

Minister-in-Charge.

1930.

WESTERN AUSTRALIA.

REPORT

ON THE OPERATIONS OF

The Forests Department

FOR THE

YEAR ENDED 30th JUNE, 1930.

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

[FIRST SESSION OF THE FOURTEENTH PARLIAMENT.]

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1930.

KEY TO DISTRICTS AND SUB-DISTRICTS.

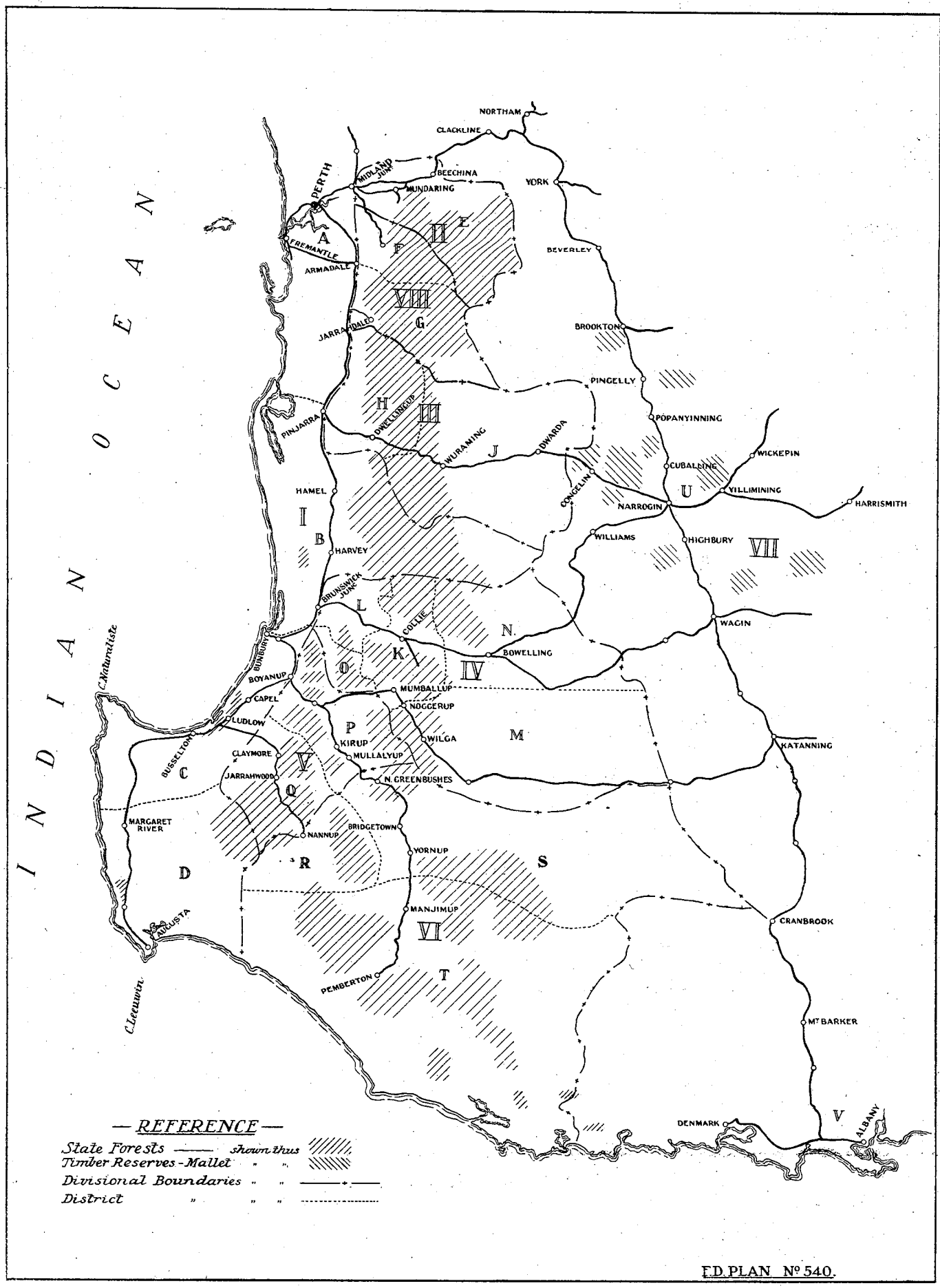
Division.				District or Sub-district.
I.	...	...	...	A Metropolitan.
				B Yarloop.
				C Busselton.
				D Margaret.
II.	...	...	...	E Mundaring.
III.	...	...	...	H Dwellingup.
				J Wuraming.
IV.	...	...	...	K Collie.
				L Worsley.
				M Noggerup.
				N Muja.
				O Wellington.
V.	...	...	...	P Kirup.
				Q Jarrahwood.
VI.	...	...	...	R Nannup.
				S Bridgetown.
				T Manjimup.
VII.	...	...	...	U Narrogin and balance of Crown Lands in Ag- ricultural Area.
				V Albany.
VIII.	...	...	...	G Jarrahdale.
				F Karragullen.

LIST OF BOTANICAL NAMES OF LOCAL SPECIES REFERRED TO IN THIS REPORT.

Jarrah (<i>Eucalyptus marginata</i>).
Karri (<i>Eucalyptus diversicolor</i>).
Wandoo (<i>Eucalyptus redunca</i> , var. <i>elata</i>).
Tuart (<i>Eucalyptus gomphocephala</i>).
Tingle Tingle (<i>Eucalyptus Jacksoni</i>).
Sandalwood (<i>Santalum spicatum</i>).
North-West Sandalwood (<i>Santalum lanceolatum</i>).
Brown Mallet (<i>Eucalyptus astringens</i>).
Blackboy (<i>Xanthorrhoea Preissii</i>).

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(1) STATE FORESTS (FORESTS ACT, 1918).

	June, 1929.	June, 1930.	Increase or Decrease.
	acres.	acres.	acres.
Jarrah	2,423,660	2,425,032	+ 1,372
Karri	152,130	151,780	- 350
Jarrah and Karri (Mixed)	372,190	372,292	+ 102
Tuart	5,932	5,932	...
Tingle Tingle	13,667	13,967	+ 300
Sandalwood	1,930	1,930	...
Pine Planting	4,835	4,835	...
Total	2,974,344	2,975,768	+ 1,424

Additions were made to State Forests 21, 28 and 29 amounting to 802 acres. The balance of the total increase shown in the above table is accounted for by adjustment of areas following the lodgment of certified plans by the Surveyor General.

(2) TIMBER RESERVES (FORESTS ACT, 1918).

	June, 1929.	June, 1930.	Increase or Decrease.
	acres.	acres.	acres.
Jarrah	36,349	36,302	- 47
Other Species—			
Sandalwood	27,105	27,105	...
Pine Planting	5,331	5,331	...
Mining Timber, Firewood, etc.	1,333,202	1,354,807	+ 21,605
	1,401,987	1,423,545	+ 21,558

One additional Timber Reserve was declared during the year, *i.e.*, 95/24 at Coconarup near Ravens-thorpe for timber for fencing requirements, the area of which is 22,800 acres.

Reserve 81/25 was reduced by 1,195 acres by adjustment and 72/25 was reduced by 47 acres released for settlement.

CHAPTER II.

REVENUE.

Although the quantity of timber produced from Crown Lands was 633,597 cubic feet (in the round) less than for the previous year, there was no serious reduction in revenue, due mainly to the fact that the last of the old time leases and concessions expired and were brought under permit conditions under the terms of "The Forests Act, 1918." In consequence, timber obtained therefrom was subject to the payment of royalties comparable to those paid by other sawmillers.

The retention of the term "royalty for" the value of standing timber sold by public auction or tender is unfortunate. As an arbitrary tax, these values may be considered high, but, as the market value of a crop which has to be replaced and grown at a profit from the proceeds of such sale, they are low. Forestry is essentially a business undertaking which can only operate on sound lines by securing a reasonable return for the raw material produced. With a decrease in the quantity of timber sent overseas, the timber trade must look to markets for higher grade products, and there are indications that these are not wanting when greater attention is paid to vital problems of improved grading and seasoning.

