

1949

WESTERN AUSTRALIA

REPORT

on the operations of

THE FORESTS DEPARTMENT

for the

YEAR ENDED 30th JUNE, 1949

by

T. N. STOATE, M. Sc. (Adel.), Dip. For. (Oxon.)
CONSERVATOR OF FORESTS

PERTH :

By Authority : William H. Wyatt, Government Printer.

1949.

Annual Report on the Operations of the Forests Department for the Year ended 30th June, 1949.

INTRODUCTION AND SUMMARY.

THE TIMBER INDUSTRY.

The volume of sawn timber, 10,484,619 cubic feet, valued at £2,647,300, produced during the year ended 30th June, 1949, was slightly more than in the previous year, and exceeded 10 million cubic feet for the second time since 1942. This is still, however, somewhat less than three-quarters of the output of 14,300,000 cubic feet in the pre-war year 1938. The production from Crown lands is a still smaller fraction of the pre-war figure, the total having been raised by increased cutting on private property.

Western Australia remains the only State in the Commonwealth which is still below pre-war production. The States of New South Wales and Victoria have doubled their output and Queensland has increased hers by some twenty-five per cent.

A notable development in the timber industry in Western Australia since the outbreak of World War II has been an increase of approaching 100 per cent. in the number of mills from 134 to 234, accompanied by a drop in total production of 25 per cent. The additional plants are, however, all small, as can be seen by the present low total output. It is of interest that (including firewood cutters and departmental employees) nearly 5,000 wage earners are employed in the forest.

The industry as at present constituted produces only three-quarters of the 1938 output, demonstrating that it is the big mills in the forest which supply the main output in sawn timber. These big mills, particularly the more outlying ones, have been hampered for many years now by lack of manpower. Material shortages also play a part. Steel supplies for construction, saws, shafting, pulleys, etc., are still very difficult to procure. Another retarding factor was the destruction by fire of three mills, two of which were of large capacity.

Important contributions towards the needs of the sister States, South Australia and Victoria, were continued as was a small token overseas export sent in an endeavour to hold important markets for our well-known woods jarrah and karri. It is considered good economy for the State to protect an export market in high quality hardwoods, such as jarrah and karri, which have gained a wide reputation for their strength, durability and beauty for special purposes. Fast-growing softwoods can be produced locally to replace them for many purposes for which high quality timbers are not essential.

The gross revenue of the department fell considerably during the year to £238,357, as compared with

£300,199 for the previous year. The principal contributory causes of the present low revenue of the department are the low output of timber from Crown lands and the falling off in the sandalwood trade. At the close of the year an increase of nearly 30 per cent. in the average royalty rate was effected.

Sandalwood, always hitherto an important item of trade, had, owing to the chaotic conditions in China, a very much reduced production during the year. Distillation of sandalwood oil within the State continues chiefly because of its use in soaps and perfumes.

A commencement was made during the year with the thinning on a commercial scale of the young mallet forests. In addition to tanbark, the thinnings yielded mining timber for the Murchison Goldfields.

The expansion in the honey industry in Australia, which last year exported 12,000 tons valued at more than £1,000,000, focussed attention on the karri and wandoo forests, two important honey sources. Some migration of the industry from the east coast of Australia occurred during the year.

Amongst forest produce of importance from Crown lands may be mentioned wandoo for tannin extract, totalling 17,774 tons; mallet bark 132 tons; mining timber 12,310 tons, and 222,000 lineal feet of piles and poles.

Firewood supplies for the metropolitan area were met by permit holders on State forest and Crown lands and by private property operators, but a shortage may be felt in the 1949 winter owing to the lack of labour in this industry. The department has maintained small reserves since the war years against these emergency winter demands and steps are being taken to build up these stocks slightly in view of the anticipated further drain. The same shortage of manpower affects the supply of wood by the department to Nos. 1 and 2 Pumping Stations at Mundaring Weir, and a camp of displaced persons has had to be maintained to increase supplies.

The consumption of plywood has become of increasing importance over the past decade. In 1947-48 local production reached nearly five million square feet and imports were nearly three million. During the year under review over five million square feet have been produced mostly from karri logs and from logs imported from overseas. There is consequently a large demand for suitable pine logs which cannot be met from existing pine plantations for many years. This demand emphasises the importance of early pruning of selected trees in plantations in order to provide knot-free logs for peeling.

