPENDIX 1d.

Mining Leases Royalty Account for Year ended 30th June, 1925.

		£	s.	d.		£	s.	d.
30th June, 1925:					1st July, 1924:			
To Silviculture	...	252	0	3	By Balance brought forward	2,263	17	11
" Fire Control (Capital)	...	66	14	1	" Royalties collected during year	646	16	7
" Fire Control (Maintenance)	...	274	7	6				
" Administration	...	56	8	5				
" Utilisation	...	48	1	10				
" Clearing for Planting	...	41	14	3				
" Raising Plants	...	36	4	2				
" Establishing Nursery	...	2	6	1				
" Balance carried forward	...	2,132	17	11				
		£2,910	14	6				£2,910 14 6
					1st July, 1925:			
					By Balance brought forward	2,132	17	11

APPENDIX 1e.

Sandalwood Trust Fund for Year ended 30th June, 1925.

30th June, 1925 :	£	s.	d.	30th June, 1925 :	£	s.	d.
To Kalgoolie and Districts	518	16	6	By Amount received in accordance with Forest Act	5,000	0	0
„ Southern Cross	451	9	8	„ Sundry Recoups	0	19	0
„ Cocanerup	192	12	6				
„ Bending	155	15	11				
„ General Expenses	328	15	11				
„ Balance carried forward	3,353	8	6				
	£5,000	19	0	1st July, 1925.	£5,000	19	0
				By Balance brought forward	£3,353	8	6

APPENDIX 1f.

Statement of Timber Inspected by the Inspection Branch of the Forests Department during the year ended 30th June, 1925.

Timber Inspected.	Inspection Fees.	
	Cubic Feet.	Amount.
Sawn sleepers	2,933,333	£ 5,865 13 0
Hewn sleepers	4,282,392	8,582 17 0
Sawn and Hewn timber	637,847	1,925 19 5
Piles and Poles	38,484	240 7 4
Miscellaneous Timbers	(lineal feet)	160 12 6
(including Beams and Re-inspected sleepers)		
...		16,775 9 3

APPENDIX 1g.

Revenue and Expenditure.

The following statement shows the Revenue and Expenditure of the Department since its inception in 1895:—

Year.	Revenue.	Expenditure.					Total.
		Consolidated Revenue Fund.	General Loan Fund.	Reforestation Fund.	Mining Leases Fund.	Sandalwood Trust Fund.	
1st January to 31st December, 1895	£ 3,175	£ 1,108	£	£	£	£	£ 1,108
1st January to 31st December, 1896	4,839	2,021					2,021
1st January to 31st December, 1897	12,320	3,490					3,490
1st January to 31st December, 1898	30,150	3,356					3,356
1st January to 31st December, 1899	17,000	2,438					2,438
1st January to 31st December, 1900	15,526	2,649					2,649
1st January to 31st December, 1901	18,478	2,747					2,747
1st January to 31st December, 1902	18,753	4,301					4,301
1st January to 31st December, 1903	20,478	3,789					3,789
1st January to 31st December, 1904	20,019	4,193					4,193
1st January to 31st December, 1905	18,480	5,090					5,090
6 months, 1st January to 30th June, 1906	10,974	3,385					3,385
1st July, 1906, to 30th June, 1907	22,783	6,208	20				6,228
1st July, 1907, to 30th June, 1908	23,499	8,802	443				9,245
1st July, 1908, to 30th June, 1909	29,484	9,031	584				9,615
1st July, 1909, to 30th June, 1910	31,549	8,531	1,833				10,364
1st July, 1910, to 30th June, 1911	37,477	8,863	2,888				11,751
1st July, 1911, to 30th June, 1912	44,561	10,469	3,135				13,604
1st July, 1912, to 30th June, 1913	48,237	11,463	3,842				15,305
1st July, 1913, to 30th June, 1914	53,039	12,093	4,432				16,525
6 months, 30th June to 31st December, 1914	22,906	5,469	1,063				6,532
1st January to 31st December, 1915	45,726	8,870	1,399				10,269
1st January to 31st December, 1916	29,821	9,575	911				10,486
1st January to 31st December, 1917	36,129	10,263	842				11,105
6 months, 1st January to 30th June, 1918	22,113	6,199	268				6,467
1st July, 1918, to 30th June, 1919	42,051	10,873	594				11,467
1st July, 1919, to 30th June, 1920	59,220	12,962		7,241			20,203
1st July, 1920, to 30th June, 1921	75,469	16,128	11,742	*50,673			78,543
1st July, 1921, to 30th June, 1922	†88,530	16,439	2,324	27,794	965		47,522
1st July, 1922, to 30th June, 1923	†87,658	15,246	1,779	21,563	238		38,826
1st July, 1923, to 30th June, 1924	†127,253	15,835	873	31,625			48,333
1st July, 1924, to 30th June, 1925	†182,764	17,816	1,000	†65,497	778	1,648	86,739
	£ 1,300,461	259,702	39,972	204,393	1,981	1,648	507,696

* This amount includes the sum of £15,448 paid to liquidate the advances made to the Department from Land Improvement Loan Fund. † Includes Mining Timber Royalty.

‡ Includes £9,316 recouped to Treasury on account of Sandalwood Trust Fund.

It will be seen from the above statement that to the 30th June, 1925, the revenue exceeded the total expenditure by the sum of £792,765.

APPENDIX 2a.

Production of Mill Logs for Year ended 30th June, 1925.

Species.	Crown Lands.						*Private Property.		Total.	
	Concessions.		Leases.		Permits.		In Log.	In square.	In Log.	In square.
	In Log.	In square.	In Log.	In square.	In Log.	In square.				
Jarrah ...	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.
Karri ...	2,793,808	977,832	8,559,059	2,995,670	19,498,769	6,824,563	3,962,951	1,387,033	34,814,587	12,185,104
Tuart ...	...	...	...	...	5,324,522	1,437,621	276,635	74,692	5,601,157	1,512,313
Wandoo ...	...	...	...	...	127,522	44,633	1,440	504	128,962	45,137
Banksia...	...	...	...	...	490	171	...	...	490	171
Sheoak ...	...	...	...	...	2,058	720	...	...	2,058	720
Totals ...	2,793,808	977,832	8,559,059	2,995,670	24,968,070	8,312,862	4,242,237	1,462,653	40,563,174	13,749,017

NOTE.—Percentages of recovery of sawn timber from the round are:—Jarrah, 35 per cent.; Karri, 27 per cent.; and other timbers, 35 per cent.

* Reported to Forests Department.

APPENDIX 2b.

Inspected Hewn Jarrah Sleepers obtained during Year ended 30th June, 1925.

Locality.	Cubic Feet.
From Hewing Permits, Saw Mill Permits, and other Crown Lands ...	1,501,990
From Private Property Leases and Concessions...	2,780,402
Total ...	4,282,392

NOTE.—The average recovery by the hewer is 20 per cent. of the log. The above total represents 21,411,960 cubic feet in the round.

APPENDIX 2c.

Total Production of Timber for Year ended 30th June, 1925.

(Exclusive of Mining Timber, Firewood and Piles, Poles and Beams.)

Appendix Reference.	In the Log.	In the square.
Total Mill Logs (Appendix 2a)	cubic feet. 40,563,174	cubic feet. 13,749,017
Total Hewn Timber (Appendix 2b)	21,411,960	4,282,392
Total	61,975,134	18,031,409

APPENDIX 2d.

Sandalwood pulled during the Year ended 30th June, 1925.

Locality.	Quantity in Tons.
From Crown Lands, South of 26th Parallel of South Latitude	7,456
From Crown Lands, North of 26th Parallel of South Latitude	80
From Private Property	4,926
Total	12,462

APPENDIX 2e.

Forest Produce obtained from Crown Lands during the Year ended 30th June, 1925.

Description of Forest Produce.	Number.	Weight.	
		Tons.	Lbs.
Barks and Gums ... ..	...	5	...
Blackboy ... ..	...	48	...
Boronia Blossom ... ..	...	...	1,562
Charcoal ... ..	...	58	...
Fencing Posts and Rails	7,720	...	...
Total	7,720	111	1,562

APPENDIX 2f.

Mining Timber and Firewood Consumed during Year ended 30th June, 1925.

Locality.	Wood Fuel Consumed.	Mining Timber Consumed.	
	tons.	tons.	cubic feet.
Greenbushes Mining Fields	1,913	...	...
Collie Coal Fields ... ..	...	...	150,769
Metropolitan Area	165,000	...	...
Golden Mile, Coolgardie, Norseman, Kuranalling, Golden Ridge, Kanowna, Mt. Monger, St. Ives, Carbine, Gibraltar and Kurnalpi... ..	258,445	8,336	...
Northern Goldfields, Broad Arrow, Bardoc, Ora Banda, Comet Vale, Menzies, Kookynie, Laverton, Mt. Morgans, Leonora, and Mt. Magnet Districts ...	28,683	338	...
Southern Cross, Marvel Loch, Mt. Rankin, Burbridge, Westonia, Manxman, and Bullfinch Districts	2,780	50	...
Goldfields Water Supply Pumping Stations, Nos. 1 to 8	18,378	...	...
Eastern Goldfields Districts (household)	25,800	...	...
Eastern Goldfields (bakers)	8,800	...	...
Eastern Goldfields Breweries, Cordial, Confectionery, and Soap Factories ...	800	...	...
Eastern Goldfields Batteries	5,870	...	...
Eastern Goldfields Electric Power and Light	16,690	...	...
Eastern Goldfields Producer Plants and Blacksmiths (as charcoal)	4,724	...	...
Engine Wood (used on Wood Lines)	17,690	...	...
Sleepers for Goldfields Firewood Lines	* 20,000	...	...
Total	† 555,573	† 9,224	150,769

* Number of Sleepers not included in total of volumes.

† Exclusive of Mining Timber and Firewood consumed on the Murchison and other Distant Goldfields not mentioned above.

APPENDIX 2g.

Exports of Timber, Tanning Barks, Sandalwood, etc., for Year ended 30th June, 1925.

