

1951.

WESTERN AUSTRALIA

REPORT

ON THE OPERATIONS OF

THE FORESTS DEPARTMENT

FOR THE

YEAR ENDED 30th JUNE, 1951

BY

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CONSERVATOR OF FORESTS

PERTH:

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1951

Forests Department,
Perth, 25th September, 1951.

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, 1951.

I have the honour to be,

Sir,

Your obedient servant,

T. N. STOATE,
Conservator of Forests.

Annual Report on the Operations of the Forests Department for the Year ended 30th June, 1951.

INTRODUCTORY.

Sawn timber production for the year under review, 1950-51, showed a sharp increase on that of the previous year. The records for recent years, together with earlier peaks, are as follows :—

Year.	Sawn Timber. Cubic ft.	No. of Mills.	Hewn Timber. Cubic ft.
1913-14 	13,987,632	....	4,254,740
1925-26 	14,522,733	....	6,177,952
1927-28 	13,608,802	....	5,219,313
1937-38 	11,720,652	134	2,573,540
1947-48 	10,451,524	209	7,799
1948-49 	10,478,975	228	4,744
1949-50 	10,805,082	250	1,037
1950-51 	12,571,635	265	1,183

The volume of sawn timber produced this year is therefore the highest since 1928, when effect was given to proposals embodied in the General Working Plan then being drawn up for the regulation of the cut from our forests.

The total of 12,572,818 cubic feet, valued at £4,344,000, produced in 1950-51, was made up of 8,828,722 cubic feet from Crown Lands and 3,744,096 cubic feet from private property. The present cut from private property is, therefore, only slightly less than that of 4,056,417 cubic feet produced in 1937-38.

The total number of sawmills in the State is now 265, and the continued increase in the number of sawmills is a matter for concern as there is already more sawmilling capacity in the State than the Jarrah and Karri forests can support continuously. There are now 61 mills within 25 miles of Perth.

In the past, sawmilling practice in Western Australia was strongly established upon a vigorous export trade in a commodity, Karri and Jarrah timber, of world-wide reputation. This was an important economic factor in a small community here in Western Australia. The Timber Industry was heavily dependent on overseas trade, and a comparatively limited market existed within Western Australia for the small dimension timbers, or scantlings, derivable from the offcuts in sawing export sizes.

An alteration to the pattern of timber production became necessary consequent upon increasingly heavy demands from within the State in the post-war period.

Today only a token export is permitted, to retain important overseas markets in a high quality commodity field.

The needs of South Australia, which is almost entirely deficient in hardwoods, and of the Commonwealth and South Australian Railways, vital links with our own network, have been recognised to a limited extent.

It is of interest that, for the first time in Australia's history, enquiries have had to be made overseas for vital supplies of railway sleepers. The paucity of Australia's timber supplies is slowly becoming apparent.

The loss of hewn timber, which was mostly sleepers, and the emphasis placed in sawmilling upon the need for housing timbers, have brought about a very great reduction in sleeper production long regarded as a feature of the Western Australian timber trade, and upon which the Railway systems of Western Australia, South Australia, and the Commonwealth have been heavily dependent.

Sleepers in Cubic Feet.

Year.	Hewn.	Sawn.	Total.	Western Australian Consumption.
	Cubic ft.	Cubic ft.	Cubic ft.	Cubic ft.
1937-38 	2,573,540	2,041,344	4,614,884	765,600
1950-51 	1,181	1,455,768	1,456,949	688,500

The actual Western Australian consumption in 1937-38 was about 390,000 sleepers, but the average of the immediate pre-war years approximated 450,000. The totals are exclusive of the small volume of sleepers produced on the Eastern Goldfields, where the total amounted to 19,763 cubic feet in the year under review.

Of the total production of 12,571,635 cubic feet, 13.2 per cent. was sent to the Eastern States and 5.8 per cent. overseas, and thus a greater quantity of timber was retained for use within the State than at any other time in her history.

There is not a market in Western Australia for all the Karri produced—2,137,425 cubic feet—and a small overseas export in Karri maintains important markets in mine guides and railway wagon timbers.

An appreciable increase in Karri production can be expected and already this year the output in Karri was considerably greater than last year.

It is of interest that the equivalent of more than all the timber produced on Crown Lands was retained within the State.

The attainment of full production in the new big mills has continued to be disappointingly slow. A shortage of men in the forest, particularly skilled personnel in the bush and mills, has continued to affect both the manning of existing mills and the building of the new mills. To assist the industry, the Forests Department instituted Schools for Fallers. Fifty-six men have been so trained, but no further Schools have been possible, owing to lack of men to enter them. Similarly, a School for sawmill hands was organised, but has had to be postponed owing to lack of suitable applicants.

A number of the big mills now in operation will, when men are available, greatly increase production, and, with three new mills shortly to commence operations, make an important addition to the timber yield in the coming year.



The opening of the Donnelly River sawmill in 1951.

In the past year, 133,233 cubic feet of selected Karri logs, 77,082 cubic feet of logs of imported timbers, and 8,162 cubic feet of pine logs were used for peeling, and nearly eight million square feet of plywood was produced. The demand for pine peeler logs is an increasing one, and the pruning of pine plantations for the production of this high-priced product is being carried on as labour is available.

Jarrah and Karri continued to be the main timbers sawn, but it is of interest that other species, such as Wandoo, Blackbutt, Tuart, Marri, Pine and sundries contributed 6½ per cent. of the total production. The use of Marri showed an increase, while pine from our small plantations contributed 1.4 per cent. of the total cut.

The gross revenue of the Department rose to £393,180 during the year, as compared with £318,940 last year and £300,199 for 1947-48. The net revenue was £250,523, being the highest on record, but the general price rise of all commodities has offset the increased royalties to a large extent.

Minor forest produce included tannin extract from Wandoo timber, tan bark from the Mallets, mining timber, piles and poles, honey and firewood.

Forest works have been severely restricted and, in some centres, held almost at a standstill through lack of men desiring employment in the forests.

The Department was favoured with an unusually mild fire season; only 211 fires were attended by Departmental gangs during the year, and only five attained an area of over 100 acres. Twenty-eight fires on or from private property required attention as against 242 the previous year.

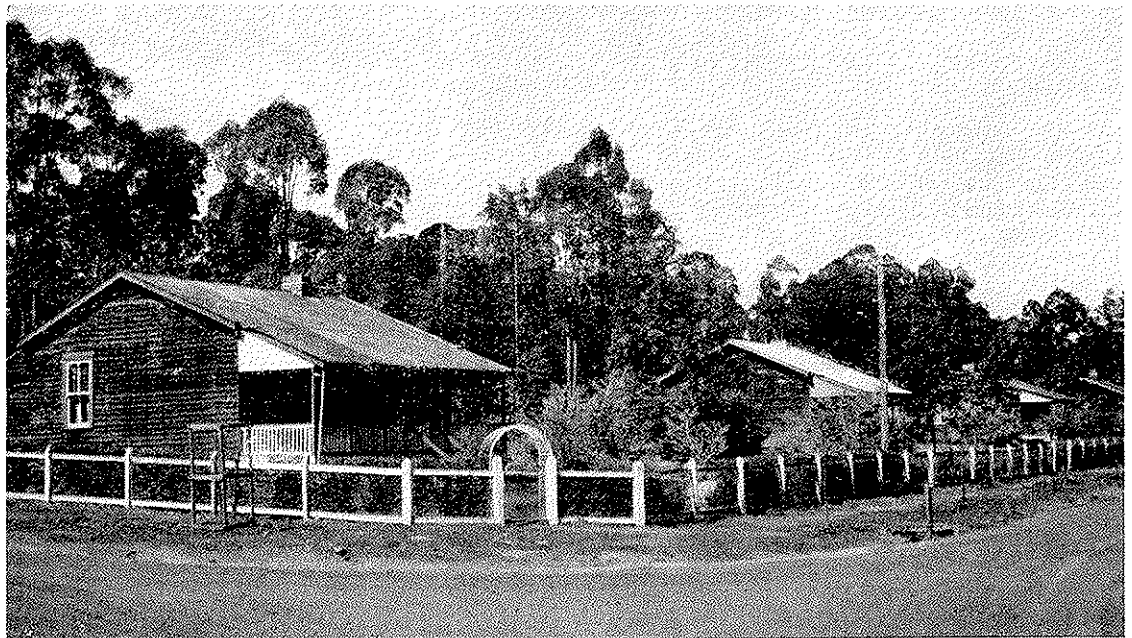
While the network of telephone lines through the forest still provides the main channels of communication for administration and fire control, radio telephone has proved a most valuable supplementary communication system, not only for transmission of messages from the scene of the fire, but also for administration in the forest. Twelve fixed stations and 57 mobile units were in operation with different frequencies for each Divisional Control Group. Fire Weather forecasts are sent out daily over our Radio network from the main Departmental Fire Weather Station at Dwellingup.

A Pine Working Plan for Western Australia received approval of the Governor in Executive Council on 23rd November, 1950. This plan envisages the ultimate development of at least 200,000 acres of pine plantations, if sufficient suitable land can be found for the purpose, with an immediate target of approximately 2,000 acres per annum. In the year under review 470 acres were planted. Some difficulty is being experienced in obtaining sufficient suitable land for this long-term project.

While fundamental research in Forestry is recognised as the function of the Commonwealth Forestry and Timber Bureau, numerous problems arising in field practice are dealt with as expedient investigations by the Research Branch of the Department.

The co-operation of the Bureau has been obtained in equipping the Forest Research Station in the Jarrah forest at Dwellingup. The problems in pine afforestation extend from the nursery to the final crop, and, while in the past emphasis was placed on studies in establishment and nutrition, increasing attention is now being focussed on the origin of the seed, involving tree selection and breeding, and the early life history of the plant. Similar problems exist in the field of reforestation.

The development of all Forest Settlements on planned lines following designs approved by the Town Planning Commissioner has continued. With the object of making these small townships as attractive as possible, attention has been paid to landscaping and particular emphasis is being given to tree planting in this field. A much greater variety of ornamental trees is now being raised in Departmental nurseries. Minor recreational facilities are being provided and electric lighting plants have been approved for the larger groups.



Dwellingup Forest Station.

By command of His Excellency the Governor, a Royal Commission was appointed on the 14th March, 1951—Mr. G. J. Rodger, Director General of the Commonwealth Forestry and Timber Bureau, being appointed. The terms of reference were to inquire into and report upon:—

1. Forest resources and potential including softwood development.
2. Demands on such resources from within and without the State and the extent to which, and the manner in which, such demands should be met.
3. Forest valuation and finance.
4. Forest regulation and administration.
5. Forest utilisation and harvesting of timber crops, including dead timber.
6. Sawmilling and fire prevention and protection.
7. Forest policy, including the granting and conditions of existing and future permits.
8. Forest legislation and regulations.
9. Remedial action in relation to the foregoing.