The major works of the department now cover the fire protection of nearly two million acres; the maintenance of 12,000 miles of roads, tracks and firelines; the maintenance of 13,000 acres of pine plantation and 17,000 acres of mallet plantation. About 30,000 acres of jarrah and karri forest were treemarked before milling and treated by top disposal after milling for the establishment of re-growth.

A total of 20 houses were constructed during the year as part of the programme for the housing of employees in the field.

The fire problem continues to be the greatest single obstacle to the successful maintenance of our forests in Western Australia. The greatly increased number of fires, 527, which had to be attended by departmental fire gangs was an indication of the weather experienced this summer. The number of fires was also a reflection of man's use of the forest for all but four, which were lightning fires, were due to human agencies. The number of escapes, 99, threatening the forest from private property fires was disturbing and a greatly improved forest consciousness is much to be desired.

The fire season was notable for the prolonged period of severe fire weather constituting the worst season since the fire weather station was established at Dwellingup.

An early summer commenced and continued dry until Christmas when there were three days of light rain. After this break another dry spell of 84 days developed. During this period only 32 points of rain fell on five wet days in January. February was completely dry. During March there were five more wet days with a total of 106 points. This was followed by 30 rainless days before Easter. Only light rain fell, however, at that time and fires were running freely up to the 15th June in the northern end of the forest.

Twelve (12) days of dangerous hazard were experienced at Dwellingup, compared with a previous average of two and a half days and a maximum of seven (7) dangerous days per summer. Thirty-six (36) days of severe hazard can be compared with the average of 12 days and a previous maximum of 17 days.

In all, 527 fires were attended by departmental gangs. Only two of these fires could not be held the first day and in periods of exceptionally severe weather, burnt through the night and on the following day. These two fires, extending over 9,000 acres, caused one of the greatest losses so far recorded in fully protected forest.

Shortage of manpower in the forest prevented fire gangs being built up to full strength, affecting both the controlled burning programme and the actual fire suppression.

Saves made by the department outside of the forest proper were a post office and store, a recreation pavilion, some poultry runs and houses, a large jarrah mill and houses at a mill centre. Assistance was rendered at a fire in another big mill. On several occasions departmental gangs were instrumental in saving hay and in stopping fires in established pasture and in closely settled areas.

During the year under review the department maintained 16 fixed radio stations and 54 mobile sets on gang trucks and control vehicles. Radio sets obtained from service disposals stock have been overhauled and rebuilt and the system of radio communication has become an integral part of the fire control system.

The special provision of loan funds enabled a start to be made with the extension of the pine plantations on which operations had been virtually suspended since the outbreak of World War II. A vigorous policy of afforestation is needed now to supply the growing demands in the State, and the studies made in the problems of pine nutrition and pine establishment in the past will now render a rapid expansion possible if funds are forthcoming for the purpose.

Towards the close of the year displaced persons were, for the first time, drafted to forest work, apart from firewood cutting. This enabled a start to be made with overtaking the arrears of pine pruning which had accumulated since the beginning of the war, and a few were engaged on other urgent works which have long been held up for lack of men, such as pine establishment and culvert and bridge construction on forest roads.

Trees raised in the Kalgoorlie Nursery from the inland regions are becoming increasingly popular, and a greater demand was made this year; as before, the species most sought after was the Salmon Gum (*Euc. salmonophloia*).

Arrangements were made with a number of local governing bodies and also several individual farmers to establish a number of arboreta (nine in all) at various points in the wheat belt, the department to provide suitable planting stock free. The sites selected for these arboreta were:—

Northampton (2), Yuna (2), Mullewa, Mingenew, Morawa, Watheroo and Moora.

During the year revised Australian standard grading rules for jarrah, karri and wandoo were published in co-operation with the Standards Association of Australia; they supersede the first rules published in 1938. An endeavour has been made to reflect in these grading rules the current standard practice of the timber trade in Western Australia. The definition of allowable defects in timber recommended for a specific purpose will enable buyers to obtain an appropriate grade of material and thereby avoid unnecessary waste. An inspection service is maintained by the Western Australian Forests Department, inspection being carried out at the request of either buyer or seller.