Item and Country of Destination.	Quantity.	Value.	Item and Country of Destination.	Quantity.	Value.
<i>Timber, Dressed :—</i>	cubic feet.	£	<i>Sandalwood :—</i>	cwts.	£
Commonwealth of Australia	15,365	3,641	Hong Kong	73,174	105,998
Holland	1,916	340	British Malaya	14,502	27,321
South African Union	1,541	217	China	29,077	41,882
Total	18,822	4,198	India	8,116	11,574
			Total	124,869	186,775
<i>Timber, Undressed :—</i>			<i>Tanning Barks :—</i>		
Commonwealth of Australia	4,435,546	550,483	Commonwealth of Australia	35,242	19,409
United Kingdom	1,381,116	172,563	Germany	36,081	19,587
Ceylon	401,800	44,798	Belgium	2,252	1,140
New Zealand	823,609	100,497	Total	73,575	40,136
South African Union	4,257,592	542,623	<i>Essential Oils :—</i>		
India	102,500	11,274	Commonwealth of Australia	...	9,402
Egypt	5,508	661	United Kingdom ... ..	...	26,367
Mauritius	204,017	24,152	Japan ... ..	...	1,419
Belgium	181,825	21,819	China ... ..	...	104
Holland	17,083	3,143	United States of America	...	3
Germany	14,883	1,786	British Malaya ... ..	...	52
Total	11,825,479	1,473,799	Hong Kong ... ..	...	1,574
			France ... ..	...	405
<i>Wood Manufactures, N.E.I. :—</i>			Germany ... ..	...	2,558
Commonwealth of Australia	...	7,409	Total ... ..	...	41,884
United Kingdom ... ..	...	24			
Ceylon ... ..	...	2			
Irish Free State ... ..	...	3			
Total ... ..	...	7,438			
<i>Barrels, Casks and Shooks, etc. :</i>					
Commonwealth of Australia	...	*6,490			
Total, Timber Exported	...	1,491,925	Total, Exports ... ..	...	£1,760,720

* A very large proportion of this amount represents empty returns.

APPENDIX 2h.

Timber Imports for the Year ended 30th June, 1925.

Item and Country of Origin.	Quantity.	Value.	Item and Country of Origin.	Quantity.	Value.
	cubic feet.	£		No.	£
<i>Timber, Dressed, N.E.I. :-</i>			<i>Spokes, Dressed :-</i>		
Commonwealth of Australia	1,110	497	Commonwealth of Australia	48,361	1,693
United Kingdom	8	2	United States of America ...	8,570	394
Norway	12,867	2,069	Total	56,931	2,087
Sweden	34,209	4,534			
Holland	25	2	<i>Barrels, Casks, etc. :-</i>		
British Malaya	233	32	Commonwealth of Australia	...	1,519
Total	48,452	7,136	France ... ..	...	1
<i>Timber for making Boxes and Doors :-</i>			Total ... ..	...	1,520
Commonwealth of Australia	...	94			
British Malaya	13,525	1,202	<i>Brushmaker's Woodware and Wood Tool Handles :-</i>		
Sweden	19,787	2,254	Commonwealth of Australia	...	1,071
Norway	2,858	579	United States of America ...	...	230
Germany	50	53	France ... ..	...	2
Holland	792	144	Sweden ... ..	...	24
United Kingdom	458	35	Norway ... ..	...	157
Total	37,450	4,361	Total ... ..	...	1,484
<i>New Zealand Pine :-</i>					
New Zealand	20,304	6,075	<i>Oars and Sculls :-</i>		
<i>Logs not Sawed :-</i>			Commonwealth of Australia	...	144
Dutch Borneo	583	66	United Kingdom ... ..	...	30
United Kingdom	58	5	United States of America ...	...	425
Total	641	71	Japan ... ..	...	49
<i>Timber, Undressed :-</i>			Total ... ..	...	648
Commonwealth of Australia	174,656	39,263			
United Kingdom	242	93	<i>Clothes Pegs :-</i>		
New Zealand	59	28	Commonwealth of Australia	...	1,790
British Malaya	983	285	United States of America ...	...	422
India	8,358	482	Germany ... ..	...	5
United States of America ...	276,703	56,005	Sweden ... ..	...	58
Philippines	511	221	Total ... ..	...	2,275
Russia	1,345	270			
Norway	6,794	1,554	<i>Doors :-</i>		
Japan	4,553	888	Commonwealth of Australia	No. 877	1,337
Siam	2,083	519	Norway, Sweden	674	337
New Caledonia	330	216	Total	1,551	1,674
Sweden	13,994	2,467			
Canada	3,872	854	<i>All Wood Articles, N.E.I. :-</i>		
Total	494,483	103,145	Commonwealth of Australia	...	10,194
<i>Plywood and Veneer :-</i>			United Kingdom ... ..	...	4,161
Commonwealth States ...	...	8,487	Canada ... ..	...	728
Japan ... ..	...	3,245	British Malaya ... ..	...	23
United Kingdom ... ..	...	143	Holland ... ..	...	2
Esthonia ... ..	...	46	Germany ... ..	...	371
Germany ... ..	...	109	China ... ..	...	7
Russia ... ..	...	34	India ... ..	...	31
United States of America ...	...	21	Czecho-Slovakia ... ..	...	6
Total ... ..	...	12,085	Austria ... ..	...	14
<i>Architraves and Mouldings :-</i>			France ... ..	...	107
Commonwealth of Australia	...	295	Italy ... ..	...	6
United Kingdom ... ..	...	28	Japan ... ..	...	85
Total ... ..	...	323	Switzerland ... ..	...	10
<i>Laths for Blinds :-</i>			Hong Kong ... ..	...	2
Commonwealth of Australia	...	45	United States of America ...	...	1,408
United States of America ...	...	198	New Zealand ... ..	...	1
Total ... ..	...	243	Java ... ..	...	1
<i>Picture and Room Mouldings :-</i>			Russia ... ..	...	28
Commonwealth of Australia	...	715	Total ... ..	...	17,185
United Kingdom ... ..	...	428	Total, Timber Imports	...	161,898
United States of America ...	...	178			
Germany ... ..	...	236			
Italy ... ..	...	29			
Total ... ..	...	1,586			

APPENDIX 2h.—Continued.

Item and Country of Origin.	Quantity.	Value.	Item and Country of Origin.	Quantity.	Value.
<i>Tanning Extract :—</i>			<i>Essential Oils :—continued.</i>		
Commonwealth of Australia	...	£ 288	France	...	345
United Kingdom	...	98	Spain	...	20
South Africa	...	284	Holland	...	36
Italy	...	26	China...	...	237
Holland	...	12	Ceylon	...	604
Germany	...	3	Sicily	...	35
United States of America	...	356	Italy	...	834
Total	...	1,067	Japan	...	193
<i>Tanning Barks :—</i>			Belgium	...	18
Commonwealth of Australia	cwts. 1,068	830	British Malaya	...	197
South Africa	1,611	773	India	...	10
Total	2,679	1,603	Bourbon	...	5
<i>Essential Oils :—</i>			Paraguay	...	5
Commonwealth of Australia	...	1,351	West Indies (St. Thomas)	...	5
United Kingdom	...	327	Bulgaria	...	14
			Turkey	...	8
			United States of America	...	185
			Total	...	4,429
			Total, Imports	...	£168,997

APPENDIX 21.

Summary of Timber Treated by both Forest and Town Sawmills exported from Western Australia during the Year ended 31st December, 1924.

	Jarrah.	Karri.	Other Timber.	Total.	Interstate.	New Zealand.	United Kingdom.	British India.	Ceylon.	South Africa.	Mauritius.
	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.
Logs and Spars in the rough ... ..	...	...	...	...	...	...	...	...	...	...	...
Hewn beams and piles	1,750	...	...	1,750	...	...	1,050	...	...	...	...
Undressed (7 x 2½, and over)	4,773,600	{ 679,250 †48,000 }	8,300	5,509,150	2,649,100	460,650	1,738,300	2,900	74,000	261,750	163,500
Pickets and Palings	69,100	...	...	69,100	66,350	...	...	...	...	2,750	...
Flooring Boards	508,250	...	...	508,250	480,900	26,350	1,000	...	...	...	...
Paving Blocks	194,000	...	...	194,000	159,100	...	32,400	...	...	...	...
<i>Sleepers—</i>											
Sawn	2,231,350	...	...	2,231,350	683,750	441,800	36,200	25,100	195,300	622,450	53,650
Powellised ... ..	...	215,500	...	215,500	171,050	...	...	44,450	...	...	...
Hewn	*1,282,600	...	...	1,282,600	616,750	159,550	1,850	29,000	129,250	278,050	38,800
Telegraph Arms	83,650	...	...	83,650	18,100	...	65,550	...	...	...	...
Totals	9,144,300	942,750	8,300	10,095,350	4,845,100	1,088,350	1,876,350	101,460	398,550	1,165,000	255,950
		Egypt.	Belgium.	Holland.	China.	Fiji.	Dutch East Africa.	Portugal.	Germany.	Portugese East Africa.	Mesopotamia.
		oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.	oub. ft.
Logs and Spars in the rough ... ..	...	...	...	...	...	...	...	...	...	...	...
Hewn beams and piles ... ..	...	...	700	...	...	...	...	...	...	...	...
Undressed (7 x 2½, and over) ... ..	...	10,000	72,150	28,500	21,650	11,700	...	...	3,550	11,400	...
Pickets and Palings ... ..	...	...	...	...	...	...	...	...	...	...	...
Flooring Boards ... ..	...	...	...	...	...	...	...	...	...	...	...
Paving Blocks ... ..	...	...	...	...	2,500	...	...	...	...	...	...
<i>Sleepers—</i>											
Sawn ... ..	...	1,950	...	...	117,250	...	...	...	2,300	30,850	20,750
Powellised ... ..	...	...	...	...	...	...	...	...	...	...	...
Hewn ... ..	...	...	...	3,600	8,200	...	15,700	1,850	...	...	...
Telegraph Arms ... ..	...	...	...	...	...	...	...	...	...	...	...
Totals		11,950	72,850	32,100	149,600	11,700	15,700	1,850	5,850	42,250	20,750

* Probably hewn on Concessions, etc., or shipped from Companies and Firms which own the Saw Mills.

† Powellised.

APPENDIX 2j.

Summary of Exports of Forest Produce since 1836.