The Commission commenced the hearing of evidence on the 10th May, 1951.

The administration of the Timber Industry Regulation Act is briefly reported on in an appendix attached hereto.

REVENUE.

The gross revenue of the Department for the year ended 30th June, 1951, was £393,181, as compared with £318,940 the previous year.

Royalties and Rents produced £237,971, which is an increase of £31,534 on last year's figure. There was an increase in revenue from Sandalwood to £49,170, from £42,247 last year.

Of the amount of £106,040 collected under the heading of Departmental, the major items are Sales of Firewood—£56,395, Sales of Pine Timber—£35,170, and Inspection Fees—£2,897.

Goldfields revenue amounted to £9,738 as compared with £10,742 for the previous year.

THE FOREST AREA.

(1) *State Forest*—(*Forests Act*, 1918)—

The area of State Forest as at the 30th June, 1951, was 3,426,450 acres, an increase of 16,044 acres as compared with the acreage for the previous year; 104 acres were excised from State Forest during the year.

(2) *Timber Reserves*—(*Forests Act*, 1918)—

The total area of timber reserves remained at 1,799,658 acres.

SAWMILLING AND HEWING.

The production of sawn timber during the year showed an increase of one and three-quarter million cubic feet as compared with the previous year.

The log intake for the year was 36,104,486 cubic feet and the recovery of sawn and hewn timber was 12,572,818 cubic feet (31,013,809 and 10,806,119 respectively in 1949-50).

The shortage of labour again prevented the large mills from cutting to their maximum capacity. The State Saw Mills at Worsley was totally destroyed by fire on 9th November, 1950, and the Worsley Timber Company's Mill at Chadoora was partially burnt on 15th November, 1950. The Jarrahdale and Jardee mills re-commenced operations during the year, and four large new mills came into production—Northcliffe, Shannon River, Boyup Brook and Greenbushes.



Logging by means of a crawler tractor and Athey Wheel trailer.



A "logging arch" at work in the forests of the Southwest.

Hewn timber totalling 1,183 cubic feet was produced, as compared with 1,037 cubic feet for the previous year.

Departmental plantations yielded 474,211 cubic feet of the 513,713 cubic feet of pine milled during the year.

The intake of Marri (Redgum) was 230,831 cubic feet, as compared with 130,160 cubic feet for the previous year.

The intake of Tuart was 244,668 cubic feet as compared with 64,170 cubic feet for the previous year.

Locally grown peeler logs totalled 141,852 cubic feet, the principal species being Karri (133,233 cubic feet) and Pine (8,162 cubic feet).

The average number of men employed on timber holdings each month for the production of sawn timber (including bush workers and men employed under the mill roof) was 4,047 for the year ended the 31st December, 1950, as compared with the average of 3,859 for the year ended the 31st December, 1949. Twenty-nine new mills were registered during the year, of which eight were on Crown Lands.



Falling trees with a modern power-operated circular saw.

TIMBER INSPECTION.

Sawn and hewn sleepers inspected during the year amounted to 1,331,354 cubic feet, while sawn timber other than sleepers submitted for inspection totalled 179,516 cubic feet.

The number of piles and poles inspected was 1,686 amounting to 50,357 lineal feet.

TIMBER PRODUCTION.

Production of Timber for Year ended 30th June, 1951 (exclusive of Mining Timber, Firewood, Piles and Poles).

	MILL LOGS.			HEWN TIMBER.				GRAND TOTALS.	
	Jarrah.	Karri.	Other.	TOTAL.		Jarrah in Log.	Jarrah in Square.	In Log.	In Square.
				In Log.	Recovery of Sawn Timber.				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crown Lands	Cub. ft. 18,311,222	Cub. ft. 5,813,617	Cub. ft. 1,265,655	Cub. ft. 25,390,494	Cub. ft. 8,828,537	Cub. ft. 925	Cub. ft. 185	Cub. ft. 25,391,419	Cub. ft. 8,828,722
Private Property	9,179,500	472,930	1,055,647	10,708,077	3,743,098	4,990	998	10,713,067	3,744,096
GRAND TOTALS	27,490,722	6,286,547	*2,321,302	36,098,571	12,571,635	5,915	1,183	36,104,486	12,572,818

Figures in columns (1), (2), (3), (4), (6) and (8) are in the round based on full volume measure.

Figures in columns (5), (7) and (9) are the volumes of sawn or hewn timber in the square.

* Comprises—

943,243 cub. ft. Wandoo ; 513,713 cub. ft. Pine ; 296,575 cub. ft. Blackbutt ; 244,668 cub. ft. Tuart ; 230,831 cub. ft. Marri ; 80,746 cub. ft. Sheoak ; 3,775 cub. ft. Yellow Tingle Tingle ; 3,529 cub. ft. Morrell ; 2,886 cub. ft. Bullich ; 750 cub. ft. Cadjuput ; 280 cub. ft. Native Pear ; 216 cub. ft. Banksia ; 90 cub. ft. Red Tingle Tingle.

THE QUANTITY OF SAWN AND HEWN TIMBER PRODUCED FROM CROWN LANDS AND PRIVATE PROPERTY FOR THE PAST TWO YEARS IS SET OUT IN THE FOLLOWING TABLE.

Year.	FROM CROWN LANDS.			FROM PRIVATE PROPERTY.			Total Quantity.	Estimated Vale of Timber Obtained.
	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.		
1949-50	Cub. ft. 6,250,279	Cub. ft. 1,088,435	Cub. ft. 941	Cub. ft. 2,939,723	Cub. ft. 526,645	Cub. ft. 96	Cub. ft. 10,806,119	£ 3,272,517
1950-51	7,845,852	982,685	185	3,270,015	473,083	998	12,572,818	3,426,464

TIMBER PRODUCTION, PLANNING AND DISTRIBUTION.

A broad distribution programme of the estimated quantity of sawn timber produced in the State has been determined from time to time. A drive has been made by the State to obtain more timber for housing to meet an expanded Housing Programme.

In October, 1950, a Co-ordinating Committee consisting of Co-ordinator of Timber Supplies who is the Senior Assistant Conservator of Forests, the Chairman of the State Housing Commission, the Executive Officer of the Associated Sawmillers and a representative of the State Saw Mills, was appointed to advise the State Housing Commission on the desirability or otherwise of issuing permits for the work from the point of view of timber supplies, to suggest alterations in the specifications if by so doing supply would be simplified, and to suggest to the Commonwealth the firms with whom orders should be placed according to their ability to supply.

The activities of the Committee were later extended to embrace timber requirements of the State Government for public works, and, in particular, the distribution amongst the private sawmillers of some orders which State Saw Mills found difficulty in executing.

Seasoned timber continued to be in very short supply in spite of the substantial improvement in output of green sawn timber. Stocks of timber undergoing seasoning have been continually increased during the year.

On a basis of a monthly production towards the end of the year of 22,000 loads of timber and a use of approximately 25% for new housing and 19% for export interstate and overseas, there are approximately 11,000 loads of timber used per month in Western Australia for a variety of other purposes.

The production of sawn sleepers has fallen to a seriously low level through the lowered output at sleeper mills, the undertaking of the main sawmillers to keep cutting only sleepers at general purpose mills as low as possible, and the small number of sleepers produced at the Railway Mill.

Crossarms to meet the requirements of the Post-Master General's Department continued in short supply.

FIREWOOD PRODUCTION.

The estimated total consumption of firewood for the year was 791,809 tons, made up as follows :—

	tons.	tons.
Metropolitan Area		273,750
Goldfields Area—		
Mining	185,037	
Nos. 3 to 8 G.W.S. Pumps	34,462	
Domestic and Other uses	34,487	
		<hr/> 253,986
Nos. 1 and 2 G.W.S. Pumps		21,408
Mill waste used as fuel by sawmillers		144,781
Country Centres		97,884
		<hr/> 791,809

Approximately 68 per cent. of the total consumption was supplied from Crown Lands, as follows :—

Goldfields licenses and permits	253,986
Mill waste used or sold by Sawmills on Crown Land	157,745
Firewood Permits (South-West)	80,281
Miscellaneous Licenses, etc.	4,046

Supplied by Forests Department—

Nos. 1 and 2 G.W.S. Pumps :

	tons.
Petty Contractors and Piecework Cutters	20,846
Ex Bartons	562
	<hr/> 21,408
Industrial concerns	1,134
	<hr/> 22,542
	<hr/> 518,600

The balance of the stocks held by the department were supplied to Industrial Concerns.

Owing to the fact that a large reserve of firewood was built up during the winter months, the position at Nos. 1 and 2 Pumping Stations was very satisfactory this year.

SANDALWOOD.

The quantity of sandalwood exported during the year was 362 tons, as compared with 194 tons for the previous year.

Although the price paid to the sandalwood getters for sandalwood of fair average quality was increased, difficulties were experienced in obtaining supplies and very few men with the necessary bush experience have been attracted to the industry.

Orders were placed for 610 tons of sandalwood logs, and 40 tons of sandalwood pieces for export, 5 tons of sandalwood logs were ordered for oil distillation purposes within the State.

The quantity of sandalwood delivered during the year under orders (including deliveries from orders placed during the previous year) was:—

	Oil Distillation tons.	Export tons.
CROWN LANDS—		
Logwood	66	217
Roots and Butts	72	
Pieces		37
PRIVATE PROPERTY—		
Logwood		2
	<u>138</u>	<u>256</u>

The quantity of sandalwood oil produced by local distillers during the year was 9,000 lbs. and 7,465 lbs. were exported.

FOREST PRODUCE.

Piles and Poles totalling 389,144 lineal feet were obtained from Crown Lands, and records available show a total of 403,063 lineal feet supplied from private property. In addition, an unknown quantity from private property goes into local use, for which this Department has no record.

Tanning materials from Crown Lands totalled 278 tons of Mallet Bark and 9,388 tons of Wandoo for for the production of tannin extract. Private property supplies were estimated at 500 tons of Mallet Bark and 56,582 tons of Wandoo.

Mining timber in the round from Crown Land licenses and permits totalled 12,082 tons. Of this total the Department supplied directly 5,414 cubic feet made up of mallet firing sticks and lagging and wandoo logs. Sawn timber for mining purposes is, of course, supplied in the usual way by timber merchants, and in addition supplies of round timber, totalling 11,292 tons, from private property were recorded. Numerous other items of forest produce including charcoal, blackboy, boronia, bean sticks, stone and sand, are shown in the attached table.

FOREST PRODUCE NOT ELSEWHERE INCLUDED IN PRODUCTION TABLES
OBTAINED DURING YEAR ENDED 30TH JUNE, 1951.