The gross revenue collections for the year were £173,219, a reduction of £17,804 on the previous year's figures. This can be attributed to cessation of operations at the departmental Tuart Mill at Wonnerup, which last year produced a revenue of £18,515, compared with £1,706 for the current year, and to a reduction of £3,893 in the sandalwood revenue. With the exception of inspection fees, which were £904 lower than the previous year's collections, other sources showed slight increases.

The following statement shows the principal sources of revenue for the past two years:—

Year.	Royalties.		Inspection fees.	Sawn Tuart.	Sandalwood.	Firewood, fencing, and mining timber.	Miscellaneous.	Total.
	Logs for sawmilling.	Hewn timber.						
1928-29	£ 110,441	£ 1,846	£ 7,608	£ 18,515	£ 45,268	£ 1,732	£ 5,613	£ 191,023
1929-30	111,416	2,957	6,704	1,706	41,375	1,714	7,347	173,219

Under the existing arrangement with the Group Settlement Department, a further amount of £2,189 was transferred, making the total contribution £30,201, on account of timber hewn from Group Settlement holdings.

TIMBER PRODUCTION.

PRODUCTION OF TIMBER FOR YEAR ENDED 30TH JUNE, 1930 (EXCLUSIVE OF MINING TIMBER, FIREWOOD AND PILES AND POLES).

No. of Division.		MILL LOGS.					HEWN TIMBER.				Grand Total.	
		Jarrah.	Karri.	Other.	Total.		Jarrah.	Wandoo.	Total.			
					In Log.	Recovery of Sawm Timber.			In Square.	In Square.	In Log.	In Square.
		cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.	cub. ft.
1	Crown Lands ...	4,022,575	1,457	331,080	4,355,112	1,524,172	71,389	790	360,895	72,179	4,716,007	1,596,351
	Private Property ...	9,000	...	48,917	57,917	20,271	312,039	88,003	2,000,210	400,042	2,058,127	420,313
2	Crown Lands ...	...	...	3,061	3,061	1,071	18,607	...	93,035	18,607	96,096	19,678
	Private Property ...	...	...	...	...	...	6,818	9,431	81,245	16,249	81,245	16,249
3	Crown Lands ...	8,547,118	...	6,408	8,553,526	2,993,734	45,718	...	228,590	45,718	8,782,116	3,039,452
	Private Property ...	500,000	...	...	500,000	175,000	77,245	49,834	635,395	127,079	1,135,395	302,079
4	Crown Lands ...	3,011,626	...	4,913	3,016,539	1,055,789	131,365	2,605	669,850	133,970	3,686,389	1,189,759
	Private Property ...	148,218	...	...	148,218	51,876	486,488	151,020	3,187,540	637,508	3,335,758	689,384
5	Crown Lands ...	3,072,839	...	...	3,072,839	1,075,494	37,930	...	139,650	37,930	3,262,489	1,113,424
	Private Property ...	20,090	...	...	20,090	7,031	508,865	1,138	2,550,015	510,003	2,570,105	517,034
6	Crown Lands ...	2,782,576	4,798,684	...	7,581,260	2,269,547	131,156	...	655,780	131,156	8,237,040	2,400,703
	Private Property ...	17,757	283,683	...	301,440	82,809	280,793	354	1,405,735	281,147	1,707,175	363,956
7	Crown Lands ...	726	...	4,443	5,169	1,809	2,153	...	10,765	2,153	15,934	3,962
	Private Property ...	40	...	689	729	255	60,104	92,210	761,570	152,314	762,299	152,569
8	Crown Lands ...	2,794,620	...	107	2,794,727	978,154	12,673	...	63,365	12,673	2,858,092	990,827
	Private Property ...	3,500	...	...	3,500	1,225	...	...	...	...	3,500	1,225
Totals ...	Crown Lands ...	24,232,080	4,800,141	350,012	29,382,233	9,899,770	450,991	3,395	2,271,930	454,386	31,654,163	10,354,156
	Private Property ...	698,605	283,683	49,606	1,031,894	338,467	1,732,352	301,990	10,621,710	2,124,342	11,653,604	2,462,809
Grand Total ...		24,930,685	5,083,824	*399,618	30,414,127	10,238,237	2,183,343	395,385	12,893,640	2,578,728	43,307,767	12,816,965

* Includes 344,779 cub. ft. Tuart, 33,201 cub. ft. Pine, 9,667 cub. ft. Sheoak, 7,019 cub. ft. Blackbutt, 2,256 cub. ft. Marri, 2,205 cub. ft. Wandoo, 482 cub. ft. Banksia, 9 cub. ft. Native Pear.

(Factors for conversion of round to squared: Sawm Karri, 27%; other sawn, 35%; Hewn, 20%.)

Sawmilling and Hewing on State Forests and Crown Lands.

During the year under review 12,816,965 cubic feet of sawn and hewn timber, valued at £1,600,000, were produced from 43,307,767 cubic feet of logs. These figures show a reduction of approximately half a million cubic feet on last year's output and a falling off in value of £150,000.

The respective quantities obtained from Crown lands and private property during the past two years are set out in the following statement:—

Year.	From Crown Lands.			From Private Property.		Estimated Value of timber obtained.
	Sawn timber other than sleepers.	Sawn sleepers.	Hewn timber.	Sawn timber including sleepers.	Hewn timber.	
1928-1929 ...	cub. ft. 10,045,391	cub. ft. 555,776	cub. ft. 297,905	cub. ft. 671,663	cub. ft. 1,744,674	£ 1,750,000
1929-1930 ...	9,642,119	257,651	454,386	338,467	2,124,342	1,600,000

With the falling off of overseas orders and the slump in the local building trade, a number of mills failed to operate during the year. At the present time there are 36 mills working on Crown lands with an intake of approximately 16,000 mill logs per month.

The volume of mill logs obtained from Crown lands during the year totalled 29,382,233 cubic feet, and from private property 1,031,894 cubic feet. The yield of sawn timber from these logs amounted to 10,238,237 cubic feet.

Jarrahdale concession and several of the timber leases on which mills were operating expired during the year, and further cutting rights on these areas were submitted to sale by tender, which resulted in the original lessees securing the permits under revised conditions. Royalties up to 9s. per load in the round were obtained. The average royalty paid to the Department on Jarrah and Karri mill logs during the year was 3s. 9d. per load, or a fraction under one penny per cubic foot.

454,386 cubic feet of hewn timber were obtained from Crown lands and 2,124,342 cubic feet from private property. These figures show an increase of 536,149 cubic feet on the previous year's figures.

Hewing operations on Crown lands were carried out chiefly under monthly local hewing permits over areas to be brought under sylvicultural treatment and on Group Settlement blocks on which the timber had been reserved to the Crown.

The Railway Department continued to purchase supplies of Wandoo sleepers, the majority of which are being obtained from private property. During the year 395,385 cubic feet of this class of timber were obtained.

TIMBER EXPORTS.

There was again a marked falling off in the quantity of timber exported, the volume for the year being 6,579,743 cubic feet, or 1,055,494 cubic feet less than for the previous year.

The value of the timber exported as declared by the Customs Department was £812,112, and represents a fall of £154,921 on the figures for 1928-29.

The principal buyers of Western Australian timber during the past year were the Eastern States of Australia, 1,770,059 cubic feet; South African Union, 1,355,837 cubic feet; Ceylon, 1,005,125 cubic feet; New Zealand, 901,655 cubic feet; and Great Britain, 878,448 cubic feet.

TIMBER INSPECTION.

The quiet period experienced in the timber export trade is responsible for the decrease of £904 in the amount of revenue collected for timber inspection during the year as compared with the revenue for the previous year.

The total amount received from this source was £6,704. 3,295,226 cubic feet of sawn and hewn timber, and 47,436 lineal feet of piles, poles, and beams were submitted for inspection.

TIMBER IMPORTS.