The assistance of the Division of Forest Products of the Commonwealth Council for Scientific and Industrial Research Organisation was obtained in connection with a number of subjects investigated during the year.

Consideration is being given to the possibilities of the development of a small low-cost plant to use mill edgings for wallboards, and of a similar plant for the production of mechanical pulp from pine tops. A project which has been in hand for some time is the creosote treatment of the less durable hardwoods, particularly marri. A technique has been evolved in the laboratories of the division for the use of pressures up to 1,000 lbs. per square inch, but the work on the commercial scale has been held

up because of steel shortages, delaying the construction of a pressure cylinder. Studies receiving periodical attention are fence-post trials and the behaviour of various faults in sleepers.

Certain timbers submitted to the department for identification have been sent on to the Division of Forest Products for checking, or in certain cases for the naming of woods unknown to the department. Some hardwoods from the United States made their appearance in Western Australia for the first time during the war, and recently tropical woods have been imported from countries of the Malayan Archipelago.

During the year a mill study was made of a jarrah mill entailing an examination of both production and conversion methods concurrently with a study covering rates of conversion.

A further study of our tanbarks, including karri bark, and known high kino bearing woods was undertaken during the year by the Technological Museum, Sydney, in conjunction with the Division of Forest Products.

The study of sawdust utilisation continues to receive attention. A step grate furnace for the burning of sawdust was installed during the year at one of the larger Jarrah mills, and provision has been made for similar furnaces at one of the largest mills now under construction.

In the field of pulp and paper manufacture, a considerable amount of research has been carried out in Australia and is continuing on problems connected with the use of our Eucalyptus. The opportunity for exchange of ideas on technical problems is provided by an annual conference of research workers in that field. The Division of Forest Products is working on Western Australian Eucalypts.

The administration of the Timber Industry Regulation Act is briefly reported on in an appendix attached hereto. During the year 458 inspections of timber holdings were made; 565 notifiable accidents, of which 6 were fatal, were investigated. The average period of incapacity was 22.6 days per person injured. There were 3,629 persons employed on timber holdings; 228 sawmills were registered and of these 121 operated on private property. At June 1949, the total number of mills had risen to 234.

THE FOREST AREA.

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

The area of State Forest as at the 30th June, 1949 was 3,402,963 acres, an increase of 3,164 acres, as compared with the acreage for the previous year; 20 acres were excised from State Forest during the year.

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

The total area of timber reserves was increased to 1,789,623 acres by the addition of 490 acres.

REVENUE.

The gross revenue of the Department for the year ended 30th June, 1949, was £238,357, as compared with £300,199 for the previous year.

Royalties and rents produced £150,911, which is a decrease of £4,590 on last year's figure. There

was a further decline in revenue from Sandalwood from £86,863 last year to £31,743.

Of the amount of £55,702 collected under the heading of Departmental, the major items are sales of firewood £32,849; sale of pine timber £13,482, and inspection fees £3,016.

Goldfields revenue amounted to £10,086, as compared with £10,690 for the previous year.

REBATES OF INSPECTION FEES.

These rebates were discontinued and no allowance has been made in respect of any inspection carried out after 30th June, 1948. Rebates during the year totalled £120 6s. 5d., representing the final allowance on June inspections.

SAWMILLING AND HEWING.

From the 1st July, 1948, the recovery figure for Karri was increased from 27% to 34% (Jarrah remained at 35%) with the result that the recovery of sawn and hewn timber for the year increased slightly on the figures for the previous year, although the log intake was a little below that of 1947-48.

The log intake for the year was 30,076,097 cubic feet and the recovery of sawn and hewn timber 10,484,619 cubic feet (31,123,244 and 10,459,323, respectively, in 1947-48).

Shortage of labour and the lack of materials were again the chief factors in preventing a return to normal production conditions, although power shortages retarded distribution with the Metropolitan Area. In addition, three mills were destroyed by fire during the year. These were a case and sleeper mill at Donnybrook in February; one at Greenmount and one at Bedforddale in March, both of which were producing scantlings for the Metropolitan Area. A number of Displaced Persons have been absorbed into the industry, but experienced fallers still constitute the most serious need.