Description of Forest Produce.	South-West Division and Agricultural Areas.		Northern Central and Eastern Goldfields.	Total.
	Crown Lands.	Private Property.*	Crown Lands.	
Mining Timber	2,023	11,292	10,059	23,374 Tons
Sleepers for Goldfields Wood Lines			19,673	19,673 Cub. ft.
Firewood	105,735	1,690	68,949	176,374 Tons
Mill Waste sold as firewood	44,370	53,514		97,884 "
Mining Firewood			185,037	185,037 "
Mill Waste used as fuel by Sawmills	113,375	31,406		144,781 "
Charcoal	294			294 "
Blackboy	14			14 "
Piles and Poles	389,144	403,063		792,207 Lin. ft.
Fencing Posts and Rails	157,246	5,435	41,442	204,123 No.
Mallet Bark	278	500		778 Tons
Wandoo Timber for Tannin Extract	9,388	56,582		65,970 "
Boronia megastigma for distillation purposes	216	28		244 lb.
Bean, etc., Sticks	10,693		2,125	12,818 No.
Stone	206			206 Cub. yds.
Sand	1,233			1,233 "
Boat Knees	100			100 No.

* Complete figures for private property are not available. Only information furnished to the Department has been included.

FOREST OFFENCES.

Sixty-seven forest offences were reported to Head Office during the year.

In six cases, proceedings were taken against the offenders. Fines totalling £85 and costs of £15 2s. were inflicted.

The remaining offenders were either warned or dealt with by charging royalty, forfeiture of deposits, or the confiscation and sale of timber illegally cut.

The amount received by the Department in this way totalled £407.

EXPENDITURE.

Expenditure totalling £128,491 charged against Consolidated Revenue Fund included £58,835 in respect of the General Administration of the Forests Act and Regulations and £2,083 to cover the cost of administering the Timber Industry Regulation Act. Pine Conversion accounted for £24,193, while firewood production and other direct conversion projects involved an expenditure of £43,380.

FORESTS IMPROVEMENT AND REFORESTATION FUND.

	£	s. d.	£	s. d.
Balance, 1st July, 1950—				
General Account	124	2 6		
Motor Vehicle Depreciation Account	822	8 10		
			946	11 4
Three-fifths Net Revenue			150,313	16 5
Treasury Grant			112,000	0 0
Commonwealth Aid Roads			38,113	9 3
Direct Credits			7,006	14 6
Allocation to Motor Vehicle Depreciation Account			5,000	0 0
			<u>£313,380</u>	<u>11 6</u>
<i>Less Expenditure—</i>				
General Account	269,802	10 8		
Purchase of vehicles from Depreciation Account	5,005	1 6		
Commonwealth Aid Roads Grant	38,113	9 3		
			<u>£312,921</u>	<u>1 5</u>
Balance at 30th June, 1951—				
General Account	Dr. 1,525	7 3		
Motor Vehicle Depreciation Account	Cr. 1,984	17 4		
			<u>£459</u>	<u>10 1</u>

APPORTIONMENT OF NET REVENUE OF DEPARTMENT.

	£	s. d.	£	s. d.
Gross Revenue for year 1950-51			393,180	14 6
<i>Less Revenue from Firewood, etc.</i>			57,925	17 6
			<u>335,254</u>	<u>17 0</u>
Consolidated Revenue Fund Expenditure	128,490	19 1		
<i>Less Expenditure on Firewood</i>	43,379	18 9		
			85,111	0 4
<i>Less Timber Industry Regulations, Salaries and Incidentals</i>			2,082	13 7
			83,028	6 9
Salary of Conservator	1,583	9 5		
Audit Fee	120	0 0		
			<u>84,731</u>	<u>16 2</u>
Net Revenue			<u>£250,523</u>	<u>0 10</u>
Three-fifths of Net Revenue, credited to the Fund during the year 1950-51			<u>£150,313</u>	<u>16 5</u>

REFORESTATION.

The total area of Jarrah and Karri on Crown Land and State Forest cut over during the year amounted to 58,418 acres. Of this area, 38,634 acres were treemarked in accordance with our silvicultural practice and working plan control to ensure regeneration and perpetual yield. The balance was cut under other forms of control. This cutting was followed by top disposal work for the protection of the immature growing stock remaining. A total of 20,247 acres received this treatment.

Management and protection is being extended into areas in the far South-West on which new mills are about to operate.

The road and track system upon which management and protection to a large extent depends was increased to a total of 12,711 miles by the addition of 510 miles. Maintenance grading covered 3,345 miles.

ROAD CONSTRUCTION AND MAINTENANCE.

	Division.	Construction Maintenance	
		Miles.	grading Miles.
Mundaring	21	318
Dwellingup	70	840
Collie	27	331
Kirup	137	592
Manjimup	192	385
Narrogin	3	156
Harvey	19	385
Pemberton	39	295
Metropolitan	2	43
		<u>510</u>	<u>3,345</u>

In addition, the Department undertook construction of several special roads for the Main Roads Department, for which Federal Aid Road Grant money was made available.

Housing of married employees in the forest was increased by the building of 38 houses, bringing the total to 247 residences apart from single men's quarters.

AFFORESTATION.

Pine Plantations.

The provision of Loan Funds totalling £29,995 in 1948-49, £113,597 in 1949-50 and £157,088 in the year under review, has made possible a continuation of pine planting. The immediate aim is to plant 2,000 acres per annum rising to 5,000 acres after the organisation is developed, with a total target area of 200,000 acres for the State.

The total area of pine plantations is now 13,578 acres.

During the year under review, 470 acres of pine were established and over 3,000 acres were cleared or part cleared.

A substantial increase in the plant and equipment at all plantations has been made to enable clearing progress to be maintained and the use of New Australians on pruning, clearing and planting has proved satisfactory. Planting machines towed by tractors have proved satisfactory after adjustments to meet local conditions.

Planting recorded by plantations, *i.e.*, for June-September, 1950, was :—

	acres.
Ludlow	5
Gnangara	167
Keenan	3
Myalup	55
Somerville	122
Grimwade	58
Gleneagle	43
Mundaring	17
	<u>470</u>

Pruning for the year is recorded at :—

	acres.
Pimelia	29
Gnangara	36
Collier	40
Somerville	127
Ludlow	52
Grimwade	95
Keenan	152
Boranup	5
	<u>536</u>

No high pruning was carried out.

This work, which had fallen into arrears, is essential to the future of the plywood industry and for the production of high grade pine products.

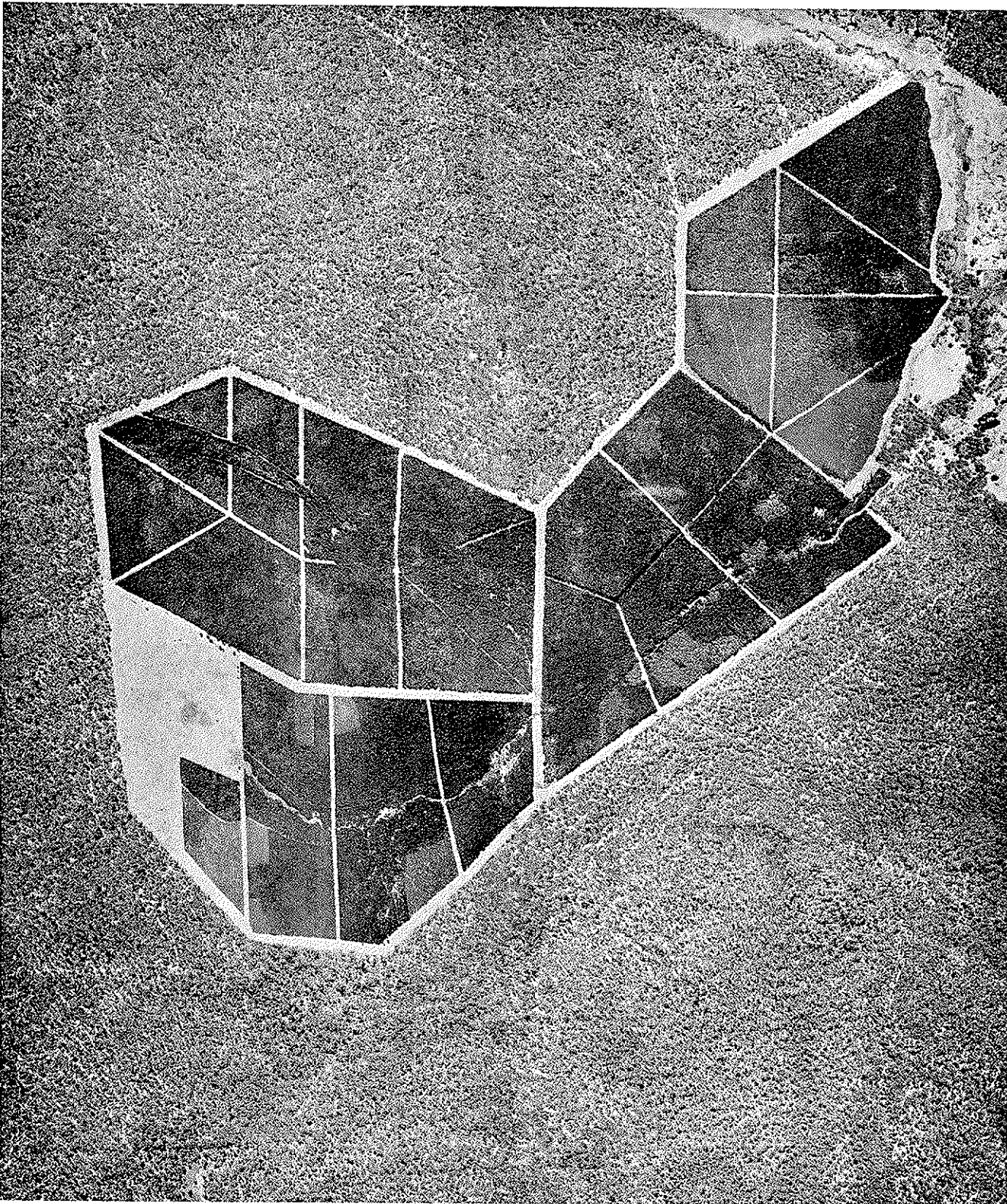
Expenditure by plantations is given in Appendix 10.

Thinning of plantations continued and small pine mills now operate on a permanent basis in Mundaring, Gnangara, Grimwade (East Kirup), Ludlow and Keenan Plantations.

The plantations of the State produced 474,211 cubic feet of logs representing 36 cubic feet per acre over the whole 13,000 acres. This output will, of course, increase annually with the age of the pine.

PRODUCTION OF PINE LOGS.

The total production of logs from pine plantations was 474,211 cubic feet of which 115,709 was milled at Departmental sawmills, and the balance sold as logs, including 7,370 cubic feet of selected logs for peeling for plywood manufacture.



Aerial photograph of Grimwade Plantation The first pines were planted in 1933 and a small sawmill is cutting thinnings today.