The value of timber imported to this State for the year amounted to £197,532, which is £44,069 less than for the previous year. The principal countries of origin of this timber are: America, £71,685; Eastern States of Australia, £68,086; Sweden, £12,206; Norway, £7,419; and Canada, £5,343.

SANDALWOOD.

The total revenue from sandalwood for the past year amounted to £41,375, or £3,893 less than for the previous year. This source of revenue has been seriously affected by the export of sandalwood from private property in this State and in South Australia, and by the continued unsettled conditions in China.

Sandalwood pulled during the year ended 30th June, 1930:—

Locality.	Quantity.		
	For Oil Distillation within the State.	For Export.	Total.
From Crown Lands, South of 26th parallel of South Latitude	tons. 1,772	tons. 3,335	tons. 5,107
From Crown Lands, North of 26th parallel of South Latitude	902	...	902
From Private Property	29	842	871
Total	2,703	4,177	6,880

As accumulated stocks of sandalwood at Fremantle now total approximately 7,000 tons, the issue of further orders for export wood is being held up pending a shipment to China.

The quantity of sandalwood obtained for export from Crown lands for the year was 3,664 tons, for which orders had been placed during the previous year.

83 applications were received from the holders of Conditional Purchase Leases, on which the sandalwood had been reserved to the Crown, for permission to pull the sandalwood on their properties, and in 55 cases orders involving 320 tons were arranged with the sandalwood licensees for the wood pulled.

The four companies holding licenses from the Department to obtain sandalwood from Crown lands, viz., Paterson & Co., Ltd., W.A. Sandalwood Co-operative Co., Ltd., John Hector & Sons, and Burrige & Warren, Ltd., amalgamated to form one selling agency in this State, and now trade under the name of The Australian Sandalwood Company, Limited.

Sandalwood from Private Property.

During the past year sandalwood contractors operating on privately owned land obtained 871 tons of wood. The fact that this is 681 tons less than the quantity obtained during the previous year is due to the introduction of legislation in December last to restrict the output of sandalwood from Crown lands and private property. The Sandalwood Act, 1929, provides that sandalwood may only be obtained from Crown land or alienated land under licenses issued by this Department, and that the quantity of wood to be pulled from all sources during any period shall be fixed by Order in Council. The sandalwood to be obtained from private property under license is not to exceed in the aggregate 10 per cent. of the total quantity as determined by Order in Council.

Since the introduction of this Act, 46 licenses covering the operations on 133 private property blocks have been issued. Privately owned blocks from which sandalwood was obtained during the past 12 months numbered 545, and of these 534 were inspected by officers of the Department. It was found

on several occasions that sandalwood had been obtained illegally from Crown lands and declared from private property. Proceedings were taken against three offenders and heavy penalties were imposed by the Magistrates.

The Department experienced considerable difficulty in detecting offences of this nature and found it necessary to temporarily augment the staff on sandalwood patrol work. To meet the added expense an inspection fee of £1 per ton was charged on all sandalwood obtained from private property. The inspection fees received during the year amounted to £747.

Sandalwood to the value of £1,702 was confiscated for breaches of the sandalwood regulations, the majority being in connection with private property operations.

Sandalwood for Oil Distillation.

It is pleasing to report that there has been a decided increase in the quantity of sandalwood used locally for the distillation of sandalwood oil.

The requirements of distillers have grown from 1,400 tons of sandalwood material during the year 1928-1929 to 2,703 tons during the past year, and had it not been for the fact that the plant of the Braddock Essential Oil Co., Ltd., was destroyed by fire during the year the consumption would have been larger. This Company is at present engaged in rebuilding their works and should be in operation at an early date.

As distillers have in the past relied to a large extent on roots and butts obtained from the sandalwood logs pulled from Crown lands for export to meet their needs, the inability of licensees to purchase further logs while they were holding such large stocks at Fremantle made it necessary for distillers to seek supplies from other directions. Accordingly experiments were carried out with old roots and stumps that had been left in the ground following past pulling operations, and although these did not prove equal to the freshly pulled material it has been found possible to utilise them by mixing them with sandalwood logs obtained from other sources. The following statement shows the source of their supplies:—

New Roots and Butts obtained from export sandalwood—Crown lands ..	1,075 tons
New Roots and Butts obtained from export sandalwood—private property	29 "
Old Roots and Stumps from Crown Lands	438 "
Sandalwood Logs from Eastern Goldfields	259 "
Sandalwood Logs from Carnarvon District	642 "
Sandalwood Logs from extreme North-West	260 "
Total	2,703 tons

The quantity of sandalwood oil exported from this State for the year reached the record figure of 131,400 lbs., which is 39,000 lbs. in excess of the previous year.

OTHER FOREST PRODUCE:

The quantity of Mallet bark stripped during the year amounted to 4,824 tons. With the exception of 94 tons the whole of this quantity came from private property. £36 was received in royalty and £245 from sales of bark obtained by direct conversion.

Three thousand eight hundred and twenty-three tons of tanning barks valued at £40,628 were exported during the year. Germany purchased 2,078 tons, the Eastern States of Australia 1,423 tons, and the balance went to the Netherlands.

FOREST PRODUCE NOT ELSEWHERE INCLUDED IN PRODUCTION TABLES OBTAINED DURING YEAR ENDED 30TH JUNE, 1930, AND REPORTED TO THE DEPARTMENT.

Description of Forest Produce.	SOUTH-WEST DIVISION AND AGRICULTURAL AREAS.								Central and Eastern Divisions.	North-West and Kimberley Divisions.	Total.
	Forest Division No.										
	1	2	3	4	5	6	7	8			
Mining Timber ... tons	...	...	...	7,406	...	...	153	...	5,895	...	13,484 tons
Do. do. ... lin. feet	...	...	...	...	...	...	...	...	...	† 23,420	23,420 lin. ft.
Sleepers for Goldfields Wood No.	...	...	...	...	...	...	...	...	18,270	...	18,270 No.
Lines											
Firewood including Charcoal* tons	140,000	14,912	1,408	...	39	90	3,613	19,860	121,178	...	301,100 tons
Mining Firewood ... tons	...	...	...	...	...	975	8,487	...	187,260	† 3,592	200,314 tons
Piles and Poles* ... lin. feet	13,560	438	1,650	13,104	1,131	47,436	2,555	...	...	...	79,924 lin. ft.
Fencing Posts and Rails ... No.	5,628	...	...	...	...	200	13,505	...	1,056	...	20,339 No.
Blackboy ... tons	220	...	...	...	...	...	17	...	...	...	237 tons
Blackboy Gum ... tons	6	...	...	...	...	...	...	...	...	...	6 tons
Mallet Bark* ... tons	...	...	...	...	...	...	4,824	...	...	...	4,824 tons
Wattle Bark ... tons	3	...	...	...	...	...	...	...	...	...	3 tons

* From Crown lands and private property. † Figures for Meekatharra District only.

NOTE.—Except where otherwise stated, this statement includes only forest produce obtained from Crown lands under permit or license.

FOREST OFFENCES.

During the year fifty-two offences were reported to Head Office by field officers, and in seventeen cases it was decided to take proceedings against the offenders. Twelve convictions were recorded and fines amounting to £172 10s. were imposed. Several of the cases dealt with were of a serious nature, and heavy penalties were inflicted by the Magistrates.

The illegal cutting of sleepers on Crown lands resulted in a defendant being fined £40, and in addition he was required to pay damages amounting to £50 to the Department. A similar fine was imposed for the illegal pulling of sandalwood, and in two other cases of a like nature the Court ordered that fines of £25 and £10 respectively be paid. The Department had occasion to take proceedings against five persons for being concerned in the lighting of fires in State forest, but decisions were only given in favour of the Department in two cases, when the offenders were ordered to pay fines of £25 and £10 respectively. The remaining three cases were dismissed without any order as to costs.

Sandalwood to the value of £1,702 was confiscated and sold for breaches of the Sandalwood Regulations. Where it was evident that the breach had been unintentional and there was no attempt to evade royalty payments, a compassionate payment was made to the sandalwood getter to cover out-of-pocket expenses in carting and railing the wood.

The total amount paid in this way was £356 14s.