Year.	Timber.		Sandalwood.		Tanning Bark.	Essential Oils.*	Year.	Timber.		Sandalwood.		Tanning Bark.	Essential Oils.*
	cub. ft.	Value.†	Tons.	Value.	Value.	Value.		cub. ft.	Value.	Tons.	Value.	Value.	Value.
1836a...	10,000	£ 2,500	...	£	£	£	1882 ...	936,500	£ 93,650	9,605	£ 96,050	£	£
1837 ...	...	...	...	...	...	...	1883 ...	997,000	79,760	7,031	56,250	...	...
1838 ...	...	...	...	...	...	...	1884 ...	861,700	68,936	2,620	20,960	...	...
1839 ...	...	...	...	...	...	...	1885 ...	848,150	67,850	4,527	36,216	...	...
1840 ...	...	...	...	...	...	...	1886 ...	626,150	50,092	3,431	27,450	...	...
1841 ...	...	...	...	...	...	...	1887 ...	354,300	28,384	4,317	34,533	...	...
1842 ...	...	...	...	...	...	...	1888 ...	525,750	42,060	4,470	33,525	...	...
1843 ...	...	...	...	...	...	...	1889 ...	788,500	63,080	6,385	57,465	...	...
1844 ...	b	163	...	...	...	...	1890 ...	1,172,200	82,052	5,136	51,355	...	...
1845 ...	...	...	4	40	...	...	1891 ...	1,273,950	89,179	3,760	37,600	...	...
1846 ...	2,550	255	32	320	...	...	1892 ...	1,082,650	78,419	5,716	42,870	...	...
1847 ...	12,200	1,120	370	4,444	...	...	1893 ...	512,950	33,888	3,893	32,160	...	...
1848 ...	3,350	333	1,335	13,353	...	...	1894 ...	1,063,700	74,304	2,784	23,430	...	...
1849 ...	...	...	...	...	...	...	1895 ...	1,255,250	88,146	3,851	30,863	...	...
1850 ...	10,500	1,048	...	...	...	...	1896 ...	1,545,600	116,420	6,843	65,800	...	...
1851 ...	1,250	268	219	1,593	...	...	1897 ...	2,393,300	192,451	5,852	49,480	...	...
1852 ...	7,050	806	...	...	...	...	1898 ...	4,086,150	326,195	4,349	31,812	...	...
1853 ...	52,200	5,220	...	...	...	...	1899 ...	6,913,550	553,198	4,084	29,719	...	...
1854 ...	58,500	7,023	...	...	...	...	1900 ...	5,725,400	458,461	5,095	39,038	...	...
1855 ...	76,900	12,076	...	...	...	...	1901 ...	7,150,600	572,354	8,364	73,931	...	...
1856 ...	70,500	9,671	...	...	...	...	1902 ...	6,256,750	500,533	7,995	61,771	...	...
1857 ...	69,200	9,449	280	2,524	...	...	1903 ...	7,748,450	619,705	4,406	37,913	859	...
1858 ...	29,250	2,340	745	7,455	...	...	1904 ...	8,072,300	654,949	4,510	25,417	32,876	...
1859 ...	67,250	6,051	1,278	17,259	...	...	1905 ...	8,709,500	689,943	5,521	38,817	154,087	...
1860 ...	54,800	4,932	1,687	16,360	...	...	1906 ...	8,830,700c	708,993	8,848	70,958	140,720	...
1861 ...	27,750	2,497	2,558	24,945	...	...	1907 ...	6,409,550c	511,923	9,212	65,999	98,773	...
1862 ...	68,800	7,151	2,393	21,541	...	...	1908 ...	9,869,500c	813,591	9,564	76,668	79,934	...
1863 ...	32,900	2,963	2,807	25,265	...	...	1909 ...	10,830,450c	867,419	4,805	37,456	59,633	...
1864 ...	58,300	5,508	2,724	24,520	...	...	1910 ...	12,074,100c	972,698	8,228	70,775	93,733	...
1865 ...	183,950	15,693	1,686	13,490	...	...	1911 ...	12,449,500c	986,341	6,907	65,506	83,470	...
1866 ...	85,650	6,849	2,965	23,722	...	...	1912 ...	11,297,100c	903,396	3,154	27,533	49,094	...
1867 ...	56,750	4,541	2,305	18,442	...	...	1913 ...	13,619,850c	1,089,481	6,260	47,589	47,377	...
1868 ...	8,000	658	3,256	26,045	...	...	1914 ...	6,279,750c	502,153	4,702	39,800	18,197	e 5
1869 ...	179,900	14,273	4,124	32,998	...	...	1915 ...	9,968,500c	808,392	8,375	78,926	6,127	e 381
1870 ...	157,200	17,551	6,112	48,390	...	...	1916 ...	5,432,100	441,991	6,271	61,381	10,208	e 1,102
1871 ...	218,500	15,304	3,866	26,926	...	...	1917 ...	3,890,650	310,893	7,230	72,669	18,959	e 2,060
1872 ...	37,000	2,590	3,942	31,536	...	...	1918 ...	3,436,250	274,141	6,504	81,834	16,886	e 3,995
1873 ...	68,150	4,771	6,292	62,916	...	...	1919 ...	4,135,750	344,119	8,998	117,072	18,875	e 3,987
1874 ...	345,600	24,192	7,057	70,572	...	...	1920 ...	5,065,300	487,686	14,355	240,579	22,121	e 3,704
1875 ...	342,350	23,965	6,646	66,465	...	...	1921 ...	9,816,250	1,162,735	10,839	181,801	23,073	e 10,107
1876 ...	219,050	23,743	6,577	65,772	...	...	1922 ...	8,309,750	1,063,475	3,990	54,769	13,323	e 6,878
1877 ...	336,150	36,979	4,247	31,351	...	...	1923 ...	7,911,310	1,009,831	7,705	103,958	21,161	e 20,075
1878 ...	580,900	63,902	4,675	35,064	...	...	1924 ...	11,126,861	1,379,022	14,081	348,713	29,607	e 39,877
1879 ...	627,250	69,742	4,667	35,001	...	...	1925 ...	11,825,479	1,473,799	6,243	186,775	40,136	e 41,884
1880 ...	662,550	66,252	5,197	51,970	...	...	Total	249,094,500	22,288,204	378,588	3,943,630	1,079,234	134,055
1881 ...	792,750	79,277	7,716	77,165	...	...	1926	1,522,958					

a The exports up to the year 1834 consisted only of supplies to shipping of which no record is kept. b. Not available. c Approximate figures only.
 d Six months ended 30th June. e Year ended 30th June. * Principally Sandalwood Oil.

APPENDIX 2k.

Summary of Imports of Timber, Tanning Materials and Essential Oils, since 1848.

Year.	Timber, Wood- ware, etc. (not including furni- ture, bamboo, cane, etc.)	Tanning Materials.	Essential Oils.
	Value £	Value £	Value £
1848	464	...	...
1849	...	...	...
1850	189	...	...
1851	3,216	...	...
1852	2,479	...	...
1853	790	...	...
1854	831	...	...
1855	1,464	...	...
1856	1,124	...	...
1857	774	...	...
1858	1,528	...	...
1859	690	...	...
1860	2,095	...	...
1861	1,459	...	...
1862	1,920	...	...
1863	1,568	...	...
1864	894	...	...
1865	548	...	...
1866	1,442	...	...
1867	1,727	...	...
1868	1,451	...	...
1869	1,408	...	...
1870	1,518	...	...
1871	736	...	...
1872	1,660	...	...
1873	1,008	...	...
1874	1,774	...	...
1875	2,707	...	...
1876	3,098	...	...
1877	2,036	...	...
1878	2,947	...	...
1879	2,340	...	...
1880	3,061	...	...
1881	3,639	...	...
1882	3,692	...	...
1883	6,667	...	...
1884	2,930	...	...
1885	11,479	...	...
1886	17,888	...	...
1887	8,136	...	...
1888	4,461	...	...
1889	7,686	...	...
1890	14,979	...	...
1891	18,406	...	...
1892	26,713	...	...
1893	14,493	...	...
1894	17,964	...	...
1895	47,123	...	...
1896	5,381	...	...
1897	164,552	...	...
1898	55,566	...	...
1899	45,689	...	...
1900	56,266	1,416	1,105
1901	80,134	1,740	1,546
1902	97,810	3,418	1,751
1903	102,383	3,556	1,348
1904	157,856	1,322	2,122
1905	98,494	582	1,592
1906	95,229	1,412	1,915
1907	122,016	2,767	1,549
1908	93,205	2,392	4,584
1909	90,502	4,129	4,003
1910	171,280	3,531	3,686
1911	152,133	2,912	4,938
1912	167,244	3,089	4,598
1913	202,640	2,651	5,392
1914	78,736	629	2,323
1914-15	107,763	2,082	4,988
1915-16	76,849	3,313	4,788
1916-17	75,681	2,848	3,484
1917-18	58,305	2,020	4,358
1918-19	62,824	1,181	4,168
1919-20	100,083	3,748	10,043
1920-21	171,654	*4,899	6,106
1921-22	92,448	5,865	6,577
1922-23	109,428	6,991	4,033
1923-24	133,893	2,790	3,301
1924-25	161,898	2,670	4,429
Totals	3,445,149	73,953	99,227

*This and subsequent years include Tanning Extracts, not previously recorded.

APPENDIX 3a.

Timber Concessions in Force as at the 30th June, 1925.

Concessionaire.	No.	Locality.	Term.	Original Area.	Present Area.
Millars' T. & T. Co., Ltd. ...	12/0	Cockburn Sound ...	1-1-1889 to 31-12-1901 1-1-1902 to 31-12-1915 1-1-1916 to 31-12-1929	} 250,000	250,000
Millars' T. & T. Co., Ltd. ...	12/1	Canning ...	1-1-1883 to 15-12-1925*			100,000	80,648
Total ...				350,000	330,648

* Term includes 11½ months extension granted under Section 6 (i) of Forests Act, 1918.

APPENDIX 3b.

Timber Leases in Force as at the 30th June, 1925.

Lessee.	No.	District.	†Original Term, under Land Act, 1898.	Expiration of extension under Forests Act, 1918.*	Original Area.	Present Area.
					acres.	acres.
Ainslie, James ...	145/113	Jarrahwood ...	1-1-1899 to 31-12-1923	30-6-1929	4,480	4,389
Ainslie, James ...	149/113	Jarrahwood ...	1-1-1899 to 31-12-1923	30-6-1929	4,480	4,092
Ainslie, James ...	150/113	Jarrahwood ...	1-1-1899 to 31-12-1923	30-6-1929	4,480	3,522
Millars' T. & T. Co., Ltd. ...	186/113	Yarloop ...	1-1-1899 to 31-12-1923	31-12-1927	27,000	16,012
Millars' T. & T. Co., Ltd. ...	227/113	Yarloop ...	1-1-1901 to 31-12-1925	31-12-1929	4,480	2,743
Millars' T. & T. Co., Ltd. ...	228/113	Yarloop ...	1-1-1901 to 31-12-1925	31-12-1929	4,480	4,130
Millars' T. & T. Co., Ltd. ...	229/113	Yarloop ...	1-1-1901 to 31-12-1925	31-12-1929	4,480	3,962
Millars' T. & T. Co., Ltd. ...	230/113	Yarloop ...	1-1-1901 to 31-12-1925	31-12-1929	4,480	4,480
Good, Frederick Daniel ...	244/113	Pinjarra ...	1-7-1899 to 30-6-1924	15-7-1929	17,280	13,259
Good, Frederick Daniel ...	257/113	Donnybrook ...	1-10-1899 to 30-9-1924	31-8-1929	33,280	28,876
Millars' T. & T. Co., Ltd. ...	261/113	Yarloop ...	1-10-1899 to 30-9-1924	15-10-1929	58,270	22,937
Wittenoom, Edward Horne	269/113	Yarloop ...	1-10-1899 to 30-9-1924	30-9-1928	5,000	2,080
Macmurtrie, William ...	288/113	Donnybrook ...	1-7-1900 to 30-6-1925	...	36,960	12,496
Ainslie, James ...	291/113	Donnybrook ...	1-1-1901 to 31-12-1925	30-11-1930	17,920	17,308
Millars' T. & T. Co., Ltd. ...	296/113	Yarloop ...	1-1-1900 to 31-12-1924	31-12-1928	11,520	3,868
Millars' T. & T. Co., Ltd. ...	297/113	Yarloop ...	1-1-1900 to 31-12-1924	31-12-1928	13,440	12,771
Ainslie, James ...	299/113	Pinjarra ...	1-7-1900 to 30-6-1925	15-7-1930	19,840	18,795
McNeil, Alexander James ...	309/113	Collie ...	1-4-1901 to 31-3-1926	...	21,310	793
Wittenoom, Edward Horne...	322/113	Yarloop ...	1-4-1902 to 31-3-1927	15-4-1932	44,800	22,024
Wittenoom, Edward Horne...	325/113	Yarloop ...	1-4-1902 to 31-3-1927	31-3-1931	1,280	1,197
Smith, Henry Teesdale ...	330/113	Pinjarra ...	1-7-1902 to 30-6-1927	30-11-1930	10,240	7,781
Smith, Henry Teesdale ...	331/113	Pinjarra ...	1-1-1903 to 31-12-1927	15-1-1933	9,600	7,111
Total ...					359,100	214,626

* On royalty basis.