Production from the various plantations was as follows :—

	Plantation.	Sold as Logs.	Intake FD Mills.
Collier	20,961	100 (a)
Grimwade	56,478
Gnangara	2,665
Harvey	19,619	.....
Keenan	14,978
Ludlow	27,760
Mundaring	307,120	13,678 (a)
Scaddan	10,802	.....
Somerville	50 (a)
Total	<u>358,502</u>	<u>115,709</u>

(a) Milled at Gnangara.

Mallet areas totalling 52 acres were thinned and 318 acres of new plantation sown. Two hundred and sixty acres for 1951 sowing were cleared.

In the course of clearing, 54 tons of bark was recovered.

Two hundred and eighty-six pounds of mallet seed were collected.

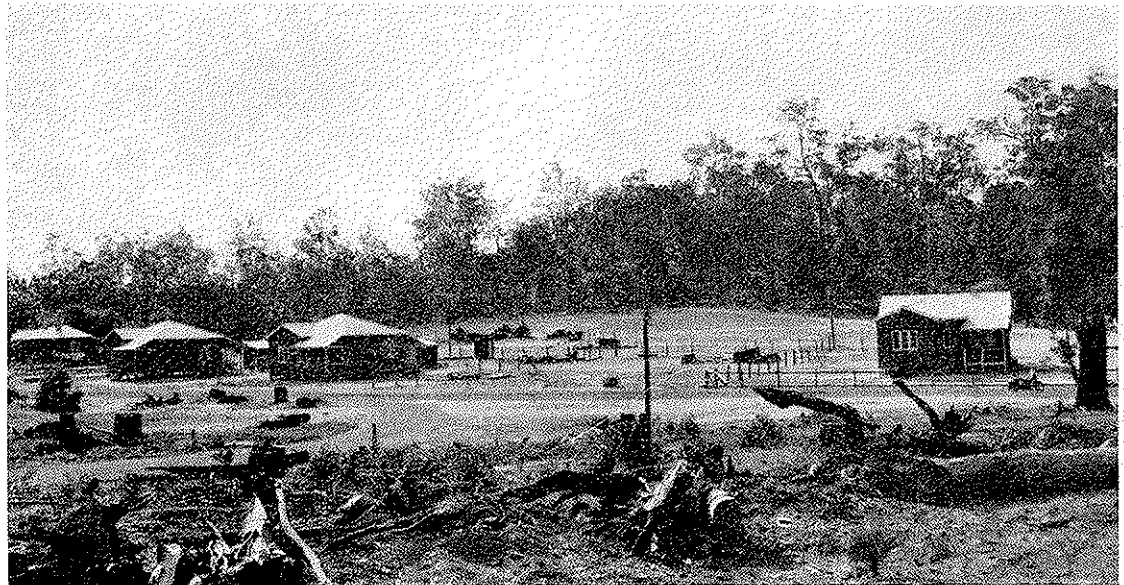
The mallet plantations now total 18,183 acres.

HOUSING.

The housing of officers and employees of the Department at isolated forest settlements, represented a post-war problem due to the fact that building had been suspended during the war years and a skeleton staff only maintained.

In the immediate post-war years, due to shortage of materials and labour, contractors could not be found and it became necessary for the Department to provide materials on the site and build by day labour or by contracts for labour only.

As from July, 1949, loan moneys became available and the leeway in housing commenced to be overtaken. For the year under review, 28 houses were completed and 18 more were under construction. In addition, material was on the site for the commencement of another 25.



Wuraming Forest station in process of building.

The total expenditure from Loan Fund was £36,347.

Detail of expenditure by Divisions being as follows. In most cases the expenditure includes payments against materials on the site in addition to the houses completed and under construction.

Division or District.				Houses Completed.	Houses under Construction.	Expenditure.
						£
Mundaring	....	....	....	656, 657	658	1,507
Dwellingup	....	....	....	651, 670, 737, 738, 660, 661	712, 714, 715, 673, 674	5,982
Collie	....	....	....	<i>Nil</i>	<i>Nil</i>	884
Kirup	....	....	....	675, 676, 679, 762, 763	819, 824, 750, 751	6,800
Manjimup	....	....	....	716, 692, 789	790, 791, 792	6,435
Narrogin	....	....	....	<i>Nil</i>	724	326
Metropolitan	....	....	....	687, 688	<i>Nil</i>	1,720
Harvey	....	....	....	682, 683	756, 713	2,378
Pemberton	....	....	....	664, 665, 666, 667, 729, 734	733	4,808
Busselton	....	....	....	639, 711	759	5,507
Total	....	....	....	28	18	£36,347

FIRE CONTROL.

The Summer under review—1950-1951—was a very mild one.

Only 217 fires were attended by Departmental gangs during the year, which is below average. The causes of these fires were as follows :—

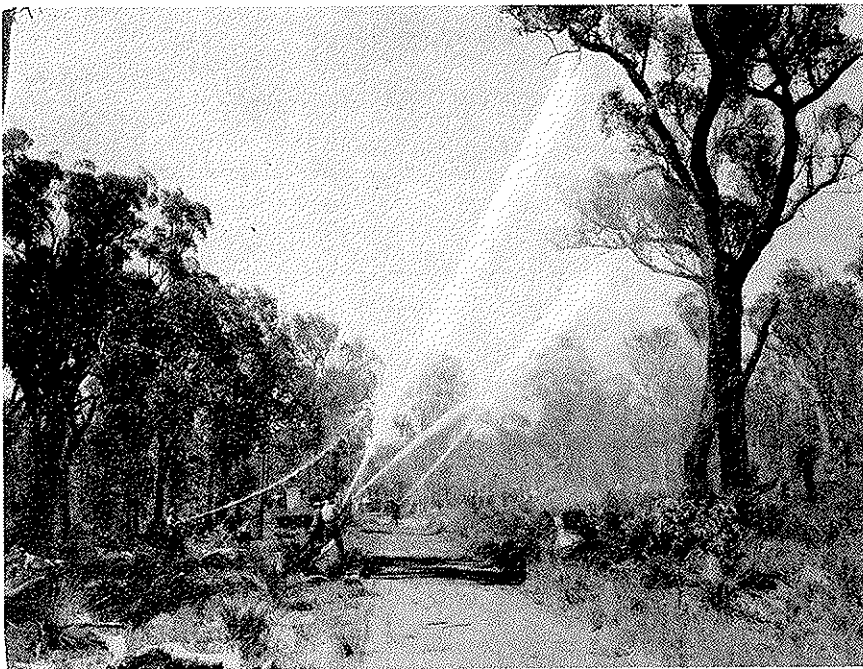
W.A.G.R. Locos.	11
Mill Locos.	27
Escapes from controlled burning	23
Bush workers	19
Bush navvies	1
Hunters and fishers	12
Householders	6
Private property	28
Travellers	16
Lightning	19
Incendiarist	25
Children	6
Mill surroundings	5
Other Government employees	6
Tractors	2
Unknown	11
Total	<u>217</u>

Once again the highest number of fires came from private property, but this year only 28 as against 242 last year.

The number of lightning fires was much greater than usual for less than 3 per cent. of fires have been due to this cause in the past. One storm lit 17 of the fires, but no damage was caused by any of them.



"Gloucester Tree", a Karri tree lookout at Pemberton.



Heavy duty fire fighting trucks in action in the forests.

A total of 4,948 acres of the 1,161,290 acres of A Zone were burnt over, but of this only 2,529 acres or one-fifth of 1 per cent. was treated forest and only a few hundred acres were severely scorched.

A new type of spark arrester was tried for the first time during the latter part of the season, and it appears to show considerable promise, and will be watched closely next year.



A forest fire gang working on a small forest fire to prevent its rapid development into a dangerous fire.

COMMUNICATIONS.

The Radio Branch of the Department has increased its activities to include the provision of trouble lights for fire-fighting trucks, electrical services such as the installation of lighting plants at Forest Settlements and the overhaul of the Departmental telephone system, which is comprised of a single wire earth return and normally supplied with second-hand instruments which have been discarded by the P.M.G. Over 100 telephone instruments have been re-conditioned and a new method of line jointing has been introduced.

During the year, electric light has been installed or partly installed at four centres and an additional plant has been partly installed at Dwellingup.

The radio net-work which is now an integral part of the fire-fighting services has not been extended during the year but much of the equipment has been extensively modified and at present the net-work operates on 12 fixed stations and 57 mobile units.

Each divisional radio centre now operates on different frequencies, thus eliminating the difficulties experienced in previous years.



A forest radio unit operating from the fire fighting gang truck in the Jarrah forest.

WORKING PLANS.

In November, 1950, a Pine Working Plan for Western Australia received approval. This marked an important step in crystallising ideas for plantation development. This plan was made possible by the experimental work done on small areas over the past decades.

Considerable data concerning State Forests generally was compiled for the Royal Commission which will assist in Working Plan revisions.

Assessment of permanently-marked lines in the Jarrah and Karri forests was continued, approximately 200 miles being completed.

The Department was represented at a conference called by the Commonwealth Forestry and Timber Bureau to recommend upon methods to be followed in the Forest Inventory of Australia and New Guinea.

Forest-type maps were prepared covering a number of areas totalling approximately 400,000 acres, which will be of value for the Forest Inventory while Land Inspection work involving timber assessments continued to be carried out to determine the use of areas for agriculture or forestry. 150,000 acres were covered by reports.

The lack of survey control for some of the areas of forest in the far South-West made it necessary for one forestry graduate to be placed on theodolite surveys.

One new one-mile-to-an-inch lithograph and revised editions of four others were published during the year, and preliminary compilation work was carried out on two additional lithographs.

ARBORICULTURE.

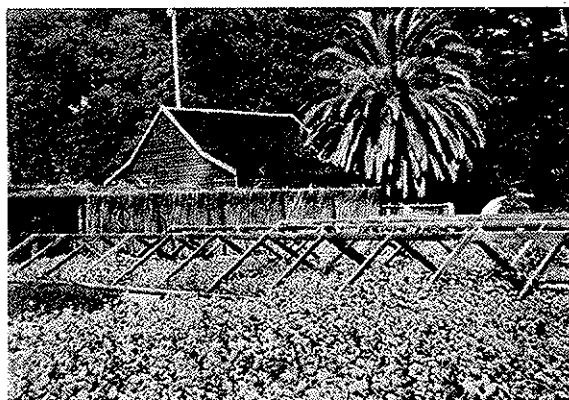
Hamel.

A total of 175,800 trees were distributed from this nursery during the winter of 1950, of which 53,000 were sold to country residents and local authorities, and 122,800 supplied for Departmental use.

The total was the highest on record.

Pinus radiata headed the list of trees sold, with sugar gum the second.

Altogether 87 different species were raised and distributed.



Hamel Nursery where plants are raised for sale to the public.

Inland Areas—Nursery Work.

The nursery continued to expand. Two hundred and thirty-seven orders for trees were filled as against 198 in the previous year.