Other forest produce valued at £8 was confiscated.

CHAPTER III.

1. EXPENDITURE.

The cost of administration and collection of revenue, which is a charge against Consolidated Revenue, amounted to £23,096.

The amount expended from the Reforestation Fund was £107,048. From the tabulation hereunder it will be seen that the amount paid into the fund for the year was considerably less than the expenditure, and that the credit balance was reduced to £55,023. In view of the seasonal nature of forest work and the dependence of the fund on operations of the sawmilling industry, this reserve must be considered extremely low. The results of many years' work are dependent on the continuance of such essential services as fire control, and, with the return of more normal conditions, every effort should be made to again build up the Reforestation Fund, so that the year's proposals are based on money in hand and not on estimated future collections. In times of stress, however, every effort must be made to minimise unemployment, but the risks taken in reducing the balance in the Fund to less than the amount necessary to maintain the permanent cadre for at least six months should not be lost sight of.

The following statement shows the position of the Reforestation Fund (Sec. 41 "Forests Act, 1918") at the close of the Financial Year:—

Revenue for 1929/30	...	...	...	...	...	£	£	£
Less Consolidated Revenue Expenditure	...	...	...	...	...	...	23,096	170,128
Interest on Loan	...	...	...	...	...	...	3,760	
Sinking Fund	...	...	...	...	...	...	184	
Special Acts	...	...	...	...	...	1,080		
Less Overcharge, 1928/29	...	...	...	...	...	85		
							995	
							28,035	
Less adjustment of Sinking Fund in accordance with Financial Argeement Act	...	...	...	...	...	...	280	27,755
								£142,373
Net Revenue	...	...	...	...	...	...

After crediting three-fifths of the above amount to the Reforestation Fund, the position at the close of the year was as shown hereunder:—

Balance at 1st July, 1929	...	...	...	...	...	£	£
Three-fifths of net revenue transferred	...	...	...	...	...	85,145	76,647
Balance due	...	...	...	...	...	279	
Sundry Recoups	...	...	...	...	...		85,424
							7,570
Less Expenditure, 1929/30	...	...	...	...	...		169,641
							114,618
Balance available	...	...	...	...	...		£55,023

2.—REFORESTATION OPERATIONS.

(A) FOREST MANAGEMENT.

SUMMARY OF WORK CARRIED OUT DURING THE YEAR.

District.	Topograph- ical Survey.	Assessment Survey.	Additional Local Working Plans prepared.	Houses erected or purchased.	Roads and Tracks cleared.	Telephone Lines constructed.
DIVISION 1:	acres.	acres.	acres.		miles.	miles.
Metropolitan ... ..	...	...	...	...	...	...
Yarloop ... ..	...	...	...	...	1½	...
Busselton ... ..	...	...	...	...	7¼	...
DIVISION 2:						
Mundaring ... ..	...	1,000	...	...	...	3¾
DIVISION 3:						
Dwellingup	26,880	} 40,000	{ ...	2	48	2½
Wuraming	21,120			...	43	...
Huntly	15,360			...	72	...
DIVISION 4:						
Collie ... ..	...	...	...	...	...	1½
Collie, South ... ..	...	600	...	2	5	10
DIVISION 5:						
Kirup ... ..	...	...	71,360	5	83½	} 25
Jarrahwood ... ..	...	6,000	*12,050	...	10	
DIVISION 6:						
Greenbushes ... ..	...	39,000	...	...	5½	...
Manjimup ... ..	...	...	...	...	...	...
Nannup	48,000	...	23,920	3	20	...
DIVISION 7:						
Narrogin ... ..	...	12,140	...	...	15¾	31
DIVISION 8:						
Jarrahdale	107,800	218,000	...	...	45½	...
Karragullen	25,000	11,750	...	1	85	12
Totals	244,160	328,490	107,330	13	442	85½

* Previously under Working Plan—new plan prepared.

FOREST SURVEYS.

The practice of encircling areas of 3,000 to 5,000 acres by skeleton theodolite surveys was continued in extensive forest tracts where there were insufficient Lands Department surveys to serve as a basis for compass survey.

Working from permanent pegs placed during these surveys four camps, using the Forester's compass as instrument, ran tracks, old tramway formations and topographic features within the outline-surveys so provided. An increased mileage of 1,542 miles was completed, compared with 439 miles during 1928-29.

The areas which received most attention were the Jarrahdale, Dwellingup and Nannup Districts, where detailed surveys and plans were required to enable silvicultural work already commenced to be extended and new working plans to be prepared.

ASSESSMENT AND CLASSIFICATION.

The principal assessment during the past year was carried out by a small mobile gang on cut-over bush covering 218,000 acres in the Jarrahdale-Karragullen Districts. The common grid-iron system of classification was departed from, being too laborious and costly for the type of classification required, and a scheme was evolved entailing the running of lines on known bearings between fixed pegs placed during the theodolite survey of the previous year. This method proved more economical and the plans so prepared were used to determine the permissible cut following the expiration of the old Concession, and are proving satisfactory as a basis for fixing logging sections and order of working under the new Working Plan.

Compartment stock maps showing full details of quality classes of timber, stand, and conditions of regrowth were prepared in a greater number than last year, especially in the Jarrahwood and Greenbushes areas.

In the Mundaring District and at Pardelup Prison Farm Plantation, classifications of soil and timber types were conducted with a view to selecting further areas suitable for the growing of conifers.

12,000 acres in the Mallet area were mapped, soil and timber types being delineated. From these plans recommendations will be made regarding the reservations of Mallet areas.

WORKING PLANS.

No new Working Plans were submitted to Executive Council during the year, but plans covering the management of cut-over bush in the Kirup and Nannup Districts were prepared.

PERMANENT ESTABLISHMENTS.

The opening up for management and silvicultural treatment of large areas in the Kirup and Nannup Districts and the need for having forest workers in close proximity to their work entailed the purchase of three and building of five houses at those centres. The practice of grouping the houses in small settlements was continued.

As reforestation work is limited to country which has been worked through by sawmills, practically all of which used locomotives running on 3ft. 6in. gauge lines for hauling logs to the mill, it is possible, by opening up old formations, and in places constructing short links, to provide an excellent road system throughout the forest. The expenditure is slightly increased if these tracks are required for use by vehicular traffic in winter months, but, as forest management is extended, adjoining districts are being connected by a series of bush tracks which are a valuable asset in working the forest. It is now possible to travel over these forest tracks from Mundaring Weir to Dwellingup.

Communication by telephone between District Offices, fire lookouts, Overseers' homes, and field parties was extended by the construction 85¾ miles of line. The combination tree and pole line with free running wire was used. Jarrahwood and Kirup Headquarters were connected and a system extending 31 miles in the Mallet areas was in operation during the fire season.

(B) SILVICULTURE.

(a) Jarrah.

SUMMARY OF OPERATIONS FOR THE YEAR.

District.	Top Disposal Operations.	Treated for Regeneration.	Thinning and Improvement of Existing Regrowth.	Tree-marking (Sawmilling and Hewing).
	acres.	acres.	acres.	acres.
DIVISION 1— Yarloop	3,318	...	...	...
DIVISION 2— Mundaring ... ..	...	343½	602	...
DIVISION 3— Dwellingup Wuraming Huntly	4,772 5,752 2,604	2,129 3,338 3,137	2,429 4,707 2,068	4,510 169 1,955
DIVISION 4— Collie Collie, South ... ..	... 2,979	1,148 1,478	878½ 34	3,040 5,353
DIVISION 5— Kirup Jarrahwood	3,145 5,563	453 2,153	8,282 4,295	1,811 3,319
DIVISION 6— Greenbushes Nannup ... ..	... 2,697	724 1,055	1,311 456	355 ...
DIVISION 8— Karragullen Jarrahdale	3,850 4,097	2,406 1,024	509 354½	1,812 2,023
Totals	38,777	19,388½	25,926	24,347

During the year the number of mills working on Crown lands was 38, of which 20 operated under tree marking conditions.