† On rental basis.

APPENDIX 3c.

Saw Mill Permits in Force as at the 30th June, 1925 (Granted under Section II. of the Land Act Amendment Act, 1904).

Permit Holder.	Original No.	Regranted as No.	Locality.	Term.	Original Area.	Present Area.
Whittaker Bros.	1/11	76/11	North Dandalup ...	1- 7-1915 to 30-6-1925	20,000	20,000
Bunning, Robert	8/11	93/11	Argyle	1-10-1916 to 30-6-1925	4,700	4,700
Bunning Bros., Ltd.	9/11	94/11	Collie	1-10-1916 to 30-6-1925	10,000	10,123
Preston Valley Sawmills, Ltd.	10/11	95/11	Noggerup	1- 1-1917 to 31-12-1925	19,300	9,920
Bunning, Robert	15/11	96/11	Argyle	1- 4-1917 to 30-6-1925	5,300	5,300
Bunning Bros., Ltd.	25/11	99/11	Collie	1- 7-1918 to 30-6-1925	10,000	9,960
Port & Co., Ltd.	34/11	...	Pindalup	1- 7-1910 to 30-6-1931	28,510	30,450
Bunning Bros., Ltd.	36/11	97/11	Collie	1- 4-1917 to 30-6-1925	10,000	9,986
Lewis, Francis Jas.; Reid, F. W. S.	37/11	inc. 51/11	West Collie	1- 1-1910 to 31-12-1925	6,000	15,843
Wilgarrup Karri and Jarrah Co., Ltd.	42/11	...	Jarnadup	1- 4-1910 to 31-3-1931	23,000	14,948
Buckingham Bros.	44/11	...	Muja	1- 7-1910 to 30-6-1925	18,000	17,730
Commissioner of Railways	60/11	...	Yourdanning	1- 4-1912 to 31-3-1926	38,000	38,000
The Kauri Timber Co., Ltd.	61/11	late 12/11	Nannup	1- 1-1912 to 31-12-1925	58,000	55,405
Bunning, Robert	63/11	...	Argyle	26-3-1924 to 12-3-1926	8,006	8,006
Trees, Ltd.	71/11	late 70/11	Collie	1- 4-1914 to 31-12-1923	20,028	20,028
Minister for Works and Trading Concerns	73/11	pt. 67/11	Palgarup	1- 1-1915 to 31-12-1925	7,000	7,000
Commissioner of Railways	78/11	...	Near Dwellingup	1- 7-1915 to 30-6-1925	81,500	81,235
Minister for Works and Industries	79/11	...	Wuraming	1-10-1915 to 30-9-1925	38,690	36,596
Minister for Works and Industries	80/11	...	Bingham River	1-10-1915 to 30-9-1925	25,740	21,260
Minister for Works and Industries	81/11	...	Wuraming Hill	1-10-1915 to 30-9-1925	25,878	25,848
Minister for Works and Industries	82/11	...	Near Worsley	1-10-1915 to 30-9-1925	4,750	8,000
Buckingham Bros.	83/11	...	Near Bingham River	1- 7-1916 to 30-6-1926	25,000	20,130
Whittaker Bros.	84/11	...	North Dandalup	1- 1-1916 to 31-12-1925	15,350	15,430
Minister for Works and Industries	85/11	...	Pemberton	1- 7-1916 to 30-6-1926	79,000	75,766
Minister for Works and Industries	86/11	...	Manjimup	1- 7-1916 to 30-6-1926	143,000	141,363
Westralian Powell Wood Process, Ltd.	87/11	...	Donnelly River	1- 1-1919 to 31-12-1929	15,000	15,000
Wandoo Timber Co., Ltd.	89/11	...	Muja	1-10-1916 to 31-5-1926	37,000	34,956
				Total	777,252	752,983

APPENDIX 3d.

Sawmilling Permits in Force as at the 30th June, 1925 (Granted under Forests Act, 1918).

Permit Holder.	No.	Locality.	Term.		Area.
			From	To	
Australian Lumber Co., Ltd.	54	Inglehope	15-10-18	14-10-28	7,600
Adelaide Timber Co., Ltd.	57	Wilga	28-11-18	30-9-25	15,186
Swan Saw Mills, Ltd.	91	Quilergup	22-8-19	21-8-29	15,800
Australian Lumber Co., Ltd.	101	Wuraming	20-11-19	19-11-25	3,100
Buckingham Bros.	106	Muja	25-11-19	31-12-25	5,090
Collie Land & Timber Co., Ltd.	107	Bingham River	29-11-19	28-5-26	8,143
Nicholson, John	145	Barabup	1-9-21	31-8-25	9,969
Australian Lumber Co., Ltd.	157	Bowelling	1-11-20	31-10-25	34,360
Whistler Bros.	167	Bridgetown	1-1-21	31-12-25	1,500
Lewis & Reid, Ltd.	187	Glenlynn	1-3-21	28-2-26	4,160
Steele, H.	198	Albany	1-3-21	30-4-26	2,050
Timber Corporation, Ltd.	216	Greenbushes	1-4-21	31-3-31	8,770
Miller, E. E.	243	Donnybrook	1-12-21	30-11-25	50
Connell, R. C.	281	Collie	1-5-22	31-1-26	3,100
State Saw Mills	310	Bridgetown	14-7-22	13-7-25	10,000
Lewis & Reid, Ltd.	317	Collie	1-9-22	31-8-25	5,350
Bunning Bros., Ltd.	322	Lowden	1-11-22	31-10-25	657
Margaret River Timber Co., Ltd.	328	Margaret River	1-11-22	31-10-25	19,995
Timber Corporation, Ltd.	329	Greenbushes	1-11-22	31-10-25	6,082
Waters, A.	363	Sawyers' Valley	1-7-23	30-6-25	320
Adelaide Timber Co., Ltd.	380	Benjinup... ..	1-8-23	31-7-25	3,800
Timber Corporation, Ltd.	386	Palgarup	1-9-23	31-8-25	750
State Saw Mills	387	Pindalup	1-10-23	30-9-25	15,350
Livesey, S. C.	388	Kalgan	1-11-23	30-4-26	1,460
Australian Lumber Co., Ltd.	390	Palgarup	1-11-23	31-10-25	8,870
W. A. Jarrah Forests Ltd.	403	Margaret River	22-10-23	21-10-25	15,065
Mitchell & Ryan	406	Hester	1-11-23	31-10-25	1,586
Connell, W. R.	416	Blackwood River	1-1-24	30-6-25	176
Trees, Ltd.	422	Collie	7-12-23	31-12-25	3,750
Harper, A. J.	427	Marbellup	1-2-24	30-4-26	1,315
Lewis, J. and Stirk, F.	428	Shotts	12-1-24	11-1-26	4,300
Pilgrim, J. F.	436	Mundaring	15-2-24	28-2-26	9,540
Lewis & Reid, Ltd.	438	Wilgarup	1-4-24	31-3-26	1,750
Millar's Timber & Trading Co., Ltd.	440	Marrinup	11-4-24	10-4-26	1,272
Bunning Bros., Ltd.	451	Claymore	1-6-24	31-5-26	5,720
Connell, R. C. Ltd.	454	Collie	1-7-24	30-6-26	5,884
Collie Land and Timber Co., Ltd.	456	Collie	1-7-24	30-6-26	800
Bunning Bros. Ltd.	485	Donnybrook	1-8-24	31-7-25	6,266
The Mumballup Timber Syndicate	492	Mumballup	1-9-24	31-8-25	6,568
Smith, J. F.	495	Nannup	1-8-24	31-7-25	350
Carrigg, John	496	Northcliffe	1-9-24	31-8-25	828
Wilson & Driscoll	499	Yarloop	1-9-24	31-8-25	4,890
Bunning Bros. Ltd.	502	Donnybrook	1-9-24	31-8-25	2,200
Jackson & Rodgers Ltd.	508	Quindalup	1-10-24	30-9-25	2,732
Bunning Bros. Ltd.	517	Noggerup	17-10-24	16-10-25	5,180
Richardson, G. M. (Controller of Group Settlements)	518	Margaret River	1-12-24	30-11-25	515
Millars Timber & Trading Co. Ltd.	524	Jarrahwood	1-1-25	31-12-25	18,000
Palmer, Richard	535	Collie	7-2-25	6-7-25	20
Wright, William	538	Kalamunda	1-3-25	28-2-26	12
Ashmore, Sydney	547	Mundaring	1-4-25	31-3-26	350
Timber Corporation Ltd.	552	Wilgarrup	1-4-25	31-3-26	3,000
Jackson & Rodgers Ltd.	555	Boyanup	1-5-25	30-4-26	3,960
Millars Timber & Trading Co. Ltd.	571	Marrinup	1-6-25	31-5-26	4,880
				Total ...	302,101

APPENDIX 3a.

Hewing Permits in Force as at 30th June, 1925.