Trees were despatched as follows :—

Wheat Belt—

Individual farmers	....	....	....	....	....	....	....	....	3,846
Road Boards	....	....	....	....	....	....	....	....	2,375
Arboreta	....	....	....	....	....	....	....	....	853
Schools and P. & C. Associations	....	....	....	....	....	....	....	....	776
Agricultural Research Stations	....	....	....	....	....	....	....	....	33
Sporting bodies	....	....	....	....	....	....	....	....	....
									7,883

Local—

Councils and Road Boards	....	....	....	....	....	....	....	....	682
Gold mines	....	....	....	....	....	....	....	....	553
Householders	....	....	....	....	....	....	....	....	341
Schools and P. & C. Associations	....	....	....	....	....	....	....	....	270
Local Boards	....	....	....	....	....	....	....	....	153
									1,999
Eastern States	....	....	....	....	....	....	....	....	559
South-West	....	....	....	....	....	....	....	....	228

Total 10,669

No new arboreta were established, but provision was made for three more to be established in 1951.

EMPLOYMENT IN FORESTRY.

The number of wage earners directly employed in the forest totals approximately 7,400, made up of:—

Registered fallers, haulers, etc.	813
Firewood cutters, pole getters, etc., on permits	369
Sandalwood getters	15
Goldfields firewood cutters, contractors, and wood-line employees	870
Direct employees of the Forests Department—	
Head office	63
Field staff	95
Wages employees	417
	625
Sawmill employees at June, 1951	4,651
Apiarists estimated	50
	7,393
Total	7,393

RESEARCH.

1. *Pines.*

Nutrition.—Work has been done on the residual effect of phosphate applications on coastal sands, calcium influence on *Pinus pinaster*, and the site change complex in relation to current practice.

The new bulletin on pine nutrition is being printed.

Nursery.—Increased planting programmes have necessitated more extensive nursery work and the main problems involved are fertility, tending technique, and pathogenicity.

Work has been done in damping off complexes using two approaches, firstly the application of fungicides, and secondly, the adjustment of nursery soil conditions to effect biological control of the organisms concerned. The latter work is in progress and will develop in the coming year. The importance of seed collection, pre-treatment and handling generally has been under review and various experimental procedures have been reviewed in the light of overseas and local experience. Rotation of older nurseries has been introduced and various types of crops and fallowing times are under test. In this connection, it is hoped that, in view of items listed below, considerable improvement will be effected.

Sterilisation of soils has been undertaken on a small experimental scale and interesting developments, not fully understood today, have been noted.

The important weeding problem has been attacked from a new angle using controlled aromatic content mineral oil, and results to date are most promising. Hormone type applications have been found toxic to *Pinus* species.

Various nursery nutritional aspects are being investigated in view of the Leiria dormancy characteristics.

Genetical.—Further work has been done on ploidy and pollen storage, and American techniques developed in California will be implemented. The establishment of progeny trials has been effected at Gleneagle using elite trees as seed source, and these trials will be extended.

Grafting work will be increased this year following the technique developed in the last few years. The use of rubber tying strips has been discontinued.

A report covering cytological aspects of *Pinus pinaster* strains has been made.

Utilisation.—Experimental mills have been operating in southern plantations and the production has been channeled into many different avenues. The value of this timber in housing is receiving recognition.

Problems relating to seasoning and storage have received attention.

2. *Hardwoods.*

Work is being done on the nutrition and soils of the Jarrah forest and in this connection the restoration of crowns and elimination of die-back patches are receiving priority.

Physiological studies on fire effect involving nutrient production on the photosynthetic side and the effect of litter on thrift are being made.

The soil flora and fauna are being investigated with a view to better understanding of the nutritional and possible pathogenic factors involved.

Work at the State-Commonwealth Forests Research Laboratory at Dwellingup has continued on a somewhat increased scale and attention has been mainly devoted to Jarrah forest problems listed above. The equipment situation has been improved and the scope of work done has been correspondingly improved.

Utilisation projects under way include pigment studies in Karri, use of dead logs standing and felled, prevention of rot, seasoning and shrinkage studies, and other projects in conjunction with C.S.I.R.O., Division of Forest Products. During the year, Mr. S.A. Clarke visited this State and a panel is being initiated to co-ordinate utilisation aspects in the research field to ensure the most effective programme.

Many smaller items have been covered during the year and, although these cannot be given individual mention, a considerable volume of work has been done including advisory and extension identification services.

Raising of seedling eucalypts and other species has been confined to Hamel and Kalgoorlie nurseries mainly, but experimental work has been done at Mundaring also. It is now proposed, in view of the better climatic conditions, to transfer this work to Gnangara Plantation where it is also proposed to establish an extensive arboretum of native species.

General.

Biometrical work has been carried on for this and other Government Departments, but has been hampered by staff difficulties and the question of improvement of technical and library facilities has received attention. Valuable assistance from the University of W.A., particularly the Departments of Botany and Geology and the Institute of Agriculture is acknowledged, while various branches of the Department of Agriculture have given considerable co-operation. It is hoped this year to obtain considerably more information on Karri bark tannin complexes, this work being undertaken by the Government Chemical Laboratory as a fundamental project. The library of wood anatomy including microscopic specimens has been considerably extended while photographic records are in the process of revision also and now includes the nucleus of a coloured series which will gradually be built on. The collection of fungi towards the implementation of a fungal herbarium for the forests is well under way and will prove very valuable.

The important work of computations for stock-taking and assessment has been unfortunately held up due to staff difficulties so that progress has been less than anticipated, but it is hoped that considerably more work can be done in the coming year.

A new Working Plan of Research has been prepared.

STAFF.

The following staff matters are of interest:—

Public Service Act.—Mr. D. W. R. Stewart resumed duty on the 7th May, 1951, after a post-graduate course at the University of Oxford, where he was successful in obtaining the Diploma in Forestry.

Mr. G. W. M. Nunn was appointed Management Officer in December, 1950.

Mr. A. B. Hatch was appointed Assistant Divisional Forest Officer on 8th May, 1951.

Mr. T. W. Carmody was appointed Clerk-in-Charge, Forest Accounts, on 18th September, 1950.

Forests Act.—Mr. A. R. Kelly promoted to District Forester (Class 5) on 1st July, 1950.

Mr. T. Mavric promoted to Forester (Class 4) on 1st October, 1950.

Mr. N. D. Johnson appointed Mill Examiner on 7th November, 1950, to replace Mr. N. E. Hales who retired on the 31st August, 1950.

Two Forest Assistants (Class 1), eight Assistant Foresters (Class 2), and one Mechanical Instructor were appointed during the year.

Mr. R. S. Meldrum, Forester (Class 4) resigned, and Mr. J. Heatley, Assistant Forester, retired.

Officers of the Field Staff, General Division, employed under the Forests Act were reclassified as from the 18th December, 1950, the general basis being similar to that adopted by the Public Service Commissioner in his reclassification of officers under the Public Service Act.

Other.—Mr. W. A. J. McDonald was successful in an election conducted for the appointment of a Workman's Inspector under the Timber Industry Regulation Act and commenced duty on the 9th April, 1951.

I desire to place on record appreciation of the worthy co-operation and loyal support of all members of both field and office staffs during the year.

T. N. STOATE,
Conservator of Forests.

Perth. 25th September, 1951.

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APPENDIX 1A.

CONSOLIDATED REVENUE FUND.

Consolidated Statement of Revenue and Expenditure for the year ended 30th June, 1951.

DR.					CR.
	£	s. d.	£	s. d.	
To Log Royalty	192,501	4 7	By Salaries	50,139	7 9
„ Sleeper Royalty	14,659	7 1	„ Incidentals	9,992	6 4
„ Hewn Timber Royalty	12	17 3	„ Timber Industry Regulations (Incidentals)	786	8 8
„ Sawn Timber Royalty	3,774	0 8	„ Pine Conversion	24,192	17 7
„ Miscellaneous Royalties	15,856	15 0	„ Direct Conversion	43,379	18 9
„ Goldfields Revenue	9,737	15 0			
„ Rent	1,428	14 4	Total C.R.F. Expenditure	128,490	19 1
„ Sandalwood Revenue	49,170	8 6	„ Excess of Revenue over Expenditure	264,689	15 5
„ Inspection Fees	2,896	11 2			
„ Miscellaneous Sales	6,342	14 2			
„ Sales Pine Logs	19,260	11 10			
„ Sales of Mill Timber	18,335	18 0			
„ Sales of Firewood	56,394	19 10			
„ Miscellaneous Receipts	2,808	17 1			
	£393,180	14 6		£393,180	14 6

APPENDIX 1B.

Statement of Reforestation Fund Expenditure for the Year ended 30th June, 1951.

CR.					DR.	
	£	s. d.	£	s. d.	£	s. d.
To Division 1—					By Forests Improvement and Reforestation	
Administration	925	13 0			Fund—General Account	269,802 10 8
Busselton	57	10 5			„ Forest Improvement and Reforestation	
			983	3 5	Fund—Motor Vehicle Depreciation Ac-	
„ Division 2—					count	5,005 1 6
Administration	668	18 10			„ Commonwealth Aid Roads Grant	38,113 9 3
Mundaring	14,150	2 0	14,819	0 10		
„ Division 3—						
Administration	3,890	18 10				
Dwellingup	58,642	6 4				
Research Station-Dwel-						
lingup	1,940	14 3	64,473	19 5		
„ Division 4—						
Administration	2,504	5 0				
Collie	22,697	18 11	25,202	3 11		
„ Division 5—						
Administration	1,931	18 10				
Kirup	39,049	19 6	40,981	18 4		
„ Division 6—						
Administration	3,240	18 1				
Manjimup	39,129	8 5				
Denmark	1,079	13 3	43,449	19 9		
„ Division 10—						
Administration	1,761	4 9				
Harvey	23,204	6 4	24,965	11 1		
„ Division 11—						
Administration	3,551	8 7				
Pemberton	47,283	17 11	50,835	6 6		
Total Divisional Expenditure	£265,711	3 3				
To Training of Staff		662 14 5				
„ Research and Investigation		3,455 4 2				
„ Preparation of Working Plans, etc.		5,409 13 3				
„ Salaries and Allowances		10,641 9 8				
„ General Equipment and Incidentals		8,087 5 7				
„ General Silviculture, Arboriculture, etc.		86 0 0				
„ Motor Vehicle Depreciation		5,000 0 0				
„ Radio		3,698 17 9				
„ Fire Equipment		2,479 13 4				
„ Purchase of Land		1,600 14 0				
„ Pay Roll Tax		879 6 10				
„ Purchase of vehicles from Depreciation						
Fund		5,005 1 6				
„ Cash Orders Unallocated		203 17 8				
	£312,921	1 5			£312,921	1 5

APPENDIX 1E.

FIREWOOD PRODUCTION AND CONVERSION PROJECTS, 1950-51.