Five large mills, namely Jarrahdale, Nanga Brook, Hoffman, Mornington and Kirup, drawing their supplies from concessions or leases, ceased operations under these conditions during the year and were granted permits under the Forests Act, and will now be restricted to a fixed log intake. This step was taken in accordance with the provisions of the General Working Plan for the Jarrah forest which aims at the control of log consumption by the sawmilling industry so that, in ten years' time, the annual consumption will be on a sustained yield basis.

The determination of the permissible cut dealt with in the General Working Plan drawn up and approved of by Executive Council in 1928-29 was subject to the proviso that the rapid extension of reforestation and protective measures during the next few years would ensure that the area being treated annually was at least equal to the area being worked over for mill logs. In the twelve months which have elapsed since the Plan came into operation, regeneration and tending treatment has so increased that the above assumption is now an accomplished fact. Approximately 39,000 acres were cut over during the past year for mill logs, while the area treated silviculturally was 45,000 acres.

This has been rendered possible by the restricted cut of mill logs, the general increase in regeneration cleaning proper, and the very considerable increase in tending operations involving the thinning of overstocked young stands and the improvement of the standing crop by the removal by ringbarking of useless overmature trees. This work is of particular importance in natural regeneration which has reached pole size without fire protection, as many of the dominants are malformed.

Tree marking, both for hewing and sawmilling, was extended during the year.

The area marked for sawmilling was 18,000 acres, which is 1,000 acres less than that treated for regeneration cleaning. 6,000 acres were marked for hewers working under short time local hewing permits.

(b).—Other Species.

TUART.

Excessive grazing and frequent burning of the Tuart forest have created abnormal conditions which render the regeneration of the species extremely difficult. The understory of Peppermint (*Agonis flexuosa*) which coppices very vigorously after a fire, has spread until parts of the forest are covered with dense thickets. It is almost impossible for regeneration of any Eucalypt to cope with these conditions, but conifers have proved able to meet the competition, and give every indication of being able to suppress the peppermint. As an experiment extending over several hundred acres, all overmature Tuart and other species have been clear felled. With a well controlled burn, the groups of immature Tuart are not seriously affected by the fire, following which the balance of the area is being planted up with pines.

KARRI.

Silvicultural work in the Karri forest increased during the year with the extension of operations at Boranup, where approximately 1,000 acres were afforded treatment to improve the existing stand of fine young Karri. Firebreaks were cleared in the fringe of the Karri belt and fire control methods instituted.

At Big Brook, Pemberton, a final burn was put through 4,500 acres, which had been subjected to preliminary treatment, and, subsequent to the general burn, 3,850 acres were finally ringbarked. On sparsely stocked areas covering 270 acres, Karri seed was spot sown at the rate of $\frac{3}{4}$ lb. to the acre.

MALLET.

The regeneration of Mallet by clearing and sowing increased considerably during the past year, 277 acres being spot sown. Poor country unsuitable for agricultural purposes is utilised. The thinning and stripping of Mallet for bark was extended from the Wickepin area to cover Contine, Congelin, Highbury and Lol Gray, 231½ acres being thinned in comparison with 48 acres in the previous year.

The scattered nature of the Mallet stand and its extreme susceptibility to fire led to the extensive formation of firebreaks subdividing the reserves into areas of 300-500 acres. Narrow strips along 86 miles of breaks were cleared to allow burning between ploughed lines. These breaks will have an increasing value as planting operations are extended.

(C).—FIRE CONTROL.

District.	Area under Fire Control.	Indigenous Forest.		Pine Plantation.	
		Regenerated and tended.	Fire losses.	Planted area.	Fire losses.
	acres.	acres.	acres.	acres.	acres.
DIVISION 1—					
Metropolitan	4,000	...	...	661½	44½
Yarloop	5,600	...	...	552½	...
Busselton	6,500	2,976	...	969½	...
DIVISION 2—					
Mundaring	30,000	2,228	134	1,430	...
DIVISION 3—					
Dwellingup	} 200,000	11,800	225	...	...
Wuraming		10,886	...	...	...
Huntly		5,774	...	...	...
DIVISION 4—					
Collie	} 155,000	20,897	{ ...	329½	... 20
Collie, South ... ..				...
DIVISION 5—					
Kirup	89,500	12,634	...	...	...
Jarrahwod	122,600	17,100	...	...	...
DIVISION 6—					
Greenbushes	} 35,000	5,785	150	...	...
Nannup		2,631	...	65½	...
Manjimup		4,756	...	53	...
DIVISION 7—					
Narrogin	50,000	1,268	...	...	...
DIVISION 8—					
Karragullen	24,500	10,761	226	...	...
Jarrahdale	7,000	3,565	...	...	...
Totals	723,700	113,061	2,770	4,061½	64½

That fire control methods as adopted some years ago and improved upon yearly, are proving most efficient is shown by the fact that, during the past season, in which exceptionally dangerous bush fires occurred throughout the State, the losses of treated country in the area under fire control amounted to only 0.3%.

The most serious fire damage occurred on 20th January, 1930, when there was a very heavy wind associated with a shade temperature of 108° and low humidity. These conditions followed an excessively hot dry spell, in which only 18 points of rain fell in seven weeks. Of these, 15 points were registered six weeks before the outbreak. It was on this day that the large area of treated country was burnt at Collie. This area was some of the first country treated for regeneration in 1922 and 1923, and the importance of a severe "final burn" was not then fully appreciated. These Compartments had been recognised as a serious fire hazard, but they had almost reached the stage when a first thinning was practicable, and this would have been carried out in the following winter, thus greatly decreasing, but not eliminating, the hazard. Their loss was unfortunate, in view of the time which had elapsed since treatment, but a more satisfactory forest will ultimately result. Another unfortunate loss occurring on the same day was two compartments of pines at Applecross plantation. Owing to private property on which poultry runs were established extending to the boundary, back firing was not permitted, with the result that a spark carried across a road and firebreak and set silver grass between the young pines alight. Had the pines formed canopy, it is extremely unlikely that any damage would have resulted.

Immediate detection of an outbreak by lookout towers (of which four are now established), quick communication by telephone from tower to District Headquarters and from there by the same means to field parties working in the area affected, extensive preliminary precautions in the form of general controlled burning by light ground fires, disposal of all tops left in milling and hewing operations by burning, burning of 5-chain wide belts around areas on which silvicultural operations have been carried out, and the provision of speedy access to the danger zone by means of cleared roads and tracks, have reduced fire damage to a minimum.

A new feature which proved both economical and efficacious for summer communication was the use of long lengths of ordinary galvanised fencing wire (No. 10 gauge) which were connected to the main tree line system and run out along the ground without insulation. Lengths up to 1½ miles were used, and one system of 30 miles of insulated tree line with ten telephones functioned with as much as seven miles of this uninsulated ground wire attached with six extra instruments. It is interesting to note that parties working under these conditions found they could establish a good "earth" where no moist ground was available by driving an axe into a growing Marri tree and attaching the earth wire to the axe, preferably by soldering.

The formation of fire lines or scraper tracks five chains within Compartment boundaries was extended greatly during the year, 498 miles being formed. The five-chain belts so formed are burnt as protective belts. In many cases such belts carrying a stand of young Jarrah were thinned and the tops burnt, thus rendering the firebreak a degree more efficient. On either side of main bush roads which were in common use fire belts of this nature were also made.

The building of Overseers' houses in positions in close proximity and, in many cases, commanding a view of their work, has brought the men into closer contact with conditions on their working areas, and the attendant problems of controlled burning. The knowledge thus gained has enabled them to suit their controlled burning to the various cases as they are presented.

Another feature of interest has been the establishment of direction finders at Overseers' houses, which command a view of country under protection. This enables the Overseer to give District Headquarters check cross bearings on a fire and locate its position for himself. This system is used in the Mallet areas where no fire tower has been built.

3.—AFFORESTATION.

AREAS PLANTED DURING THE MONTHS OF JUNE, JULY, AND AUGUST, 1929.