Permit Holder.	No.	Locality.	Term.		Area.
			From.	To.	
Johnson, A. M.	1	Noggerup	26-2-17	30-6-25	620
Carter, A.	191	Jarrahwood	1-3-21	30-6-25	1,000
Aubin, L.	326	Margaret River	1-11-22	31-10-25	575
Lawson, S. E.	330	Mungallup	1-11-22	30-6-25	95
Dore, C. E.	372	Kirup	1-7-23	30-6-25	3,889
Jackson & Rogers, Ltd.	391	Margaret River	22-10-23	21-10-25	2,790
Jackson & Rogers, Ltd.	392	Margaret River	22-10-23	21-10-25	8,970
Smith, J. P.	394	Margaret River	22-10-23	21-10-25	3,620
Smith, J. P.	395	Margaret River	22-10-23	21-10-25	8,830
Bailey, W. J.	396	Margaret River	22-10-23	21-10-25	2,400
Bailey, W. J.	397	Margaret River	22-10-23	21-10-25	3,865
Bailey, W. J.	398	Margaret River	22-10-23	21-10-25	4,680
W.A. Jarrah Forests Ltd.	399	Margaret River	22-10-23	21-10-25	8,125
W.A. Jarrah Forests Ltd.	400	Margaret River	22-10-23	21-10-25	5,795
W.A. Jarrah Forests Ltd.	401	Margaret River	22-10-23	21-10-25	4,770
Bailey, W. J.	402	Margaret River	22-10-23	21-10-25	2,590
Jackson & Rogers, Ltd.	404	Margaret River	22-10-23	21-10-25	14,380
Bonola, T. D.	405	Busselton	22-10-23	21-10-25	1,136
Smith, J. P.	408	Margaret River	1-12-23	30-11-25	5,300
Jackson & Rogers, Ltd.	411	Margaret River	1-12-23	30-11-25	17,000
Jackson & Rogers, Ltd.	412	Margaret River	1-12-23	30-11-25	3,100
Jackson & Rogers, Ltd.	413	Margaret River	1-12-23	30-11-25	8,300
Australian Lumber Co., Ltd.	418	Balbarup	1-12-23	30-11-25	125
Ryan, Joseph	488	Margaret River	11-8-24	10-8-25	14,850
Ryan, P. D.	489	Margaret River	11-8-24	10-8-25	12,280
Jackson & Rodgers Ltd.	490	Busselton	11-8-24	10-8-25	5,680
W.A. Jarrah Forests Ltd.	491	Margaret River	11-8-24	10-8-25	350
W.A. Jarrah Forests Ltd.	530	Margaret River	16-1-25	31-1-26	5,800
Bonola, T. D.	536	Busselton	1-3-25	31-8-25	149
Trew, Samuel	545	Mundaring	16-3-25	30-6-25	150
Connell, W. R.	548	Bridgetown	1-4-25	31-3-26	1,973
Connell, W. R.	549	Bridgetown	1-4-24	31-3-26	1,136
Connell, W. R.	550	Bridgetown	1-4-25	31-3-26	573
Jacques, Frederick	554	Mundaring	19-4-25	31-7-25	120
Dunn, S. W.	564	Collie	1-6-25	30-6-25	85
Mullen & Co.	565	Manjimup	1-6-25	31-5-26	255
Jackson & Rodgers Ltd... ..	567	Bridgetown	1-6-25	31-5-26	312
				Total ...	155,668

APPENDIX 3f.

Firewood Permits in Force as at 30th June, 1925.

Permit Holder.	No.	Locality.	Term.		Area.
			From.	To.	
Morris, C. G.	66	Albany	30-4-19	30-4-26	340
Georgeff, M....	130	Balcatta	17-5-20	16-5-26	1,180
McMullen, W.	185	Warbrook	1-3-21	28-2-26	575
Young, J.	203	Helena River	2-4-21	...	13,400
Hunter, C. H.	205	Clackline	1-5-21	30-4-26	600
Goodall & Pepper	230	Marbellup	1-10-21	30-4-26	590
Groat, A.	244	Balcatta	1-12-21	30-11-25	1,180
Dean, G.	264	Nannup	1-4-22	31-3-26	945
Murphy, O. F.	321	Jandakot	1-1-23	31-12-25	55
Ferguson, J. H.	368	Wooroloo	18-5-23	30-6-25	3,500
Gordin, A. A.	385	Byford	1-9-23	31-8-25	1,347
Gableish, A....	389	Albany	1-11-23	30-4-26	1,100
Blamire, R.	425	Kalamunnda	1-1-24	30-6-25	906
Walliston Orchardists, Ltd.	426	Walliston	1-1-24	31-12-25	205
Shanhun, A. V.	434	Albany	1-3-24	30-4-26	130
Barrett, T. H.	447	Pindalup	1-5-24	30-4-26	3,340
Fairless, E. S. & C. C.	455	Bedfordale	1-7-24	30-6-26	240
Harvey, A. R.	458	Albany	1-7-24	30-6-25	940
Nicholls, J. H.	460	Pickering Brook	1-7-24	30-6-25	316
Sharp, Johnstone	461	Pickering Brook	1-7-24	30-6-25	728
Weston, F. J.	462	Pickering Brook	1-7-24	30-6-25	640
Weston, F. J.	463	Pickering Brook	1-7-24	30-6-25	461
Saunders, John	465	Karragullen	1-7-24	30-6-25	452
Weyman, Frederick	466	Karragullen	1-7-24	30-6-25	360
Wright, Cecil	467	Barton's Mill	1-7-24	30-6-25	628
Weston, G. P.	468	Pickering Brook	1-7-24	30-6-25	518
Shadforth, William	469	Pickering Brook	1-7-24	30-6-25	437
Eatts, S. T.	470	Pickering Brook	1-7-24	30-6-25	490
Keenan, Percy	474	Chidlow	1-7-24	30-6-25	458
Keenan, Percy	475	Chidlow	1-7-24	30-6-25	642
Honston, W. G.	476	Chidlow	1-7-24	30-6-25	475
Colquhoun & Farrell	477	Sawyers' Valley	1-7-24	30-6-25	729
Trew, Samuel	478	Sawyers' Valley	1-7-24	30-6-25	560
McCracken, George	479	Mundaring Weir	1-7-24	30-6-25	612
Murphy, F. O.	483	Jandakot	1-8-24	31-7-25	417
Trew, S. G.	487	Mundaring	1-8-24	30-6-25	470
Martyr, William	493	Mundaring	1-8-24	30-6-25	620
Thorley, R. H.	497	Mundaring	1-9-24	30-6-25	440
Keenan, Horace	500	Mundaring	1-9-24	30-6-25	1,130
Edwards, R. S.	504	Mundaring	1-10-24	30-6-25	887
Scala, Dominic	505	Mundaring	1-10-24	30-6-25	224
Whetstone, W. B.	507	Bedfordale	1-10-24	30-9-25	1,460
Baker, Henry	509	Amphion	1-10-24	30-9-25	990
Morris, Alexander	525	Albany	1-12-24	30-4-26	700
Crisp, W.	528	Bridgetown	1-1-25	30-6-25	115
Green, O. N.	529	Mundaring	1-1-25	30-6-25	692
King, E. W.	534	Jarrahdale	1-3-25	28-2-26	375
Nicholas, J. F.	537	Beechina	1-3-25	30-6-25	320
Holmes, J. T.	540	Dwellingup	1-3-25	28-2-26	590
Stucke & Nunn	541	Pinjarra	1-3-25	28-2-26	790
Head, J. C., T. & H.	542	Pinjarra	1-3-25	28-2-26	1,500
Green, O. N.	543	Mundaring	1-3-25	31-7-25	...
Sefton, R. W.	546	Mundaring	1-4-25	30-6-25	320
Dickenson & Tolley	551	Warbrook	1-4-25	31-3-26	705
Ware, J. A.	565	Marbellup	1-5-25	30-4-26	1,160
Fisher, G. W.	557	Albany	1-5-25	30-4-26	385
Hunt, James	558	Dwellingup	1-5-25	30-4-26	780
Fleming, David	559	Wundowie	1-5-25	30-4-26	2,860
Lord, Cyrus	560	Beechina	1-5-25	30-6-25	920
Johnston, George	562	North Beach	1-6-25	31-5-26	180
Cook & Caldwell	563	Jandakot	1-6-25	31-5-26	425
Ashmore, Sydney	570	Bickley	1-5-25	30-4-26	350
			Total	...	58,884

APPENDIX 3g.

Miscellaneous Permits in Force as at 30th June, 1925.

Permit Holder.	No.	Locality.	Term.		Area.
			From.	To.	
Hall, W. R....	104	Kalgoorlie ...	1-10-19	31-7-29	4,400,000
Braddock, C. L. ...	179	North-West Areas ...	1-1-21	31-12-25	*70,000
Plaimar Ltd. ...	482	Greenbushes-Manjimup	1-7-24	30-6-26	*1,703
Simper & Kirby ...	506	Pingrup ...	1-10-24	30-9-34	172,600
The Coo-ee Eucalyptus Oil Co. ...	521	Yelladine ...	1-7-24	30-6-34	17,100
Perry, John ...	533	Wanneru ...	23-2-25	22-7-25	800
Atkins, Wilson & Hogg ...	539	Muchea-Gingin ...	1-3-25	28-2-27	120,000
Mollison, George ...	553	Wanneru ...	1-5-25	30-4-26	850
Douglas, E. E. ...	566	Albany ...	1-6-25	31-7-25	
Plaimar Ltd. ...	569	Cranbrook-Albany ...	1-6-25	31-5-26	*2,100
				Total ...	4,711,350

* Square miles not included in total.

APPENDIX 3h.

Summary of Appendices 3a to 3g.

Number in Force.	Class of Holding.	Area.
		acres.
2	Timber Concessions (Appendix 3a) ...	330,648
22	Timber Leases (Appendix 3b) ...	214,626
27	Sawmill Permits (Appendix 3c) ...	752,983
53	Sawmilling Permits (Appendix 3d) ...	302,101
37	Hewing Permits (Appendix 3e) ...	155,668
62	Firewood Permits (Appendix 3f) ...	58,884
10	Miscellaneous Permits (Appendix 3g) ...	*4,711,350
213	Total ...	6,526,260

*Not including 73,803 square miles (Permits Nos. 179, 482 and 569).

APPENDIX 4.

Table showing the number of various Timber Workers' Registration Certificates issued from 1st July, 1924, to 30th June, 1925, as compared with those issued during the year ended 30th June, 1924.

Class of Registrations.	Number issued for year ended 30th June, 1924.	Number issued for year ended 30th June, 1925.
Hewers	346	279
Fallers	455	736
Haulers	123	162
Carters	50	51
Managers and Bush Foremen	56	61
Teamsters	41	42
Swampers	182	195
Firewood Cutters and Carters	177	167
Charcoal Burners and Carters	2	1
Timber Getters *	19	21
Horse Drivers	24	22
Barrel Stave and Billet Splitters	3	1
Ropemen	1	2
Whistle Boys	1	4
Shoeman	1	1
Beam Squarers	1	3
Engine Drivers	3	2
Hookmen	2	7
Billett Splitters ... ..	...	4
Mill Hands ... ..	...	4
Chaser ... ..	...	1
Winchmen ... ..	...	8
Whim Drivers ... ..	...	3
Sandalwood Getters	751	929
	2,238	2,706

* Working on Coal Mining Leases.

APPENDIX 5.

Table showing the number of Licenses issued from 1st July, 1924, to 30th June, 1925, as compared with those issued during the year ended 30th June, 1924.

License.	Number issued for year ended 30th June, 1924.	Number issued for year ended 30th June, 1925.
Managers and Bush Foremen *	19	12
Firewood	1,975	2,458
Mining Timber	71	54
Bark Strippers	44	8
Fence Post	29	27
Sandalwood	20	29
Other ... ..	...	2
Totals	2,158	3,590

* These figures allude to the Goldfields only.

APPENDIX 6.

Summary of Prosecutions for Year ended 30th June, 1925.

Charge.	Number of Prosecutions.	Number of Convictions.
Unlawful removal of Timber...	3	2
Unlawful removal of Sandalwood	11	11
Unlawfully causing Fires	2	1
Other offences under Forests Act, 1918	6	5
Totals	22	19

APPENDIX 7.
LIST OF SAW MILLS.