Item.	Mundaring Nos. 1 and 2 Pumps.		Dwellingup.		Harvey.		Ludlow.		Mundaring.		Head Office.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
53. Buildings	15	6 6										
56. Woodcutting Wages—Daywork												
57. Woodcutting Wages—Piecework	19,603	9 7							88	7 0		
58. Purchases—Petty Contractors	1,114	1 9							5	19 6		
59. Carting—Wages			49	3 5					561	1 10		
60. Carting—Contract	11,939	12 10	162	3 9								
61. Railway Freights			482	18 8					3	11 10		
62. Leave Payments	1,668	0 5					75	16 11				
63. Workers' Compensation Premiums	675	10 11	1	3 3	8	7	43	10 9	3	7		
64. Road Construction—Access Roads	2	18 8										
65. Road Maintenance—Access Roads	112	18 2										
68. Tools and Equipment—Purchases	77	11 1										
71. Controlled Burning	3	15 2										
72. Supervision and Clerks	91	2 6										
74. Upkeep Motor Vehicles	547	12 10	50	7 2			23	7 10				
75. Camp Maintenance	35	10 10										
77. Consumable Stores	14	9										
78. Freights and Cartage—Sundry	83	9 5										
79. Fares and Transport	63	3 9										
81. Camp Sanitation	3	9 2										
82. Pay Roll Tax	572	16 11	19	5	7	2	35	15 9	2	11		
83. Special Services	1,128	1 7										
85. Carinyah Road (Federal Aid Road)	1,690	9 7					11	12 6				
91. Canteen Stores											1,258	14 6
93. Assistance to Sawmills—Falling, etc.							258	8 2				
99. Miscellaneous Jobs			208	10 3	14	6 7	1,440	0 2				
Less Recoup—Assistance to Sawmills							1,888	12 1				
							166	8 3				
Cash Order Account	89,429	16 5	955	5 11	15	2 4	1,722	3 10	659	6 8	1,258	14 6
	Cr. 407	14 1									Cr. 252	16 10
	£39,022	2 4	£955	5 11	£15	2 4	£1,722	3 10	£659	6 8	£1,005	17 8

Total Expenditure to No. 1 Account ... 39,022 2 4
 Total Expenditure to No. 2 Account ... 4,357 16 5

£43,379 18 9

APPENDIX 2A.

WESTERN AUSTRALIA.

* Exports of Timber, Tanning Substances and Essential Oils—Year ended 30th June, 1951.

Item and Country of Destination.	Quantity.	Value. £	Item and Country of Destination.	Quantity.	Value. £
<i>Wicker, Bamboo and Cane and All Manufactures, of N.E.I.:</i>					
Commonwealth States:		£			
Victoria	18	18			
TIMBER.			TIMBER—continued.		
<i>Railway Sleepers—Heaven or Sawn</i>			<i>Undressed, N.E.I.—Boards and Planks, Sawn, Less than 2 in. in Thickness—Hardwood.</i>	cub. ft.	
Commonwealth States:	cub. ft.	£	Commonwealth States:	cub. ft.	£
New South Wales	5,944	2,034	New South Wales	423	184
Victoria	16,808	5,838	Victoria	42,070	12,379
South Australia	458,602	153,360	South Australia	42,213	12,367
			Northern Territory	131	31
	481,354	161,232	United Kingdom	84,837	24,961
United Kingdom	17,149	9,234	Christmas Island (Indian Ocean)	9,773	5,752
Ceylon	28,871	14,481	Belgium	1,488	703
South Africa	116,739	60,461	Iraq	2,394	1,349
Persia (Iran)	16,348	8,358		3,023	1,775
	660,461	253,766	<i>Plywood—Veneered or Otherwise—</i>		
<i>Palings—</i>			Commonwealth States:	sq. ft.	£
Commonwealth States:	No.	£	New South Wales	15,570	1,012
Victoria	230	9	Victoria	1,248	114
South Australia	3,746	75	South Australia	4,725	500
	3,976	84	Northern Territory	450	7
<i>Sandalwood—</i>			United Kingdom	21,993	1,633
New Guinea	50	595		250	25
Ceylon	360	4,284		22,243	1,658
Hong Kong	1,460	17,938	<i>Staves—Undressed, Dressed or Partly Dressed—</i>		
Malaya, Federation of	2,850	32,503	Commonwealth States:	No.	£
Singapore	1,630	19,259	New South Wales	113,818	12,299
Burma	517	6,069	Victoria	16,780	2,447
Cuba	1	140	Queensland	16,950	2,515
Japan	16	199	South Australia	9,177	1,302
	6,884	80,987		156,725	18,563
<i>Undressed, N.E.I.—Beams, Baulks, Joists and Other Sawn Timber, N.E.I. (Except Boards and Planks less than 2 in. in Thickness)—Hardwood</i>			<i>Timber, Cut to Size for Making Boxes—</i>		
Commonwealth States:	cub. ft.	£	Commonwealth States:	cub. ft.	£
New South Wales	13,785	5,063	New South Wales	1,913	1,217
Victoria	272,969	90,778	Northern Territory	102	50
South Australia	741,902	232,130		2,015	1,267
Northern Territory	3,374	986	<i>Timber—Tongued or Grooved, or Tongued and Grooved:</i>		
	1,032,033	328,957	<i>Weatherboards—</i>		
United Kingdom	241,559	131,058	Commonwealth States:	cub. ft.	£
Mauritius and Dependencies	44,890	19,648	Victoria	67	44
New Zealand	18,559	7,676	South Australia	193	66
South Africa, Union of	212,781	99,267	Christmas Island (Indian Ocean)	260	110
Belgium	7,226	4,535		2,766	1,959
Iraq	12,138	5,018		3,026	2,069
Persia (Iran)	6,159	3,568	<i>Timber—Bent or Cut into Shape, Dressed or Partly Dressed N.E.I.—</i>		
	1,575,345	599,727	Commonwealth States:	£	
			New South Wales	6,119	
			South Australia	539	
					6,658

APPENDIX 2A—continued.

WESTERN AUSTRALIA.

* Exports of Timber, Tanning Substances and Essential Oils—Year ended 30th June, 1951.

Item and Country of Destination.	Quantity.	Value.	Item and Country of Destination.	Quantity.	Value.
TIMBER—continued.			ESSENTIAL OILS—continued.		
<i>Timber—Dressed or Moulded, N.B.I.</i>	cub. ft.	£	<i>Orange—</i>	lbs.	£
Commonwealth States :			Commonwealth States :	lb.	£
South Australia	109	128	New South Wales	106	87
United Kingdom	21	25	Victoria	17	14
	130	153		123	101
TOTAL TIMBER EXPORTS		999,472	<i>Peppermint—</i>		
WOOD MANUFACTURES.			Commonwealth States :	lb.	£
<i>Casks and Vats, Empty—</i>	No.	£	New South Wales	11,107	25,438
Commonwealth States :			Victoria	8,949	22,037
New South Wales	2,647	17,114	Queensland	56	154
Victoria	689	4,456	South Australia	28	67
South Australia	90	462		20,140	47,696
	3,426	22,032	<i>Sandalwood—</i>		
<i>Articles of Wood (Except Furniture), N.B.I.—</i>			Commonwealth States :	lb.	£
Commonwealth States :			New South Wales	3,095	8,171
New South Wales		483	Victoria	656	1,205
Victoria		140	South Australia	63	162
Queensland		1		3,814	9,538
South Australia		72	United Kingdom	1,568	4,200
Tasmania		25	Canada	212	530
Northern Territory		240	Hong Kong	300	768
		961	Malaya, Federation of	28	70
Christmas Island (Indian Ocean)		133	New Zealand	15	20
Malaya, Federation of		18	Singapore	425	1,088
		1,112	South Africa, Union of	28	70
<i>Furniture—</i>			Brazil	875	2,187
Commonwealth States :			Siam (Thailand)	200	512
Victoria		171		7,465	18,983
South Australia		324	<i>Essential Oils—Other—</i>		
Northern Territory		746	Commonwealth States :	lb.	£
		1,241	New South Wales	23,047	23,832
United Kingdom		15	Victoria	3,429	3,410
Christmas Island (Indian Ocean)		661	Queensland	28	30
Singapore		6	South Australia	61	99
Yugoslavia		34		26,565	27,371
		1,957	India, Republic of	100	344
TOTAL WOOD MANUFACTURES		25,101	New Zealand	196	506
Total Wicker, Timber, and Wood			Singapore	320	320
Manufactures		1,024,591	South Africa, Union of	3,196	4,746
			Burma	54	185
			Indonesia	300	300
				30,731	33,772
ESSENTIAL OILS.			TOTAL ESSENTIAL OILS		125,833
<i>Citronella—</i>	lb.		TANNING SUBSTANCES.		
Commonwealth States :			<i>Tanning Bark—</i>	ewt.	£
New South Wales	1,102	2,794	Commonwealth States :	ewt.	£
<i>Eucalyptus—</i>	lb.	£	New South Wales	2,193	2,743
Commonwealth States :			Victoria	9,504	11,755
New South Wales	64,862	10,211	Queensland	1,528	2,063
Victoria	20,726	2,724		13,225	16,561
	85,588	12,935	Ceylon	19	20
United Kingdom	5,280	1,580		13,244	16,581
Uganda Protectorate	224	84	<i>Tanning Extracts—</i> (Information not available for		
Singapore	410	175	Publication).		
South Africa, Union of	6,820	2,566			
	98,322	17,340	TOTAL TANNING SUBSTANCES—		
<i>Lemon—</i>	lb.	£	(Excluding Tanning Extract)		16,581
Commonwealth States :			TOTAL VALUE OF EXPORTS SHOWN ON THIS		
New South Wales	724	1,137	THIS RETURN		1,167,005
Victoria	3,635	3,883			
Queensland	5	6			
South Australia	48	121			
	4,412	5,147			

* Exports to Commonwealth States are Western Australian Origin, and Oversea Exports are Australian Origin.

APPENDIX 2B.

WESTERN AUSTRALIA.

Imports of Timber, Tanning Substances and Essential Oils—Year ended 30th June, 1951.