Although progress was made with the erection of several new mills, they did not go into production during the year. It is expected that Quinninup, Jardee, Northcliffe, Donnelly River and Denmark mills will commence cutting in 1949-50.

Hewn timber totalling 5,644 cubic feet was produced as compared with 7,799 cubic feet for the previous year.

Departmental plantations contributed 282,885 cubic feet to the total quantity of 407,072 cubic feet of pine produced within the State.

The intake of Marri (Red Gum) was 289,023 cubic feet in the round, as compared with 348,655 cubic feet for 1947-48.

Locally grown peeler logs totalled 52,199 cubic feet, the principal species used being Karri (41,792 cubic feet) and pine (7,995 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 3,629 for the year ended 31st December, 1948, against the average of 3,395 for the year ended 31st December, 1947.

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:—figures for 1947-48 are given for comparison.

TIMBER PRODUCTION.

Production of Timber for Year ended 30th June, 1949 (exclusive of Mining Timber, Firewood, Piles and Poles).

	MILL LOGS.					HEWN TIMBER.				GRAND TOTALS.	
	Jarrah.	Karri.	Other.	TOTAL.		Jarrah in Square.	Wandoo in Square.	TOTAL.		In Log.	In Square.
				In Log.	Recovery of Sawn Timber.			In Log.	In Square.		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
Crown Lands	Cub. ft. 16,137,337	Cub. ft. 3,217,979	Cub. ft. 902,781	Cub. ft. 20,258,097	Cub. ft. 7,058,154	Cub. ft. 737	Cub. ft. 1,135	Cub. ft. 8,685	Cub. ft. 737	Cub. ft. 20,261,782	Cub. ft. 7,058,891
Private Property	7,987,654	560,247	1,241,879	9,789,780	3,420,821	3,772	1,135	24,535	4,907	9,814,315	3,425,728
Grand Totals	24,124,991	3,778,226	*2,144,660	30,047,877	10,478,975	4,509	1,135	28,220	5,644	30,076,097	10,484,619

Figures in columns (1), (2), (3), (4), (8), and (10) are in the round based on full volume measure.

Figures in columns (5), (6), (7), (9), and (11) are the volumes of sawn or hewn timber measured in the square.

* Comprises—1,013,430 cubic feet Wandoo; 407,072 cubic feet Pine; 239,023 cubic feet Marri; 237,936 cubic feet Blackbutt; 88,651 cubic feet Sheoak; 81,595 cubic feet Tuart; 16,324 cubic feet Morrell; 5,780 cubic feet Bullich; 2,618 cubic feet Yate; 1,694 cubic feet River Banksia; 537 cubic feet 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 (figures for 1937-38 are given for comparison):—

Year.	From Crown Lands.			From Private Property.			Total Quantity.	Estimated Value of Timber Obtained.
	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.	Sawn Timber other than Sleepers.	Sawn Sleepers.	Hewn Sleepers.		
1947-48	Cub. ft. 5,995,413	Cub. ft. 1,431,023	Cub. ft. 2,262	Cub. ft. 2,510,894	Cub. ft. 514,194	Cub. ft. 5,537	Cub. ft. 10,459,323	£ 2,505,000
1948-49	5,908,788	1,149,366	737	2,917,311	503,510	4,907	10,484,619	2,647,300
1937-38	8,590,815	1,046,327	600,633	1,088,493	995,017	1,972,907	14,294,192	1,900,000

TIMBER INSPECTION.

Sawn and hewn sleepers inspected during the year amounted to 1,453,400 cubic feet, while sawn timber other than sleepers submitted for inspection totalled 177,703 cubic feet.

The number of piles and poles inspected was 2,522, amounting to 70,331 lineal feet.

TIMBER CONTROL AND PLANNING.

The Department has continued to co-operate with the Forestry and Timber Bureau and the sawmillers in determining the six-monthly programme of production and distribution.