Planting Area.	Area established prior to 1929.	Area Planted, 1929.			Total.
		<i>Pinus radiata.</i>	<i>Pinus pinaster.</i>	<i>Other Species.</i>	
	acres.	acres.	acres.	acres.	acres.
Myalup	215	1	126½	1	343½
Harvey Weir	126½	29½	...	6	162
Gnangara	187½	...	53	...	240½
Applecross	155½	...	70	...	225½
Collier	149½	...	46	...	195½
Mundaring—Helena	518½	...	...	...	518½
Greystones	406	71½	...	11	488½
Beraking	59½	72	6½	27½	165½
Mudros	122½	59½	3¼	14½	199½
Darkin ... ..	...	58	...	...	58
Ludlow—Coolilup	831½	...	...	10	841½
Stirling	76½	1	35½	15	128
Collie—Mungahup*	66½	...	...	...	66½
Proprietary	170½	...	32½	...	203
Hamel	47	...	...	...	47
Bowelling*	55½	...	...	5	60½
Nannup*	56	...	...	9½	65½
Big Brook*	26½	...	...	26½	53
	3,269½	292½	373	126	4,061½
		791½ acres.			acres.

* Denotes experimental area.

In the 1929 planting season the area of pine plantations was increased by 791 acres, bringing the total area under pines to 4,061 acres. *Pinus radiata* and *Pinus pinaster* again formed the main planting stock, but there was a marked increase in the experimental planting of other species of conifers, such as *Pinus canariensis*, *P. palustris*, *P. longifolia*, *P. laricio*, *P. taeda*, *P. caribaea*, *P. Jeffreyi*, *P. Coulteri*, *P. Banksiana*, *P. ponderosa*, *P. echinata*, *P. muricata*, *P. Lambertiana*, *P. Patula*, *P. strobus*, *P. sylvestris*, *P. Massoniana*, *P. luchuensis*, *Taxodium distichum*, *T. mucronatum*, *Sequoia sempervirens*, *Picea sitchensis*, and *Pseudotsuga taxifolia*—126 acres being established.

The two main planting areas are Mundaring (5 plantations) and the Metropolitan area (Gnangara, Collier, and Applecross). At Mundaring the principal species planted on the non-jarrah country of the Goldfields Water Supply Catchment Area was *Pinus radiata*. This species has shown remarkably good growth, and at the present time thinnings from a compartment established in 1922 are being sold and utilised commercially by a local firm of box manufacturers. The returns derived from the sale of the biggest of the thinnings will pay for the cost of thinning and pruning the whole plantation.

On the Metropolitan plantations and also at Myalup, Collie, and Ludlow, the planting of *Pinus pinaster* on sandplain of no agricultural value has been continued, 373 acres of this species being established during the season.

At Big Brook, near Pemberton, where the annual rainfall is in the neighbourhood of 60 inches, and climatic conditions more equable and temperate, a large number of various species of conifers are being tried out in small experimental plots.

At Pardelup Prison Farm, in the Albany District, clearing and forming firebreaks on a plantation which is being established under an agreement with the Prison authorities were carried out. Planting will commence in 1930, and it is expected to establish 100 acres per annum. The chief species used will be *Pinus radiata*.

In centres north of Harvey it has been found that, to eliminate root competition of persistent indigenous woody scrub, and so ensure the conservation of soil moisture for the young pines, cultivation by ploughing is necessary prior to planting. Ploughing and cross-ploughing (in sand-plain country), one-way ploughing and ploughing in strips, have been used in various cases according to the degree of cultivation required, and the cost.

The spacing distance of various species has also claimed attention, and the widening of the planting distance in many cases has resulted in the lowering of costs.

Local nurseries at the various centres are now well established and are providing good planting stock—thereby lessening the cost of transport. A saving has also been effected in the method of weeding, by the introduction of the use of the flame thrower. Before pine seeds in the nursery beds germinate, the weeds which have made their appearance in the cotyledonary stage are burnt off by passing the flame over the beds. This does not affect the later growth of the pine in any way, and costly hand and machine weeding is reduced to a minimum.

At Hamel, Ludlow, and Mundaring the thinning of young stands of *Pinus radiata* and *P. Pinaster* was continued.

At Ludlow 427½ acres of *P. pinaster* were treated, while 14,400 cubic feet of logs were removed from stands of *P. radiata* and converted into case wood by a local mill.

At Hamel 14,500 cubic feet of thinnings were removed and supplied to case mills operating in Bunbury and Perth. Since the thinning of these stands commenced in August, 1927, 58,750 cubic ft., or approximately 1,400 tons of logs, have been cut. Thinning also commenced in the young stands of *P. pinaster* planted in 1918—12½ acres were treated.

Mundaring supplied 3,061 cubic feet of thinnings from an eight-year-old *Pinus radiata* stand to a city case mill. The total area thinned at this centre during the year was 13½ acres.

4. SANDALWOOD REFORESTATION.

Seahill sandalwood reserve was surveyed by a licensed surveyor and 25½ miles of six-foot track was cleared around the boundary. An area of 16 acres selected as a sample plot on Seahill was enclosed by a wire netting fence.

Prior to sowing, a plentiful seed supply of good quality was obtained—2 tons were purchased at 6d. per lb., consignments coming from all parts of the district.

Sowing was conducted in January and February at Karramindie (390 acres), Lakeside (11 acres), Coonaana (20 acres), Seahill (20 acres), and Calooli (2½ acres)—443½ acres in all. 4½-5 lbs. of seed to the acre was the standard sowing.

Germination commenced in all places in May, and an excellent germination and growth took place in the lighter, more friable soils at Seahill and Calooli. At Karramindie and Lakeside, however, the germination percentage is much lower, although germination still continues. The soil in these localities is much heavier in texture, and has an admixture of clay which tends to make a hard surface crust when it dries after rain. The germination of seed sown in previous years still continues; in one case a 25 per cent. germination occurred this season from seed sown in 1928.

During June, 1930, it was noted at Karramindie and Seahill that new shoots and leaves of sandalwood and quandong, and seedling sandalwood, were being badly attacked by a grub, the result being defoliation and the subsequent death of the part affected. On examination, the grub proved to be the larva of a native Chrysomelid beetle akin to the ladybirds. The actual species has not yet been determined, but the larvae are being reared to adult stage for identification.

Attacks of this nature appear to be periodic and due to a failure on the part of natural parasites to keep the grubs in check.

This interesting observation may be the means of explaining the hitherto puzzling phenomenon of the widespread occurrence in the sandalwood area of dry-sided and dead-topped trees.

891 points of rain fell at Kalgoorlie during the year, 560 of which were after the commencement of sowing.

Experiments were carried out with a view to preventing the destruction of seedling sandalwood by rabbits. Small plots in open rabbit-infested country were chosen, sandalwood sown, and galvanised iron and wire netting guards 13in. x 6in. placed around the spot.

5. RESEARCH AND INVESTIGATION.

The resignation of the two senior research officers, who are now on the staff of the Forest Products Division of the Commonwealth Council for Scientific and Industrial Research, has greatly restricted the scope of work attempted during the year, although it is now possible to secure considerable assistance in certain of our problems from that institution. Departmental investigations have been practically confined to Termite investigations, Pine growth tests, and the seasonal collection of Jarrah buds for future examination, on all of which problems Mr. W. E. Campion has been engaged.

Termite Investigations.

These investigations were inaugurated by Mr. A. G. Nicholls, of the University of Western Australia, in 1927. Test pieces of heartwood 15in. x 1½in. x 1½in. of Douglas Fir ("Oregon"), stringybark, light and dark Karri, hill-grown and valley-grown Jarrah from Manjimup, and mature, overmature and immature Jarrah from Mundaring, were made up into duplicate sets and buried in the ground at Pinjarra (Fairbridge Farm), Manjimup, Mount Barker, Gnowangerup, Wickepin, Merredin, Kalgoorlie, Mullewa (4 miles east—1 mile west of Ardingly), Wongan Hills, and Northam, in localities where exposure to termite attack was considered inevitable. Two sets were placed in each locality; one is known as the "test set," and the other as the "control set."