Name of Sawmill Owner, and District.	Date of erection of Mill.	Locality, Permit No., Lease or Private Property.	Type of Mill.	Horse-power of Mill.	Average distance from Stump to Landing.	Average distance from Landing to Mill.	Distance from Mill to Main Line Siding.	Distance from Siding to nearest Port.	Output in loads of squared timber per day.	Percentage of recovery.	Rate per ton on sawn timber to Port of shipment.	Remarks.
ALBANY DISTRICT.												
Brooks, W. D., Tennessee	Oct., 1922	P.P., Loc. 1191	Circular saw	8	M. Ch. 0 30 to mill	M. Ch. ...	M. Ch. 1 0	M. Ch. 21 0	8 doz. fruit cases	40	s. d. 8 4	Cuts Karri and Jarrah fruit cases. Operates on P.P. Not working.
Colmer, R. J., Matilda	Feb., 1925	P.P., Loc. 1409	do.	16	1 40 to mill	...	On Line	57 0	1	35	12 8	Cuts White Gum for truck timber for W.A. Govt. Railway Dept. Operates on P.P. Works intermittently.
Douglas, J. R., Denmark	1912	P.P., Town Lot 302	do.	14	0 40 to mill	...	0 40	37 0	1	50	10 4	Cuts Karri and Banksia for general wheelwright work. Works intermittently from P.P.
Drage, J. E., Mt. Barker	1913	P.P., Loc. 79	do.	10	0 40 to mill	...	17 0	31 0	8 doz. fruit cases	40	10 7	Cuts Jarrah for fruit cases. Works intermittently on P.P.
Edgley, A., Redmond	1921	P.P., Loc. 2698	do.	12	0 30 to mill	...	7 0	20 0	7 doz. fruit cases	35	8 2	Cuts Jarrah fruit cases. Works intermittently from Permit 414.
Fitch, F. W., Millbrook	April, 1925	P.P., Loc. 1380	do.	25	0 40 to mill	...	13 0	At Port	...	...	13 0 (By Motor Truck)	Cuts Sheoak for fruit cases for sale and timber for own use. Operates on P.P. Works intermittently.
Groth & Adams, Marbellup	Feb., 1921	P.P., Loc. 723	do.	6	1 40	...	0 15	12 0	1	40	6 10	Cut Sheoak for fruit cases and barrel staves. Closed down Sept., 1923.
Harper, A. J., Marbellup	May, 1924	S.M.P., 427, S.M.S. 37/33	do.	12	1 0 to mill	...	0 6	12 0	1	50	6 10	Cuts Jarrah and Sheoak for barrel staves, furniture, fruit cases and firewood from Permit 427. Works intermittently.
Keith, A. E., Hay River	1910	P.P., Loc. 2685	do.	5	1 0 to mill	...	3 0	29 0	1	50	9 4	Cuts Jarrah fruit cases. Not working.
Livesey, S. C., Napier River	Sept., 1923	P.P. Loc. 1999	do.	12	0 60 to mill	...	18 0	At Albany	½	40	18 0 (by road)	Cuts Jarrah fruit cases for own use. Works intermittently.
Saw, C., Bow River	1919	P.P., Loc. 723	do.	5.7	0 40 to mill	...	26 0	37 0	1	50	10 4	Cuts Karri, River Banksia, Red and Yellow Tingle Tingle. Works intermittently from P.P.
Steele, H., Albany	May, 1921	P.P., Town Lot 43	Circular and band saws	6	5 40 to mill	...	1 0	At Albany	1	50	3 0	Cutting Sheoak for fruit cases, staves, and firewood. Operating Permit 198. Works intermittently.
Steicke, Bros., Porongorups	1913	P.P., Loc. 1855	Circular saw	18	0 40 to mill	...	17 0	31 0	10 doz. fruit cases	40	10 7	Cuts Karri mainly and Jarrah fruit cases. Operated S.M. permit 486 and P.P.
BRIDGETOWN DISTRICT.												
Connell, W. R., Bridgetown	1922	P.P., Loc. 663	Circular saw	8	1 40 to mill	...	2 0	60 0	1	70	...	Cutting Jarrah fruit cases, pickets, etc., for own use and sale, from P.P.
Flint, J.	Jan., 1925	P.P., Loc. 5263	do.	3	1 0 to mill	...	18 0	79 0	8	...	...	Cutting Jarrah for small orders and fruit cases from P.P.

Holdsworth, W., Hester ...	1920	P.P., Loc. 1077 ...	do. ...	6	...	...	0 5	60 0	...	75	...	...	Cutting Jarrah and Karri fruit cases from waste ends from various mills.
Lewis & Reid, Ltd., Yornup ...	Nov., 1922	Permit No. 187, S.M.S., 18/33	Twin and circular saws	20	1 40	0 40	2 40	78 0	10	33	14 8	...	Cutting Jarrah. Operating Permit 187.
Machin, J. H., Glentulook ...	1918	P.P., Loc. 620 ...	Circular saw ...	6	...	...	8 0	75 0	1 1/2	...	...	...	Cutting Jarrah fruit cases, etc., for own use from P.P.
Mitchell & Ryan, Hester ...	July, 1919	P.P., Loc. 5290 ...	Twin and circular saw	16	1 40 to mill	...	3 0	...	1 1/2	34	...	...	Cutting Jarrah fruit cases, scantling, and sleepers. Operating Permit 406.
Morrison, A. ...	Jan., 1925	P.P., Loc. 3063 ...	Circular saw ...	2	1 0 to mill	...	30 0	89 0	8	...	...	...	Cutting Jarrah for small orders and fruit cases from P.P.
Timber Corporation, Ltd., Greenbushes	1898	P.P. Loc. 890 ...	Vertical and circular saws	50	1 0	12 0	2 0	59 0	15	42	12 2	...	Cutting Jarrah all classes. Operating Permit No. 329 and part of Permit No. 216.
Timber Corporation Ltd., Wilga	June, 1925	S.M.P., 216, S.M.S. 49/33	Twin and circular saws	10	1 0	...	2 0	60 0	1	40	12 10	...	Cutting all classes Jarrah. Operating part of Permit No. 216.
Whistler Bros., Dinninup ...	May, 1921	P.P., Nelson Loc 1356	Circular saw ...	32	2 0	...	6 0	79 0	8	48-52	15 2	...	Cutting Jarrah and Wandoo sleepers, scantling, etc. Operating P.P. and Permit No. 167.
BUSSELTON DISTRICT.													
Donald, R. and Son., Yallingup ...	1922	Private Property ...	Circular saw ...	12	0 40 to mill	...	4 40	17 0	2	70	No Export	...	Driven by water power. Cutting Jarrah for own use from private property.
Jackson and Rodgers Ltd. ...	1925	Private Property ...	do. ...	20	2 0	15 0	0 5	1 10	6	48	2 1	...	Cutting Jarrah for export from Permit 508.
Margaret River Timber Co., Marmalup	1923	Permit 328, S.M.S. 26/33	do. ...	40	3 0 to mill	...	0 20	25 0	8	38	9 0	...	Cutting Jarrah for local and export trade from Permit 328.
COLLIE DISTRICT.													
Australian Lumber Co., Ltd., Bowelling	1921	S.M.P., 157, S.M.S., 16/33	Twin and circular saws	35	1 20	3 0	0 25	64 0	8	40	13 5	...	Operates Permit No. 157.
Buckingham Bros., Buckingham's Siding	1912	Permit 44/11, S.M.S. 30/33	Twin and circular saw	26	1 40	11 0	0 60	53 0	14	49	12 5	...	Cutting Jarrah sleepers and building timbers from Permits 44/11, 83/11, and 106.
Binning Bros., Ltd., Lyall's Mill	1903	P.P., Loc. 2519 ...	do. ...	200	1 0	10 0	6 0	49 0	30	50	13 1	...	Cutting Jarrah in all sizes. Operating permits 94/11, 95/11, 97/11, and 99/11.
Collie Land and Timber Co., Ltd., Shotts	Oct., 1921	Permit 107, S.M.S. 8/33	Twin and circular saws	14	2 40 to mill	...	9 0	49 0	8	45	...	...	Cuts Jarrah. Operates Permit 107.
Collie Land and Timber Co., Ltd., Shotts	1925	P.P., Loc. 755 ...	do. ...	16	0 50 to mill	...	5 0	49 0	...	...	...	...	Cuts Jarrah from P.P.
Connell, R. C., Ltd., Collie, No. 2 Mill	1925	S.M.P., 454, S.M.S. 44/33	do. ...	16	0 60 to mill	...	6 40	37 0	11	40	10 5	...	Cuts Jarrah. Operates Permit 454.
Connell, R. C., Collie ...	1923	Permit 281, S.M.S. 23/33	do. ...	14	0 60 to mill	...	0 40	43 0	5	55	12 1	...	Burned down Xmas, 1924. Operates Permit 281. Cutting Jarrah useless for Mines.
Forbes and Son, Worsley ...	1924	P.P., Loc. 1616 ...	Circular saw ...	20	0 40 to mill	...	2 40	29 0	1	60	...	...	Closed, March, 1925.
Lewis & Reid, Ltd., 'Allanson' ...	1917	S.M.S. 6/33 ...	Twin and circular saws	30	2 40	2 40	0 5	37 0	4	33	10 5	...	Used as a Board Mill. Cuts fitches from No. 2 Mill
Lewis & Reid, Ltd., Reid's No. 2 Mill	1915	S.M.P. 37/11, S.M.S. 15/33	do. ...	60	1 0	3 0	6 60	37 0	20	40	10 5	...	Cutting Jarrah. Operates on Permits 317 and 37/11.

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APPENDIX 7—continued.