With the building capacity showing greater increases than expected and the need to build houses for migrants, it has been necessary to provide for increased quantities of timber for the local market. As a result of a number of discussions, sawmillers' agreed to drastically cut export overseas until such time as production is increased by the opening of mills under construction.

The timber industry is still suffering from a shortage of labour for key positions in the mills, but has been fortunate in securing the services of a number of Displaced Persons for the unskilled jobs.

FIREWOOD PRODUCTION.

The estimated total consumption of firewood for the year was 732,570 tons, made up as follows:—

Metropolitan Area	tons.	tons.
Goldfields Area:—		251,037
Mining	210,824	
Nos. 3 to 8 G.W.S. Pumps	33,943	
Domestic and other uses	27,939	
		272,706
Nos. 1 and 2 G.W.S. Pumps		21,453
Mill waste used as fuel by sawmills ..		124,374
Country centres		63,000
		732,570

Over 70% of the total consumption was supplied from Crown Lands, as follows:—

Goldfields licenses and permits ..	tons.	270,454
Mill waste used or sold by Sawmills on Crown Land		138,276
Firewood permits (South West) ..		88,657
Miscellaneous licenses, etc.		2,095

Supplied by Forests Department:—

(a) Nos. 1 and 2 G.W.S. Pumps:

Piecework cutters	12,761	tons.	tons.
Ex stocks N. Dandalup and Marrinup	4,231		
Ex Bartons	1,430		
Ex Wundowie (P.P.)	419		
Ex Petty Contractors	2,612	21,453	

(b) Hospitals and Institutions:

King Edward Memorial Hospital	1,072		
Mental Hospitals (Claremont, Lemnos, Heathcote and Whitby)	579	1,651	

(c) Industrial Concerns:

Donnybrook Dehydration	620		
State Brickworks	213		

(d) P.W.D. Portagabra

833	
405	
24,342	
523,824	

Although the Department provided firewood for Mental Hospitals and certain Government Institutions supplies for Metropolitan Woodyards and schools were discontinued.

Great difficulty was experienced in maintaining adequate supplies for Nos. 1 and 2 Goldfields Water Supply Pumping Stations. Reserve stacks at the Pumps were practically exhausted towards the end

of last summer, and it was necessary to take over 500 tons of firewood from reserves held by the Charcoal Iron Industry at Wundowie. Piecework cutters at Mundaring Weir were unable to meet the record demand and additional cutters could not be found. A road of access to large supplies of firewood within direct road hauling distance of the Pumps is being opened up and this should ease the position when displaced migrants are made available to provide the labour. The position improved considerably after the end of the summer. With supplies forthcoming from petty contractors, Bartons Prison Camp and from a camp at North Dandalup, reserves are being built up at both Pumps to meet the anticipated demand next summer.

SANDALWOOD.

Sales of sandalwood in China were again limited and owing to the chaotic conditions in that country the future of the industry remains obscure. Only 158 tons were exported during the year.

Orders were placed for 30 tons of sandalwood pieces for export and 126 tons of logwood for oil distillation purposes within the State.

The quantity of sandalwood delivered under orders is set out in the following statement:—

	Oil Dis- tillation tons.	Export tons.
From Crown Lands		
Logwood	70	—
Second Grade	10	—
Old Roots and Stumps	8	—
Pieces	—	18
From Private Property		
Logwood	—	4
	88	22
	—	—

The quantity of sandalwood oil produced by local distillers during the year was 4,965 lbs. and 4,200 lbs. were exported.

FOREST PRODUCE,

Piles and poles, totalling 222,097 lineal feet, were obtained from Crown Lands, and records available show a total of 314,661 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 132 tons of mallet bark, of which 50 tons came from thinnings and 17,774 tons of wandoo for the production of tannin extract. Private property supplies were estimated at 384 tons of mallet bark and 46,370 tons of wandoo.

Mining timber in the round from Crown land licences and permits totalled 12,310 tons. In addition, the department supplied directly 7,774 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 10,431 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 OFFENCES.

One hundred and one forest offences were reported to head office during the year.

In four cases proceedings were taken against the offenders and fines, costs and damages amounting to £81 imposed. This amount includes a £10 fine and £45 damages (cost of suppressing a fire) awarded against an offender for illegally lighting a fire on State forest. A £5 fine and £10 costs was inflicted on an offender who illegally felled a tree which damaged a departmental telephone line.