Since Mr. Nicholls handed over this investigation to Mr. W. E. Campion in the winter of 1929, the "test sets" have been examined twice, and on the last circuit wandoo test pegs were added to both test and control sets.

A good general collection of termites has been made as far as possible in duplicate. The identification of specimens in the collection has been checked and corrected by Mr. G. F. Hill of the Council of Scientific and Industrial Research.

The total number of termite specimens collected is 293. This comprises 29 fully identified species, several new but at present undescribed species, and a number of specimens whose identity is doubtful. These—added to the species already described in Western Australia—bring the total identified species known to occur here to 43.

From results obtained, it is now possible to define the distribution of certain species with some certainty. From the economic point of view, however, the habitat of specific termites would not appear to be of such importance as the natural habitat of commercial timbers. For example, limited attack of Jarrah heartwood by seven species of termites is recorded at various centres in the Wheat Belt. Four of these species are just as common in the Jarrah Belt as beyond it, but it is possibly significant that they are only recorded as attacking Jarrah outside its natural habitat. The same observations would apply to Karri.

Air Seasoning of Jarrah Flooring.

The final results of an extensive investigation of air seasoning methods and recommendations for improved practice following work carried out during the years 1926 and 1927, under the direction of Mr. S. A. Clarke, B.E., were published as Bulletin 45 of the Department.

Tannin Extract.

Satisfactory schedules for the preparation of commercial extract from Karri bark, Marri kino, Mallet, and an examination of Tuart wood and sawdust having been completed, the Tannin Extract Plant at Crawley was closed down pending negotiations for the establishment of a plant on a commercial scale at Pemberton, which it is proposed should use Karri bark as its principal raw material. This investigation has been run in co-operation with the Forest Products Division of the Council of Scientific and Industrial Research and the University of Western Australia.

Preservative Treatment of Fence Posts.

With the partial exhaustion of supplies of Jam (*Acacia acuminata*) and other of the more durable species in older settled parts of the Wheat Belt, and the extension of wheat growing to country having no durable timber suitable for use as fence posts, the problem of treating less durable timbers with preservatives is becoming a matter of considerable economic importance. The Forest Products Division of the Council of Scientific and Industrial Research undertook to make available the services of their Officer-in-Charge of Preservation Work to supervise an investigation, if the Department found the necessary material. As a result, impregnation methods were first investigated at Pemberton, where immature round Jarrah and Marri and *Pinus radiata* were treated after seasoning, and have been placed in a local fence line with controls. Preservatives used were creosote, sodium fluoride and arsenious oxide, and zinc chloride. The experiment was repeated in the Narrogin district, Mallet being added to the species treated, and the fence line was erected at Wickepin. It was proposed to test certain species such as Salmon Gum

and Gimlet, East of Southern Cross, at the State Farm at Ghooli, but, unfortunately, the posts were not barked when cut to allow six months' seasoning, and, in consequence, a fresh supply had to be obtained and the experiment held over until next summer.

Sandalwood Oil.

As indicated elsewhere in the report, the extraction and export of sandalwood oil has developed into an important industry. Although a satisfactory commercial process has been evolved, there are many technical problems associated with the oil and its manufacture not thoroughly understood. Whether research work can improve the efficiency of manufacturing methods remains to be seen. Professor N. T. M. Wilmore of the Department of Chemistry, University of Western Australia, has taken a great interest in these questions and has given considerable assistance.

With a view to advancing certain lines of inquiry already opened up, arrangements have been made for two chemists attached to the Forest Products Division, C.S.I.R., to devote full time to this work.

Visits from Mr. I. H. Boas, M.Sc., Chief of the Forest Products Division, C.S.I.R., have been very helpful in maintaining contact between the problems of the Department and associated industries and the work of his Division.

Professor J. A. Prescott of the Waite Institute, who is also Chief of the Division of Soil Research, C.S.I.R., visited the State during April and May, 1930, and spent some time in forest districts. His observations proved most helpful, and arrangements have since been made to attach a young professional officer to the Waite Institute for six months' training in both laboratory work in connection with soil analyses and soil classification work in the field.

6.—ARBORICULTURE.

Hamel Nursery distributed 212,441 trees during the season ending 31st August, 1929. Of these 57,643 were sold to the public (an increase of 10% on last year's figures), 2,932 were distributed free to public bodies, charitable institutions, etc. (an increase of 40%) and 151,866 were sent to various departmental plantations and arboreta.

Pinus radiata and *Pinus pinaster* still continue to be the most popular trees with the public, followed by Sugar Gum, Red Flowering Gum, and *Cupressus macrocarpa*. *Cupressus lusitanica*, *Eucalyptus citriodora*, *Acacia decurrens*, *A. dealbata*, *Melia azedarach*, and *Pittosporum undulatum* are also in great demand.

Arboreta established at Collie, Donnybrook, Nannup, Manjimup, Inglehope, Hamel, and Big Brook continue to show splendid growth of many exotics new to the State.

CHAPTER IV.

1. LEGISLATION.

"The Sandalwood Act, 1929," received assent on 5th December, 1929, and continues in force until the 31st December, 1932. An Order in Council under this Act restricting the quantity of sandalwood that may be obtained from all sources during the period from 4th December, 1929, to 31st January, 1931, to 4,750 tons was gazetted on the 13th December, 1929.

Forest Regulations.—Following the introduction of "The Sandalwood Act, 1929," regulations made pursuant to the provision of this Act were published in the *Government Gazette* on 13th December, 1929, governing the issue of licenses for the pulling and removal of sandalwood from private property. Apart from these regulations, the only other amendments of note made during the year related to a revised scale of royalties on poles and piles, and the payment of a fee for the inspection and branding of sandalwood obtained from private property.

2. INDUSTRIAL.

During the year the agreement governing departmental employees was reviewed at the request of the Union, but few alterations were made.

An agreement was also entered into governing the conditions of employment for Overseers.

3. ADMINISTRATION.

The following staff changes took place during the financial year:—

(a) *Professional Division.*

Messrs. D. W. R. Stewart and W. R. Wallace were appointed Assistant Divisional Forest Officers.

Mr. W. G. Chandler having gained his diploma in forestry at the Australian Forestry School, Canberra, is now serving as a Probationer.

Mr. S. A. Clarke, B.E., Forest Utilisation Officer, who had been on loan to the Commonwealth Council for Scientific and Industrial Research, Melbourne, for 12 months, resigned in order to take up a position on the staff of that body.

Mr. C. R. Kent, Officer in Charge of Chemical Investigation, was retired.

Mr. W. E. Champion, Officer in Charge of Botanical Research, resigned.

(b) *Field Staff.*

Head Forester D. McVicar, who had been on the staff of the Department continuously since 13th October, 1904, retired on a pension, after having rendered valuable service in many capacities.

The positions of Head Forester and Chief Timber Inspector were abolished.

One Assistant Forester, "D" Grade, was appointed, and three Assistant Foresters (two "C" Grade and one "D" Grade) and one Forest Guard resigned.

Seven Assistant Foresters (one "C" Grade and six "D" Grade) were retrenched.

(c) *Head Office Staff.*

Four officers were appointed, two were retrenched, and three were transferred to other Departments.

TRAINING OF STAFF.

One nominee to the Australian Forestry School is attending the diploma course at Canberra.

It is my privilege to again place on record the loyal services rendered by officers of all branches, who have shown commendable keenness to work together for the best interests of the Department.

S. L. KESSELL,
Conservator of Forests.

Forests Department,
Perth, 1st September, 1930.

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APPENDIX 1b.

Statement of Forest Improvement and Reforestation Fund for the Year ended 30th June, 1930.