Name of Sawmill Owner, and District.	Date of erection of Mill.	Locality, Permit No., Lease or Private Property.	Type of Mill.	Horse-power of Mill.	Average distance from Stump to Landing.	Average distance from Landing to Mill.	Distance from Mill to Main Line Siding.	Distance from Siding to nearest Port.	Output in loads of squared timber per day.	Percentage of recovery.	Rate per ton on Sawn Timber to Port of shipment.		Remarks.
					M. Ch.	M. Ch.	M. Ch.	M. Ch.			s. d.		
Lewis and Stirk, Shotts ...	1924	S.M.P., 428, S.M.S., 38/33	Twin and circular saws	10'	0 60' to mill	...	0 4	50 0	4	52	12 0	Cuts Jarrah and Sheoak from trees which mines cannot utilise. Operates on Permit 428.	
Palmer, R., Collie ...	1919	Collie Town Lot 529	Circular saw ...	24	1 0 to mill	...	0 10	41 0	2	55	...	Cuts Jarrah and firewood. Operates Local Permit No. 1.	
State Saw Mills, No. 6, Worsley	April, 1921	S.M.P. 82/11, S.M.S. 29/33	Twin and circular saws	50	1 0 to mill	...	5 0	29 0	10	48	...	Cutting Jarrah. Operating on Permit 82/11.	
Wandoo Timber Co., Ltd., Muja	1915	P.P., Loc. 1676 ...	do. ...	35'	0 60	7 0	0 60	53 0	12	38	12 4	Cutting Jarrah for local use and export. Operating Permit 89/11.	
Westralia Timber and Trading Co., Ltd., Harnett's Siding	1924	P.P. Loc. 51 ...	do. ...	25'	1 40' to mill	...	1 10	25 0	13	50	9 0	Cutting Jarrah from P.P.	
DONNYBROOK DISTRICT.													
Adelaide Timber Co., Ltd., Wilga	1909	Permit 57, S.M.S. 14/33	Circular saw ...	42'	1 20' to mill	3 0	...	58 0	7	45	12 10	Cutting Jarrah sleepers, building, and dressed timber, etc. Operating Permits 57 and 380.	
Bendall, W., Donnybrook ...	Dec., 1920	P.P., Loc. 989 ...	do. ...	10	...	0 40	1 60	21 0	1	70	8 4	Cutting Jarrah fruit cases only, for sale and own use, from P.P.	
Bowman, J. H., Charlie's Creek...	1916	P.P., Loc. 109 ...	Twin and circular saws	12	1 0	...	...	...	100 cases	...	No export	Cutting Jarrah fruit cases for own use. Works only a few weeks during year.
Bunning Bros., Ltd., Argyle ...	...	P.P., Loc. 2170 ...	do. ...	60	1 0	10 0	0 15	21 0	15	45	8 4	Cutting Jarrah for local use and export. Operating S.M.P. 93/11, and 485.
Davern, J. T., Lowden ...	1919	P.P., Loc. 89 ...	Circular saw ...	10	...	1 0	0 20	35 0	2½	75	10 1	Cutting Jarrah fruit cases and scantling for own use only from P.P.	
Farley, D. V. C., Goodwood ...	1-9-19	P.P. Loc. 1003 ...	do. ...	14	0 40	...	10 0	16 0	10 doz. dump fruit cases	70	8 11	Cutting Jarrah fruit cases and scantling for sale and local use from P.P.	
Hutton, T. G., Capel ...	1917	P.P., Loc. 77 ...	do. ...	6½	...	0 40	4 0	16 0	10 doz. fruit cases	50	8 11	Cutting Jarrah fruit cases and a little building timber from P.P.	
Jackson and Rodgers, Ltd., Bunbury	June-Aug., 1925	Permit 555, S.M.S., 50/33	do. ...	20	1 40 to mill	...	7 0	12 0	8	...	6 10	Cutting Jarrah for export and local use from Permit 555.	
Martin, R. M., Queenwood ...	1918	P.P., Loc. 629 ...	do. ...	8	1 0	...	1 20	33 0	1½	70	9 7	Cutting Jarrah fruit cases for own use only from P.P.	
Millar, Thos., Thompson's Brook	...	P.P., Loc. 61 ...	do. ...	6	...	0 20	4 0	31 0	1	90	9 7	Cutting Jarrah fruit cases and scantling. Working intermittently on P.P.	
Millar's Timber and Trading Co., Ltd., East Kirup	1910	Timber Lease 257/113, S.M.S., 53/33	Vertical, twin, and circular saws	350	0 60	8 0	13 0	37 0	60	40	10 4	Cutting Jarrah. Operating Timber leases 257/113 and 291/113.	

Miller's Timber and Trading Co., Ltd., Wellington Mills, No. 4	May-June, 1925	Timber Lease, 288/113	Twin and circular saw	16	1 0 at mill	...	14 0	9 0	12	45	6 6	Cutting general timber. Operating Timber Lease 288/113.
Miller, E. E., Donnybrook	...	P.P., Loc. 158	Circular saw	6	0 15	...	0 10	28 0	1	60	...	Cutting Jarrah fruit cases only. Operating Permit 243.
Mumballup Timber Syndicate, Mumballup	March, 1925	S.M.P., 492, S.M.S. 42/33	do.	25	1 40	...	3 40	45 0	6-8	40-50	11 0	Cutting Jarrah. Operating Permit 492.
Pinto, E. B., Preston	May, 1922	P.P., Loc. 1988	do.	6	...	1 0	1 40	31 0	1/2	70	9 7	Cutting Jarrah fruit cases for own use only from P.P.
Preston Valley Sawmills, Ltd., Lowden (No. 2)	Feb., 1920	P.P., Lease 48/822	Twin and circular saws	28	1 0	3 0	1 0	35 0	12-15	40	10 1	Cutting Jarrah. Operates S.M. Permits, 322 and 502.
Preston Valley Sawmills, Ltd., Noggerup	1906	S.M.S. 13/11a	do.	40	1 0	4 0	On main line	48 0	14	40	11 3	Cuts Jarrah for fruit cases and local and export markets. Operating Saw Mill Permit 95/11. Closed down.
Slattery, B., Ferguson	1919	P.P., Loc. 578	Circular saw	4	1 0 at mill	...	8 0	10 0	1/2	75	No export	Cutting Jarrah, Banksia, Marri and Peppermint. Fruit cases principally from P.P.
Thompson, G. P., Elgin	June, 1925	Boyanup, A.A. Lot 61	Twin and circular saws	8	0 40 at mill	...	0 40	21 0	1	40	...	Cutting Jarrah from P.P.
JARRAHWOOD DISTRICT.												
Forests Department, Wonnerup	30-6-21	State Forest, No. 2	Twin and circular saws	40	0 60	No landing	0 20	6 0	2	36	...	Cutting Tuart. Bulk of output for W.A.G. Railways.
Kauri Timber Co., Ltd., Nannup	In course of erection	S.M.P., 61/11, S.M.S., 28/33	Vertical band and circular saws	140	...	18 0	0 40	44 0	...	...	11 3	Cutting Jarrah. Operating permit 61/11.
Kauri Timber Co., Ltd., Ellis Creek	1914	S.M.P. 61/11, S.M.S. 22/33	Band and circular saws	75	0 60	3 0	14 0	32 0	32	49-28	11 3	Cutting Jarrah sleepers and building timber. Operating Permit 61/11.
Miller's Timber and Trading Co., Ltd., Jarrahwood	...	P.P., Sussex Loc. 361	Twin and circular saws	40	0 60	7 0	0 5	28 0	20	43	9 2	Cutting Jarrah timber. Operating timber leases 145/113, 149/113, and 150/113.
Smith, J. F., Nannup	March, 1923	P.P.	Circular saw	20	...	0 20	0 20	46 0	1	45	No export	Cutting Jarrah for house timber and fruit cases. Operating Permit 495.
Nicholson, John, Dellerton	Oct., 1923	P.P. Loc. 3898	Twin and circular saws	32	2 0 to mill	...	2 0	36 0	11 1/2	36	10 2	Cutting Jarrah timber. Operating Permit No. 145.
Swan Sawmills, Ltd., Claymore	1921	Permit 91, S.M.S. 4/33	Circular saw	40	1 0	1 0	2 0	22 0	15	41	8 5	Cutting Jarrah timber from Permit 91.
MANJIMUP DISTRICT.												
Australian Lumber Co., Ltd., Palgarup	July, 1924	S.M.P. 390, S.M.S. 35/33	Twin and circular saws	20	0 40 to mill	...	0 25	83 0	6	33	15 1	Cutting Jarrah for G. S. Cottages from Permit 390.
Carrigg, J., Northcliffe	...	S.M.P. 496, S.M.S. 43/33	do.	14	1 0 to mill	...	27 0	104 0	8	55	No export	Cutting Jarrah from Permit 496.
Edwards, R. H., Balbarrup	Sept., 1921	P.P., Loc. 7407	Circular saw	8	0 5	...	13 0	90 0	1/2	50	15 8	Cutting fruit cases and Jarrah timber for own use from P.P.
Glauder, F., Pemberton	Dec., 1921	P.P., Nelson Loc. 2720	do.	6	0 40	...	21 0	93 0	1/2	50	15 11	Cuts Jarrah, Marri, Sheoak and Banksia for own use from P.P. Not working.
Hornby, F. H., Balbarrup	1921	P.P., Nelson Loc. 1615	do.	6	0 40	...	7 0	90 0	1	50	15 8	Cutting Jarrah, Marri, Blackbutt and Banksia. Fruit cases and timber for own use from P.P.
Johnson, J., Balbarrup	1912	P.P., Nelson Loc. 1907	do.	12	0 40	...	5 0	90 0	1	50	15 8	Cutting Jarrah and Blackbutt, fruit cases and timber for own use from P.P.

APPENDIX 7.—continued.