FOREST PRODUCE NOT ELSEWHERE INCLUDED IN PRODUCTION TABLES, OBTAINED DURING YEAR ENDED 30TH JUNE, 1949.

Description of Forest Produce.	South-West Division and Agricultural Areas.		Northern Central and Eastern Goldfields.	Total.
	Crown Lands.	Private* Property.	Crown Lands.	
Mining Timber	2,667	10,431	9,643	22,741 Tons
Sleepers for Goldfields Wood Lines .. .. .	.. .. .	.. .. .	8,900	8,900 cub. ft
Firewood	115,094	1,523	61,882	178,499 Tons
Mill waste sold as Firewood	34,850	36,091	.. .. .	70,941 "
Mining Firewood .. .. .	.. .. .	.. .. .	210,824	210,824 "
Mill waste used as fuel by Sawmills	103,426	20,948	.. .. .	124,374 "
Charcoal	94	.. .. .	85	179 "
Blackboy	221	.. .. .	.. .. .	221 "
Piles and Poles	222,097	314,661	.. .. .	536,758 lin. ft
Fencing Posts and Rails	92,762	.. .. .	7,005	99,767 No.
Mallet Bark	132	384	.. .. .	516 Tons
Wandoo Timber for Tannin Extract	17,744	46,370	.. .. .	64,114 "
Boronia megastigma for distillation purposes	598	664	.. .. .	1,262 lbs.
Bean Sticks	280	.. .. .	.. .. .	280 No.
Stone	2,293	.. .. .	.. .. .	2,293 cub. yds.
Sand	2,406	.. .. .	.. .. .	2,406 "

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

The remaining offenders were either warned or dealt with by charging royalty, forfeiture of deposit, or the confiscation and sale of timber illegally cut. The amount received by the department in this way totalled £589.

EXPENDITURE.

Expenditure totalling £90,246 charged against Consolidated Revenue Fund included £42,104 in respect of the general administration of the Forests Act and Regulations and £1,881 to cover the cost of administering the Timber Industry Regulation Act. Pine conversion accounted for £8,819 whilst firewood production and other direct conversion projects involved an expenditure of £37,442.

Detailed statements of expenditure from Forests Improvement and Reforestation Fund and General Loan Fund appear in Appendices 1B and 1C, respectively.

The following statements show the transactions on Forests Improvement and Reforestation Fund during the year and the apportionment of the net revenue of the department:—

FORESTS IMPROVEMENT AND REFORESTATION FUND.					
	£	s. d.	£	s. d.	
Balance at 1st July, 1948—					
General Account	35,690	10 0			
Motor Vehicle Depreciation Account	3,683	13 1			
			39,374	3 1	
Three-fifths Net Revenue			91,071	9 11	
Treasury Grant			33,000	0 0	
Federal Aids Road Grant			15,000	0 0	
Direct Credits			4,151	19 7	
Allocation to Motor Vehicle Depreciation Account			2,873	7 0	
					185,470 19 7
Less Expenditure—					
General Account	167,894	4 11			
Purchase of Motor Vehicles from Depreciation Account	2,183	15 6			
Federal Aid Road Grant	15,000	0 0			
					185,078 0 5
Balance at 30th June, 1949—					
General Account	Dr. 4,256	15 5			
Motor Vehicle Depreciation Account	Cr. 4,649	14 7			
					Cr. £392 19 2

APPORTIONMENT OF NET REVENUE OF DEPARTMENT.					
	£	s. d.	£	s. d.	
Gross Revenue for Year 1948-49			238,356	11 3	
Less Revenue from Firewood, etc.			34,281	5 6	
					204,075 5 9
Consolidated Revenue Fund Expenditure	90,245	9 7			
Less Expenditure on Firewood, etc.	37,442	0 10			
					52,803 8 9
Less Timber Industry Regulation Salaries and Incidentals	1,880	15 7			
					50,922 13 2
Salary of Conservator	1,300	0 0			
Audit Fee	100	0 0			
					52,322 13 2
Net Revenue					£151,752 12 7
Three-fifths Net Revenue					£91,051 11 7
Amount credited to Forests Improvement and Reforestation Fund during Year 1948-49					£91,071 9 11
Amount Overcredited (to be adjusted next year)					£19 18 4

REFORESTATION.