Dr.						Cr.	
30th June, 1930.		£	s. d.	£	s. d.	1st July, 1929.	
						£	s. d.
To Reforestation Operations—						76,646	14 8
" Division No. 1—							
Ludlow Working Circle ...	4,234	18	9				
Boranup " " ...	755	7	9				
Myalup Plantation ...	595	0	9				
Harvey Weir Plantation ...	1,393	8	9				
Top Disposal Operations ...	478	13	9				
				7,457	9 9		
" Division No. 2—							
Mundaring District ...	6,428	2	3				
Karragullen District ...	7,812	9	0				
Gnangara Plantation ...	1,044	1	11				
Collier Plantation ...	740	7	5				
Applecross Plantation ...	1,285	17	1				
General ...	1,253	11	5				
				18,563	19 1		
" Division No. 3—							
Dwellingup District ...	7,349	10	8				
Huntly " " ...	8,660	7	8				
Wuraming " " ...	7,406	14	8				
General ...	1,374	9	0				
				24,791	2 0		
" Division No. 4—							
Collie District ...	4,703	17	1				
Collie, South District ...	3,312	11	2				
Mining Leases Account ...	700	0	0				
General ...	644	8	7				
				9,360	16 10		
" Division No. 5—							
Jarrahwood District ...	4,623	16	4				
Kirup District ...	6,896	17	10				
General ...	697	4	11				
				12,217	19 1		
" Division No. 6—							
Greenbushes Working Circle ...	2,151	18	2				
Big Brook " " ...	3,495	4	5				
Nannup " " ...	3,328	11	9				
Top Disposal Operations ...	6	1	6				
				8,981	15 10		
" Division No. 7—							
Narrogin District ...				8,762	17 11		
" Division No. 8—							
Jarrahdale ...				3,020	6 11		
" Training of Staff ...				842	11 2		
" Research and Investigation ...				1,132	2 6		
" Preparation of Forest Working Plans and Topographical Survey ...				4,647	7 0		
" General Silviculture and Forests Protection ...				815	1 9		
" Salaries and Allowances ...				5,736	8 0		
" General Equipment and Incidentals ...				3,094	10 11		
" Pardelup Farm ...				1,072	10 0		
" Bowelling Experimental Area ...	110	18	9				
" Nannup Experimental Area ...	76	3	4				
				187	2 1		
" Balance carried forward ...				55,023	0 0		
				£165,707	0 10		
						£165,707	0 10

APPENDIX 2a.

Exports of Timber, Tanning Barks, Sandalwood and Essential Oils for the Year ended 30th June, 1930.

Item and Country of Destination.	Quantity.	Value.	Item and Country of Destination.	Quantity.	Value.
<i>Timber, Dressed, N.E.I.—</i>	cubic feet.	£	<i>Staves, Undressed—</i>		£
Commonwealth of Australia	965	302	Commonwealth States ...	...	256
Great Britain	18,792	2,886	Total Timber Exports ...	...	812,112
Ceylon	4,033	547			
British Malaya	6,600	1,030	<i>Sandalwood—</i>	cwt.	
South African Union	1,017	152	British Malaya	1,260	1,716
Germany	133	18	Ceylon	240	340
Netherland East Indies	675	98	Hong Kong	7,492	6,528
Total	32,215	5,033	India	5,754	9,447
			China	3,376	3,566
<i>Timber, Undressed—</i>			Netherlands East Indies	320	436
Commonwealth of Australia	1,769,094	217,679	Japan	412	205
Great Britain	859,656	105,357	Total	18,854	22,228
British Malaya	3,221	396			
Ceylon	1,001,092	120,873	<i>Tanning Barks—</i>		
India	115,850	15,592	Commonwealth of Australia	28,459	16,136
Mauritius	31,860	3,840	Germany	41,567	21,266
New Zealand	901,655	109,732	Netherlands	6,433	3,226
South African Union	1,354,820	166,321	Total	76,459	40,628
Egypt	86,544	10,385			
Canada	2,792	355	<i>Essential Oils—</i>		
Belgium	103,808	12,460	Commonwealth of Australia	...	6,064
Denmark	8,702	1,044	Great Britain ... ..	...	42,693
Germany	36,503	5,397	British Malaya ... ..	...	39
Netherlands	4,981	683	India ... ..	...	289
Netherlands East Indies	25	3	Hong Kong ... ..	...	920
China	7,415	1,018	China ... ..	...	810
Persia	248,100	29,786	Netherlands East Indies ... ..	...	2,680
Africa, Portuguese East	9,463	1,237	Germany ... ..	...	11,956
United States of America	1,947	234	Belgium ... ..	...	980
Total	6,547,528	802,392	France ... ..	...	1,058
			Italy ... ..	...	39
<i>Casks and Shooks—</i>			United States of America ... ..	...	919
*Commonwealth of Australia	...	1,780	Netherlands ... ..	...	9,044
			Philippine Islands ... ..	...	39
<i>Wood Manufactures, N.E.I.—</i>			Total ... ..	...	77,510
*Commonwealth of Australia	...	2,620	Total, all Exports ... ..	...	£952,478
Great Britain ... ..	...	24			
Hong Kong ... ..	...	5			
Italy ... ..	...	2			
Total ... ..	...	£2,651			

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

APPENDIX 2b.

Imports of Timber, Tanning Substances and Essential Oils for the Year ended 30th June, 1930.

Item and Country of Origin.	Quantity.	Value.	Item and Country of Origin.	Quantity.	Value.
	cubic feet.	£			£
<i>Timber, Dressed, N.E.I.—</i>			<i>Barrels, Casks, etc.—</i>		
Commonwealth of Australia	2,215	2,021	Commonwealth of Australia	...	2,256
Great Britain	100	37			
Malaya, British	2	1	Total	...	2,256
Norway	21,742	2,507			
Sweden	44,550	5,580			
United States of America	208	81			
Total	68,817	10,227	<i>Brushmakers' Woodware and Wood Tool Handles—</i>		
<i>Timber, Undressed, N.E.I.—</i>			Commonwealth of Australia	...	1,497
Commonwealth of Australia	86,112	29,564	Great Britain	...	425
British Malaya	467	198	Germany	...	19
Great Britain	75	26	Norway	...	437
New Zealand	812	158	Sweden	...	168
India	58	50	United States of America	...	6,392
Siam	842	583	Total	...	8,938
Canada	36,258	4,810			
Czecho Slovakia	733	121	<i>Clothes Pegs—</i>		
Sweden	1,192	236	Commonwealth of Australia	...	1,139
New Caledonia	399	175	Great Britain	...	10
Japan	3,633	1,415	Sweden	...	17
Philippine Islands	3,016	932	Germany	...	5
United States of America	435,765	65,613	Total	...	1,171
Netherlands East Indies	75	13			
Borneo	168	110	<i>Doors of Wood—</i>	No.	
Total	569,596	104,004	Commonwealth of Australia	1,341	1,334
			Great Britain	1	1
<i>Timber for making Boxes and Doors—</i>			United States of America	483	497
Commonwealth of Australia	...	2,162	Total	1,825	1,832
Great Britain	33	3			
United States of America	1,575	172	<i>Oars and Sculls—</i>		
Malaya, British	13,475	1,122	Commonwealth of Australia	...	40
Germany	108	107	Great Britain	...	28
Netherlands	258	271	Japan	...	36
Norway	29,408	4,032	United States of America	...	260
Sweden	41,443	6,103	Total	...	364
Total	...	13,972			
			<i>Picture and Room Mouldings—</i>		
<i>Architraves and Mouldings—</i>			Commonwealth of Australia	...	763
Great Britain	...	112	Great Britain	...	106
Commonwealth of Australia	...	1,055	Germany	...	49
Germany	...	19	Norway	...	110
France	...	28	United States of America	...	27
Total	...	1,214	Total	...	1,055
<i>Logs not Sawm, and Spars in the rough—</i>			<i>Plywood and Veneers—</i>		
Netherlands East Indies	2,208	124	Commonwealth of Australia	...	13,290
Total	2,208	124	Great Britain	...	292
			Canada	...	542
<i>New Zealand Pine—</i>			France	...	307
New Zealand	26,353	5,480	Germany	...	417
Total	26,353	5,480	Netherlands	...	147
			Sweden	...	47
<i>Spokes, Dressed—</i>	No.		Japan	...	3,438
Commonwealth of Australia	7,401	197	United States of America	...	1,744
United States of America	2,650	87	Norway	...	331
Total	10,051	284	Russia	...	202
			Total	...	20,757