Name of Sawmill Owner, and District.	Date of erection of Mill.	Locality Permit, Lease No. or Private Property.	Type of Mill.	Horse-power of Mill.	Average distance from Stump to Landing.		Average distance from Landing to Mill.		Distance from Mill to Main Line Siding.		Distance from Siding to nearest Port.		Output in loads of squared timber per day.	Percentage of recovery.	Rate per ton on Sawn Timber to Port of shipment.		Remarks.
					M.	Ch.	M.	Ch.	M.	Ch.	M.	Ch.			s.	d.	
Ralph, W., Balbarrup ...	1910	P.P., Loc. 2384 ...	Circular saw ...	7½	0	40	...	9	0	90	0	½	50	15	8	Cutting Jarrah fruit cases and timber for own use from P.P.	
State Sawmills, No. 1, Manjimup	5-12-1913	S.M.P. 86/11, Reserve 1655	Vertical, twin, and circular saws	240	0	60	10	0	4	0	90	0	39	40-44	15	8 and 5d. hauling	Cutting Jarrah and Karri timber for local and export trade from Permits 86/11 and 310.
State Sawmills, No. 2, Pemberton	1920	S.M.P. 85/11, Reserve 16354	Vertical and circular saws	400	0	40	7	0	17	0	93	0	50	40-45	15	11	Cutting Karri for local and export trade. Operating Permit 85/11.
State Sawmills, No. 3, Pemberton	1913	S.M.P. 85/11, Reserve 16354	Twin and circular saws	280	0	40	7	0	17	0	93	0	50	40-45	15	11	Cutting Karri for local and export trade. Operating Permit 85/11
Timber Corporation, Ltd., Palgarup	1921	P.P., Nelson Loc. 1024	do. ...	25	1	0	3	0	2	60	85	0	15	40	15	3	Cuts Jarrah. Operating Permit 386 and P.P.
Wilgarrup Karri and Jarrah Co., Ltd., Jarnadup	April to Sept., 1911	S.M.P. 42/11, S.M.S. 7/33	Vertical and circular saws	75	0	30	10	0	0	30	93	0	34	39-65	15	11	Cutting Jarrah and Karri for local and export trade from Permit 42/11.
MARGARET RIVER DISTRICT.																	
Group Settlers, Alexandra Bridge	...	S.M.P. 518. Crown Lands	Twin and Circular saws	10	0	60 to mill	...	10	0	20	0	4	45	No export			Cutting Jarrah for Group Settlement Cottages from Group Settlement blocks. Operating S.M. Permit 518.
Pilgrim, J. F. (W.A. Jarrah Forests, Ltd.) Margaret River	...	S.M.P. 403. S.M.S. 48/33	Twin and Circular saws	242	1	0	2	0	1	37	44	0	20	53	10	11	Cutting Jarrah and Karri for export. Operating Permit 403.
METROPOLITAN DISTRICT.																	
Buckingham, W. S., Kelmscott ...	...	P.P., Loc. 33 ...	Vertical and circular saws	13	Direct	hauling	...	3	40	...	...	¼	60	No Export			Cutting Jarrah fruit cases and timber for own use from P.P.
Dennis, H. J., Wanneroo ...	June, 1922	P.P., Swan Loc. 2737	Circular saw ...	11	do.	...	...	...	...	...	...	¼	65	No Export			Cuts fruit cases for local settlers.
Millar's Timber and Trading Co., Ltd., No. 1, Jarrahdale	1913	P.P., Cockburn Sd., Loc. 282	Twin and circular saws	110	1	20	27	0	7	0	30	0	45	45	9	5	Cutting Jarrah timber. Operating Concession 12/0.
Millar's Timber and Trading Co., Ltd., No. 2, Jarrahdale	1922	do. ...	do. ...	55	1	20	27	0	7	0	30	0	22	45	9	5	do.
Millar's Timber and Trading Co., Ltd., Mundijong (Board Mill)	1919	P.P., Cockburn Sd., Loc. 524	Circular saw ...	20	...	...	...	1	0	30	0	17	82	9	5		Cuts boards only from fitches supplied by other mills. Operating Concession 12/0.
Railway Department, Midland Junction	...	Midland Junction Workshops	Band and circular saws	80	...	...	...	...	...	...	...	10	50	...	...	...	Cuts Tuart and Wandoo for own use.
Turner, W. H., Mundijong	Sept., 1921	P.P., Loc. 68 ...	Twin and circular saws	10	0	40 to mill	...	4	40	35	0	1	60	No Export			Cuts Jarrah fruit cases and scantling from P.P.
Pilgrim, J. F., Fremantle	1923	Fremantle ...	do. ...	100	...	...	...	...	...	...	...	10	45	2	3		Cuts Jarrah from Mundaring Weir district, and trucks to Fremantle. Operating Permit 436.

MUNDARING DISTRICT.

Ashmore, S., Bickley	April, 1925	P.P.	Circular saw ...	6	0 40 to mill	...	0 40	29 0	½	80	No export	Cutting Jarrah and Marri fruit cases. Operating Permit 547.
Bettenay, J. & Sons, Karragullen	June 1921	P.P., Canning Loc. 403	Circular saw ...	12	...	...	2 0	...	1	60	...	Cutting Jarrah fruit cases from P.P.
Curtis, Chisholm & Co., Canning Dale	April 1921	P.P., Loc. 520 ...	Circular saw ...	14	1 0 to mill	...	7 0	...	2½	50	...	Cutting Jarrah for fruit cases and scantling from P.P.
McKenzie, I., Pickering Brook ...	March, 1924	Compartment 110	Twin and Circular saws	16	1 0 to mill	...	6 0	38 0	4	35	10 8	Worked on Concession 12/1. Closed May, 1925.
Millar's Timber and Trading Co., Ltd. (Barton's), Pickering Brook	...	Concession 12/1 ...	Twin and circular saws	25	1 0	8 0	8 0	38 0	10	46	10 8	Cutting Jarrah sleepers and scantling. Operates Concession 12/1
Oma, H. W., Kalamunda ...	...	P.P., Swan Loc. 9 ...	do. ...	16	1 0 to mill	...	4 0	32 0	6	40	10 1	Cuts Jarrah sleepers and scantling. Operates on P.P. Closed for about 6 months. Re-commenced about May, 1925.
Waters, A., Sawyers' Valley ...	Sept., 1921	P.P. Lease 297/55	do. ...	8	0 60 to mill	...	0 70	35 0	...	...	...	Cutting Jarrah fruit cases and scantling. Operating Permit 363.
Weston & Smailes ... ..	...	Compartment No. 155	Twin saws ...	16	1 0 to mill	...	2 40	38 0	5	40	10 8	Working on Concession 12/1
Wright, W., Kalamunda ...	March, 1925	P.P., Loc. 762 ...	Circular saw ...	5	0 40 to mill	...	3 40	32 0	½	80	No export	Cutting Jarrah for fruit cases. Operating Permit 538

PINJARRA DISTRICT.

Australian Lumber Co., Ltd. (No. 1, Hotham)	1921	P.P. Loc. 703 ...	Twin and circular saws	25	1 0	Direct to mill	0 20	88 8	12	45	16 7	Cutting Jarrah and Wandoo on private property.
Australian Lumber Co., Ltd. (No. 2, Hotham)	1921	P.P. Loc. 703 ...	do. ...	30	1 0	...	0 20	88 8	20	45	16 7	Cutting Jarrah on private property.
Australian Lumber Co., Ltd., Inglehope	1919	S.M.S. 34/33 ...	do. ...	37	0 60	6 0	on line	82 0	16	42	...	Cutting Jarrah for local and export trade from Permit 54.
Bailey Timber Co., Mandurah ...	Nov., 1921	P.P. Loc. 16 ...	Crosscut, band, and circular saws	75	3 0 to mill	...	12 0	66 0	1	70	No Export	Cutting Tuart, railway and coach building timbers on private property.
Edgeworth, & Co. Pinjarra ...	1920	P.P. Lot 14 ...	Circular saw ...	10	...	...	1 0	61 0	...	...	13 2	Cutting fruit cases from waste Jarrah from other mills.
Millar's Timber and Trading Co., Ltd., Marrinup	1910-11	Timber Lease 330/113	Twin and circular saws	36	0 60	2 0	...	73 0	12	50	14 2	Cutting Jarrah for local and export trade. Operating Timber Lease 330/113, and S.M. Permits 440 and 571.
Millar's Timber and Trading Co., Ltd., Nanga Brook	1908	Timber Lease 299/113	Twin, vertical, and circular saws	80	0 60	8 0	28 0	37 0	55	43	14 9	Cutting Jarrah for local and export trade. Operating Timber Leases 244/113 and 299/113.
Port & Co., Ltd., Pindalup ...	1911	S.M.P. 34/11, S.M.S. 13/33	Horizontal and circular saws	28	2 0	...	...	88 0	9	48	15 8	Cutting Jarrah for local and export trade from Permit 34/11.
Port & Co., Ltd., Pindalup (Board Mill)	1923	S.M.P. 34/11, S.M.S. 27/33	Twin and circular saws	25	Nil	...	3 40	94 0	8	...	15 2	Cutting Jarrah for local and export trade. Mill started cutting 3-7-23 from Permit 34/11.
Port & Co., Ltd., Holyoake ...	April, 1925	S.M.P. 34/11. S.M.S. 47/33	do. ...	40	1 0 to mill	...	14 30	77 0	23	49.5	14 7	Cutting Jarrah. Operating Permit 34/11, Part 1.
Railway Department, No. 2, Dwellingup	Nov. 1912	P.P. Loc. 1037 ...	do. ...	100	0 60	3 0	4 40	75 71	50	49.16	14 6	Cutting Jarrah, Sheoak, and Bulitch for own use, but surplus for export. Operating Permit 78/11.
Rosenthal. C. H. A., Meelon ...	1-8-1921	P.P., Block 17. C. Agr. Area	Circular saw ...	12	...	...	1 0	67 0	12 doz. fruit cases	...	13 8	Cutting fruit cases.

APPENDIX 7—continued.

Name of Sawmill Owner, and District.	Date of Erection of Mill.	Locality, Permit No., Lease or Private Property.	Type of Mill.	Horse Power of Mill.	Average distance from Stump to Landing.		Average distance from Landing to Mill.		Distance from Mill to Main Line Siding.		Distance from Siding to nearest Port.		Output in Loads of Squared Timber per day.	Percentage of Recovery.	Rate per Ton on Sawn Timber to Port of Shipment.		Remarks.
					M.	Ch.	M.	Ch.	M.	Ch.	M.	Ch.			s.	d.	
State Saw Mills (Patterson, J. H.), Amphion	1913-14	S.M.P. 81/11, S.M.S. 19/33	Twin and circular saws	40	2	0	2	40	0	60	82	0	6	...	15	4	Cutting Jarrah for local and export trade from Permit 81/11
State Sawmill No. 4, Wuraming	1913	S.M.P. 79/11, S.M.S. 17/33	Twin and circular saws	20	0	40	6	40	0	65	61	0	23	47	15	10	Cutting Jarrah for local and export trade from Permit 79/11.
State Sawmill, No. 5, Holyoake	1911	S.M.P. 81/11, S.M.S. 12/33	do. ...	60	0	60	23	0	23	0	78	0	50	40	14	8	Cutting Jarrah for local and export trade from Permit 81/11.
Taffs, W. H., North Dandalup...	April, 1925	P.P., Lot. A44 ...	Circular saw ...	12	0	20 to mill	...	...	1	40	50	0	1	50	...	...	Cutting Jarrah sleepers and building timber for sale from P.P. Cutting Jarrah for local trade. Operating Permits 76/11 and 84/11.
Whittaker Bros., North Dandalup	1902	S.M.P. 84/11, S.M.S. 12/11a	Twin and Circular saws	160	1	0	7	0	4	0	57	0	33	42	11	5	
YARLOOP DISTRICT.																	
Millar's Timber and Trading Co., Ltd., Hoffman Mill	1920	Timber Lease 261/113	Horizontal Band and twin saws	32	0	60	7	0	18	0	37	0	...	...	10	4	Cutting Jarrah Operating on Timber Lease, 322/113.
Millar's Timber and Trading Co., Ltd., No. 1, Mornington	1898	P.P. Loc 1 ...	Vertical Twin and circular saws	60	0	30	20	0	6	60	26	0	45	44	9	4	Cutting all classes of Jarrah Timber, including fruit cases, for local and export trade. Operating Timber Leases 186/113, 227/113, 230/113, 229/113, 269/113, 296/113, 297/113, 325/113, and 322/113.
Millar's Timber and Trading Co., Ltd., No. 2, Mornington	1898	P.P., Loc. 1 ...	Twin and circular saws	60	0	30	20	0	6	60	26	0	45	44	9	4	Cutting all classes of Jarrah Timber, including fruit cases for local and export trade. Operating Timber Leases 186/113, 227/113, 230/113, 269/113, 296/113, 297/113, 322/113 and 325/113.
Trees, Ltd., Treosville ...	1920	S.M.P. 71/11, S.M.S. 36/33	Twin and circular saws	36	1	20	1	0	31	0	57	0	20	45	...	...	Cuts Jarrah sleepers, boards and scantling. Operates Permit 71/11 and 422.