Item and Country of Origin.	Quantity.	Value.	Item and Country of Origin.	Quantity.	Value.
<i>Wicker, Bamboo and Cane and All Manufactures of N.E.I.—</i>		£		sq. ft.	£
Commonwealth States :			TIMBER—continued.		
New South Wales		356	<i>Plywood, Veneered or Otherwise—</i>		
Victoria		93	Commonwealth States :	sq. ft.	£
South Australia		37	New South Wales	123,548	6,645
United Kingdom		486	Victoria	45,539	2,415
Borneo (British)		5	Queensland	1,057,912	35,380
Hong Kong		204	South Australia	30,694	835
India		3,424	United Kingdom	1,257,693	45,275
Malaya, Federation of		115	Japan	1,329	95
Singapore		11,478		25,200	612
Jamaica and Dependencies		31		1,284,222	45,982
China		1	<i>Laths for Blinds and Laths, N.E.I.—</i>		
Italy		1,750	Commonwealth States :		
Indonesia		1	New South Wales		22
		3,020			
		20,515	<i>Picture Frame Mouldings—</i>		
TIMBER.			Commonwealth States :	£	
<i>Logs not Sawn (including merely Hewn or Squared with the axe)—Softwood and Hardwood—</i>	cub. ft.		New South Wales	669	
Borneo (British)	74,211	20,317	Victoria	57	726
<i>Hickory, Undressed—</i>			<i>Architraves, Skirtings and Room Mouldings—</i>		
United States of America	970	1,815	Commonwealth States :	£	
<i>Undressed, N.E.I.—Softwood Beams, Baulks, Joists and Other Sawn Timber—except Boards and Planks less than 2 inches in thickness—</i>			New South Wales	612	
Commonwealth States :	cub. ft.	£	Victoria	1,249	
Victoria	261	474	Queensland	5,511	7,372
Queensland	2,254	1,608	<i>Timber Cut to Size for Making Boxes—</i>		
South Australia	10,706	8,615	Commonwealth States :	cub. ft.	
Tasmania	361	143	Victoria	158	77
	13,612	10,840	Malaya, Federation of	2,606	1,056
Canada	6,316	6,637	Norway	11,254	6,009
Borneo (British)	1,662	871	Sweden	74,460	31,426
Malaya, Federation of	1,720	1,120		88,478	38,568
Brazil	15,021	9,258	<i>Timber, Tongued or Grooved or Tongued and Grooved—</i>		
Sweden	10,183	5,592	Norway	18,307	9,074
United States of America	679	1,352	Sweden	88,507	47,812
	49,193	35,670		106,814	56,886
<i>Undressed, N.E.I.—Hardwood Beams, Baulks, Joists and Other Sawn Timber—except Boards and Planks, less than 2 inches in thickness—</i>			<i>Timber, Bent or Cut into Shape, Dressed or Partly Dressed, N.E.I.—</i>		
Commonwealth States :	cub. ft.	£	Commonwealth States :		
New South Wales	140	169	New South Wales		715
Queensland	3,743	2,444	France		5
South Australia	829	302			720
Tasmania	3,685	1,952	<i>Timber, Dressed or Moulded, N.E.I.—</i>		
	8,397	4,957	Norway	506	266
Borneo (British)	1,074	513			
Malaya (Federation of)	29,098	17,937	Total, Timber		349,551
United States of America	85	44			
	38,654	23,451	WOOD MANUFACTURES.		
<i>Undressed, N.E.I.—Softwood Boards and Planks less than 2 inches in thickness—</i>			<i>Brushmakers' Woodware and Turnery, except Broom Stocks—</i>		
Commonwealth States :	cub. ft.	£	Commonwealth States :	£	
Victoria	460	659	New South Wales	1,620	
Queensland	16,332	11,842	Victoria	933	
South Australia	3,084	3,760	Queensland	593	
	19,876	16,261	South Australia	832	
Canada	383	597	Tasmania	291	4,278
Borneo (British)	7,698	4,001	<i>Casks and Vats—</i>		
Malaya, Federation of	11,223	7,026	Commonwealth States :	No.	£
Brazil	34,855	21,742	New South Wales	221	731
Sweden	4,076	1,669	Victoria	581	3,286
United States of America	607	1,019	Queensland	73	539
	78,718	52,315	South Australia	2,770	14,904
<i>Undressed, N.E.I.—Hardwood Boards and Planks less than 2 inches in thickness—</i>			Northern Territory	5	18
Commonwealth States :	cub. ft.	£	United Kingdom		
New South Wales	588	479	*Commonwealth of Australia		
Queensland	5,893	4,008		3,650	19,478
Tasmania	19,024	9,861		100	150
	25,555	14,348		496	1,659
Borneo (British)	9,039	4,017		4,246	21,287
Malaya, Federation of	27,397	17,256	<i>Clothes Pegs—</i>		
	61,991	35,621	Commonwealth States :	Gross.	£
<i>Undressed Timber, not elsewhere specified or included—</i>			New South Wales	4,101	1,393
United Kingdom		11	Victoria	34,873	7,323
Malaya, Federation of		265	South Australia	432	132
		276	Tasmania	25,953	5,756
<i>Veneers—</i>			United Kingdom		
Commonwealth States :	sq. ft.	£	Czechoslovakia		
New South Wales	460,904	18,493	Denmark		
Victoria	62,850	3,085	Sweden		
Queensland	667,486	6,484		65,359	14,604
South Australia	770	52		4,800	66
	1,192,010	28,114		1,800	183
United Kingdom	50,100	413		2,475	383
France	23,097	562		8,075	1,252
Sweden	10,236	455	<i>Doors of Wood, including Fly Doors—</i>		
	1,275,443	29,544	Commonwealth States :	No.	£
			Victoria	264	663
			Queensland	3,160	5,777
			South Australia	307	941
				3,671	7,381

* Produce of Australia previously exported, now returned to this State.

APPENDIX 2B—continued.

WESTERN AUSTRALIA.

Imports of Timber, Tanning Substances and Essential Oils—Year ended 30th June, 1951.

Item and Country of Origin.	Quantity.	Value.	Item and Country of Origin.	Quantity.	Value.
WOOD MANUFACTURES—continued.			WOOD MANUFACTURES—continued.		
<i>Incubators, Foster Mothers and Brooders—</i>			<i>Wood Manufacturers, N.E.I.—</i>		
Commonwealth States:	No.	£	Commonwealth States:	£	
New South Wales	220	4,907	New South Wales	17,605	
Victoria	3	77	Victoria	33,002	
			Queensland	1,287	
	223	4,984	South Australia	11,935	
			Tasmania	235	
<i>Lasts and Trees—</i>					64,046
Commonwealth States:	doz.	£	United Kingdom		3,204
Victoria	103	346	Canada		23
United Kingdom	1	3	Ceylon		7
Italy	3	13	Hong Kong		91
	107	362	India		2
<i>Oars and Sculls—</i>					53
Commonwealth States:	doz.	£	Pakistan		7
New South Wales	115	1,526	Singapore		7
Queensland	5	32	*Commonwealth of Australia		116
	120	1,558	Czechoslovakia		52
<i>Tool Handles—</i>					6
Commonwealth States:		£	France		124
New South Wales		20,142	Germany—West Zone		120
Victoria		3,700	Italy		14
Queensland		619	Japan		81
South Australia		1,068	Netherlands		3
Tasmania		2,035	Indonesia		13,467
			Soviet Union—Baltic and Northern Ports		16
United Kingdom			Sweden		5
Sweden			Switzerland		49
United States of America			United States of America		81,504
		27,564			269,993
		9,326			640,059
		11			
		400			
		37,301			
<i>Woodware for Vehicles—Shafts, Poles and Bars—</i>					
Commonwealth States:					
New South Wales					
		393			
<i>Woodware for Vehicles—Spokes, Rims, Felloes, and Hubs—Dressed or Undressed—</i>					
Commonwealth States:					
New South Wales					
		1,527			
<i>Wood Wool—</i>					
Commonwealth States:	cwt.	£			
New South Wales	50	60			
Victoria	3	11			
	53	71			
Norway	200	268			
Sweden	3	3			
	256	342			
<i>Furniture—</i>					
Commonwealth States:		£			
New South Wales		10,613			
Victoria		26,907			
Queensland		160			
South Australia		33,329			
		70,949			
United Kingdom		7,336			
Christmas Island (Indian Ocean)		5			
Hong Kong		299			
India		10			
Malaya, Federation of		141			
Singapore		781			
South Africa, Union of		9			
*Commonwealth of Australia		2			
Brazil		2			
China		1,146			
Czechoslovakia		588			
Denmark		159			
Finland		164			
Germany—West Zone		45			
Hungary		89			
Italy		172			
Japan		33			
Netherlands		133			
Indonesia		1			
Sweden		10,386			
Switzerland		4			
United States of America		134			
		92,588			
<i>Essential Oils, Natural, Non-Spirituous—</i>					
Commonwealth States:		£			
New South Wales		80,744			
Victoria		6,934			
South Australia		3,922			
					91,600
United Kingdom					290
Ceylon					2,715
Zanzibar and Pemba					28,752
India					1,374
Bahamas					2
Jamaica and Dependencies					3
Seychelles and Dependencies					12,141
China					551
France					836
Guiana (French)					744
Madagascar					76
Reunion Island					83
Italy					10
Indonesia					11,315
Spain					347
United States of America					10,609
					161,358
<i>Tanning Bark—Wattle Bark—</i>					
South Africa, Union of	500	754			
<i>Tanning Extracts (Natural Origin)—</i>					
Commonwealth States:					
New South Wales	45	231			
South Africa, Union of	7,776	20,162			
	7,821	20,393			
Total Value of Imports shown on this Return					822,564

*Produce of Australia, previously exported, now returned to this State.

APPENDIX 2C.

SUMMARY OF EXPORTS OF FOREST PRODUCE SINCE 1836.

Year.	Timber.		Sandal-wood.	Year.	Timber.		Wood Manu- factures.	Sandal-wood.	Tanning Bark.	Essential Oils.
	Cub. ft.	Value.	Value.		Cub. ft.	Value.	Value.	Value.	Value.	Value.
1836 ^a	10,000	£ 2,500	£	1891	1,273,950	£ 89,179	£	£	£	£
1837	.....	.....	.....	1892	1,082,656	78,419	.....	37,600	.....	.....
1838	.....	.....	.....	1893	512,950	33,888	.....	42,870	.....	.....
1839	.....	.....	.....	1894	1,063,700	74,804	.....	32,160	.....	.....
1840	.....	.....	.....	1895	1,255,250	88,146	.....	23,420	.....	.....
1841	.....	.....	.....	1896	1,545,600	116,420	.....	30,863	.....	.....
1842	.....	.....	.....	1897	2,393,300	192,451	.....	65,800	.....	.....
1843	.....	.....	.....	1898	4,086,150	326,195	.....	49,480	.....	.....
1844	0	163	.....	1899	6,913,550	553,198	.....	31,812	.....	.....
1845	.....	.....	40	1900	5,725,400	458,461	.....	29,719	.....	.....
1846	2,550	255	320	1901	7,150,600	572,354	.....	39,038	.....	.....
1847	12,200	1,120	4,444	1902	6,256,750	500,533	.....	73,931	.....	.....
1848	3,350	333	13,353	1903	7,748,450	619,705	.....	61,771	.....	.....
1849	.....	.....	.....	1904	8,072,300	654,949	.....	37,913	859	.....
1850	10,500	1,048	.....	1905	8,709,500	689,943	.....	25,417	32,876	.....
1851	1,250	268	1,593	1906	c 8,830,700	798,993	.....	38,817	154,087	.....
1852	7,050	806	.....	1907	c 6,409,550	511,923	.....	70,958	140,720	.....
1853	52,200	5,220	.....	1908	c 9,869,500	813,591	.....	65,999	98,773	.....
1854	58,500	7,023	.....	1909	c 10,830,450	867,419	.....	76,668	79,934	.....
1855	76,900	12,076	.....	1910	c 12,074,100	972,698	.....	37,456	59,633	.....
1856	70,500	9,671	.....	1911	c 12,449,500	986,341	.....	70,775	93,733	.....
1857	69,200	9,449	2,624	1912	c 11,297,100	903,396	.....	65,506	83,470	.....
1858	29,250	2,340	7,455	1913	c 13,619,850	1,089,481	.....	27,533	49,094	.....
1859	67,250	6,051	17,259	1914 ^d	c 6,279,750	562,153	.....	47,589	47,377	.....
1860	54,800	4,932	16,360	1915 ^e	c 9,968,500	808,392	.....	39,800	18,197	5
1861	27,750	2,497	24,945	1916 ^e	5,432,100	441,991	.....	78,926	6,127	381
1862	68,800	7,151	21,541	1917 ^e	3,890,650	310,893	.....	61,381	10,208	1,102
1863	32,900	2,963	25,265	1918 ^e	3,436,250	274,141	.....	72,669	18,959	2,060
1864	58,300	5,508	24,520	1919 ^e	4,135,750	332,584	11,535	81,834	16,886	3,995
1865	183,950	15,693	13,490	1920 ^e	5,065,300	465,731	21,935	117,072	18,875	3,974
1866	85,650	6,849	23,722	1921 ^e	9,816,250	1,137,819	24,916	240,579	22,121	3,704
1867	56,750	4,541	18,442	1922 ^e	8,309,750	1,041,047	22,248	181,801	23,073	10,107
1868	8,000	638	26,045	1923 ^e	7,911,310	997,454	12,377	54,769	13,328	6,878
1869	179,900	14,273	32,998	1924 ^e	11,126,861	1,367,517	11,505	102,912	21,161	20,075
1870	157,200	17,551	48,890	1925 ^e	11,844,303	1,477,997	13,928	348,713	29,606	39,877
1871	218,500	15,304	26,926	1926 ^e	12,001,384	1,522,958	10,972	186,775	40,136	42,057
1872	37,000	2,590	31,536	1927 ^e	12,580,262	1,651,149	8,727	238,203	15,056	47,819
1873	68,150	4,771	62,916	1928 ^e	10,384,784	1,265,383	7,783	199,754	15,818	26,454
1874	345,600	24,192	70,572	1929 ^e	7,635,237	960,435	6,603	147,426	27,602	39,131
1875	342,350	23,965	66,465	1930 ^e	6,579,743	807,425	4,687	225,208	35,850	63,307
1876	219,050	23,743	65,772	1931 ^e	4,127,856	507,382	26,615	22,228	40,628	77,510
1877	336,150	36,979	31,851	1932 ^e	3,062,673	361,700	85,488	43,790	35,333	56,170
1878	580,900	63,902	35,064	1933 ^e	2,235,540	262,617	80,332	40,546	42,016	59,301
1879	627,250	69,742	35,001	1934 ^e	4,060,830	487,248	76,107	88,846	33,352	26,331
1880	662,550	66,252	31,970	1935 ^e	5,326,117	636,466	65,494	75,424	20,904	26,730
1881	792,750	79,277	77,165	1936 ^e	5,598,180	679,522	50,665	66,474	15,284	35,363
1882	936,500	93,650	96,050	1937 ^e	5,673,903	699,684	52,338	44,916	12,237	27,526
1883	997,000	79,760	56,250	1938 ^e	7,545,744	932,420	47,934	75,670	14,491	38,185
1884	861,700	68,926	20,960	1939 ^e	5,704,250	722,310	43,518	22,884	13,865	35,128
1885	848,150	67,850	36,216	1940 ^e	5,049,585	634,859	62,796	34,571	17,842	25,550
1886	626,150	50,092	27,450	1941 ^e	6,091,187	790,876	74,935	41,596	19,485	47,736
1887	354,800	28,384	34,533	1942 ^e	5,224,634	700,474	64,454	47,613	13,686	59,867
1888	525,750	42,060	33,525	1943 ^e	3,516,566	605,327	32,426	17,481	6,896	74,904
1889	788,500	63,080	57,465	1944 ^e	3,645,354	613,994	25,324	80	1,598	70,253
1890	1,172,200	82,052	51,355	1945 ^e	2,851,475	570,028	27,307	.....	1,294	72,704
				1946 ^e	3,373,025	722,061	f 2,616	.....	2,795	103,055
				1947 ^e	3,458,628	865,255	f 13,118	7,584	4,872	128,050
				1948 ^e	3,584,405	1,099,073	f 6,572	100,616	12,056	151,768
				1949 ^e	3,198,212	993,152	f 6,639	35,571	9,556	116,465
				1950 ^e	2,857,946	974,493	f 13,525	35,635	5,112	75,395
				1951 ^e	2,342,492	918,485	f 25,101	45,546	8,243	78,550
				Total	386,823,336	43,172,482	1,039,800	5,681,233	1,521,745	1,823,303

^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. ^f Excludes Casks (principally empty returns) previously included in this item. ^g Includes £26,963, being Items 6404, 6605, 6627, 6628 and 6648 of Appendix 2A for which the quantity in cub. ft. is not available.

APPENDIX 2D.

SUMMARY OF IMPORTS OF TIMBER, TANNING MATERIALS AND ESSENTIAL OILS, SINCE 1848.

Year.	Timber, Woodware, etc.	Tanning Materials.	Essential Oils.	Year.	Timber, Woodware, etc.	Tanning Materials.	Essential Oils.
	£	£	£		£	£	£
1848	464			1900	56,266	1,416	1,105
1849				1901	80,134	1,740	1,546
1850	189			1902	97,810	3,418	1,751
1851	2,216			1903	102,383	3,556	1,348
1852	2,479			1904	157,856	1,322	2,122
1853	790			1905	98,494	582	1,592
1854	831			1906	95,229	1,412	1,915
1855	1,464			1907	122,016	2,767	1,549
1856	1,124			1908	93,205	2,392	4,584
1857	774			1909	90,502	4,129	4,003
1858	1,528			1910	171,280	3,531	3,686
1859	690			1911	152,133	2,912	4,938
1860	2,095			1912	167,244	3,089	4,598
1861	1,459			1913	202,640	2,651	5,392
1862	1,920			1914	78,736	629	2,823
1863	1,568			1914-15	107,763	2,082	4,988
1864	894			1915-16	76,849	3,313	4,788
1865	548			1916-17	75,681	2,848	3,484
1866	1,442			1917-18	58,305	2,020	4,358
1867	1,727			1918-19	62,824	1,181	4,168
1868	1,451			1919-20	100,083	3,748	10,043
1869	1,408			1920-21	171,654	*4,899	6,106
1870	1,518			1921-22	92,448	5,865	6,577
1871	736			1922-23	109,428	6,991	4,033
1872	1,660			1923-24	133,893	2,790	3,301
1873	1,008			1924-25	161,898	2,670	4,429
1874	1,774			1925-26	144,989	5,826	4,449
1875	2,707			1926-27	162,193	8,971	4,254
1876	3,098			1927-28	183,196	9,648	6,955
1877	2,036			1928-29	241,601	6,894	4,413
1878	2,947			1929-30	197,532	10,825	3,980
1879	2,340			1930-31	76,533	4,145	3,160
1880	3,061			1931-32	164,496	4,705	3,505
1881	3,639			1932-33	197,916	4,903	3,421
1882	3,692			1933-34	183,944	4,310	3,888
1883	6,667			1934-35	211,056	4,076	5,040
1884	2,930			1935-36	228,451	5,401	3,921
1885	11,479			1936-37	257,164	5,267	4,810
1886	17,888			1937-38	270,126	4,777	6,560
1887	8,136			1938-39	254,315	3,974	7,014
1888	4,461			1939-40	259,399	6,802	23,027
1889	7,686			1940-41	249,111	3,798	32,399
1890	14,979			1941-42	283,611	15,846	33,828
1891	18,406			1942-43	163,480	6,250	47,718
1892	26,713			1943-44	149,928	7,883	68,871
1893	14,493			1944-45	148,838	9,264	75,449
1894	17,964			1945-46	†219,466	19,573	56,295
1895	47,128			1946-47	386,465	12,395	78,091
1896	5,381			1947-48	345,508	8,019	96,769
1897	164,552			1948-49	570,755	8,662	42,926
1898	55,566			1949-50	521,815	24,923	51,197
1899	45,689			1950-51	640,059	21,147	161,358
				Total	10,157,096	302,237	932,525

* This and subsequent years include tanning extracts, not previously recorded.

† This and subsequent years include values for furniture, bamboo, cane, etc., not previously included.

APPENDIX 3.

TIMBER INDUSTRY REGULATION ACT, 1926-50.

Annual Report for Year ended 31st December, 1950.

The number of mills registered under the provisions of the Act at the close of the year totalled 256 (127 Crown Lands, 129 Private Property).

The average number of persons employed on timber holdings each month throughout the year was 4,047 compared with 3,859 last year.

The District and Workmen's Inspectors made 630 inspections of Timber holdings and investigated and reported on 572 notifiable accidents, of which five were fatal.

The number of accidents per 100 persons employed was 14.1 compared with 14.1 for last year.

The total period of incapacity as a result of accidents was 14,030 days, an average of 24.5 days per injured person (compared with 22.4 days last year).

Returns as listed hereunder have been prepared, but are not included in this report.

1. Number of notifiable accidents reported in accordance with Section 14 of the Act, according to months, and indicating the age and nationality of the injured person, the period of incapacity, and the number of cases on which the first aid outfit was used.
2. The number of accidents reported during 1950, and their classification according to location and nature of injury.
3. The number of accidents classified according to cause of accident and location of injury.
4. The number of accidents classified according to cause of accident and nature of injury.
5. The number of accidents classified according to the months and days of the week, on which the accident occurred.
6. The number of hours worked on the day and up to the time of injury by the person injured.
7. A return showing by months the time at which the notifiable accidents occurred.
8. A return showing the personal cause of accidents as determined by the Inspectors.

T. N. STOATE,
Controlling Officer.

APPENDIX 4.

DEPARTMENTAL PUBLICATIONS.

The only new publication was "Forests and Wood," by T. N. Stoate.

"Nutrition of the Pine," by T. N. Stoate was completed but not yet returned from the printer.

By courtesy of the West Australian Newspapers, Ltd., "Tall Timbers" by Martingale was reprinted from the 1949 Christmas Annual of "The Western Mail." This is for general distribution.

Revisions were made of Foresters' Manual, Part I, by G. W. M. Nunn. Pamphlet 4 was issued covering General District Work in the South-West and issued on a restricted list to officers of the Department.

"Care and Maintenance of Bush Telephone Lines" was reissued to officers of the Department in August, 1950, after minor revisions only.