The total area of Jarrah and Karri within State Forest cutover during the year amounted to 40,324 acres. Of this area, 38,435 acres were treemarked in accordance with silvicultural rules to ensure regeneration. This cutting was followed by top disposal work for the protection of the immature growing stock remaining.

A small beginning was made with the extension of management and protection over the hitherto undeveloped and unprotected forests in the extreme South West of the State. In addition to funds, both

heavy machinery, particularly bulldozers and trucks and manpower are required for the work.

The road and track system now totals 12,040 miles due to the construction this year of 251 miles. Maintenance of the system is still in arrears due to difficulty in obtaining power graders, tractors and decking for bridges. Approximately 2,400 miles had maintenance grading, but it is anticipated that machinery now on order will come forward in time to deal with the more important arrears before next fire season.

The telephone system now covering 1,304 miles of earth return line is in need of repairs and extensions which have been delayed for some years due to shortages of wire and insulators.

Twenty houses were built for resident employees and a number of others have been commenced.

AFFORESTATION.

The pine planting programme of 1,000 acres per annum, which was decided soon after the passing of the Forests Act in 1918 was never realised because of difficulties in connection with the establishment and early growth in pine stands in this State. Planting was entirely suspended during the war and little new planting has been done since. Attention, however, has continued to be paid to establishment and nutrition problems and this will allow future planting to be faced with confidence.

A special allocation of Loan Funds of £30,000 enabled a start to be made with the inauguration of a new pine planting programme. Some time will be taken to complete surveys and clear land in preparation for planting. The aim is to plant at the rate of 2,000 acres per annum within three years and then to consider a further extension for a few years to make up for the arrears of the war and post-war years. 1,076 acres were cleared this year.

The total area of pine plantations is now 13,050 acres. With funds now available for the purpose, pruning which had lapsed for many years was recommenced in most plantations and a total of 578 acres was pruned. Thinnings were continued on a small scale, and yielded 20,000 cubic feet of thinnings. The total volume of pine logs removed and marketed from Departmental plantations was 283,000 cubic feet, the bulk of which came from 65 acres of clearfelling necessary due to the raising of the wall at Mundaring Weir.

Mallet areas, totalling 592 acres, were thinned, producing timber for mining purposes as well as 50 tons of mallet bark. 218 acres were sown this year. The total area of mallet plantation is now 17,563 acres. 91 acres were cleared for future sowing.

FIRE CONTROL.

The 1948-49 fire season was marked by some unusual features.

The rains carried over into the late spring and curtailed spring burning very considerably. There were 16 wet days in each of September and October in the northern areas. Suitable weather for controlled burning was experienced in November and early December in the northern regions while burning was continued to the end of December in the south and on grass lands on the Coastal Plain. Welcome rain fell on Christmas Eve.

Immediately after Christmas bad fire weather began and a hot, dry spell continued to the 12th March, a period of 84 days broken only when 32 points of rain fell on five "Wet" days in January. February was completely rainless and then there were five consecutive wet days in March, with a fall of 106 points. There was no further rain till the 15th April. The whole of this period was characterised by high temperatures, low humidities and strong easterly winds.

The Dwellingup Fire Weather Station records show the 1948-49 summer to have been the worst season experienced since records were first kept in 1934. There were 13 days of Dangerous hazard compared with a mean of $2\frac{1}{2}$ and a previous maximum of seven; and 36 days of Severe Summer, compared with a mean of $12\frac{1}{2}$ and a previous maximum of 17. The average hazard for the year was 6.2. 61% of the days were Average Summer or worse.

In all, a total of 527 fires were suppressed by Departmental gangs, compared to 278 last year. Of the 204 fires in fully protected forest, all but two were confined to small areas and suppressed within a few hours. The two which burned until the next day accounted for over 9,000 acres, out of the total of 11,600 mentioned below, of forest being burned, the largest area for a number of years.

Fortunately the bulk of this area was in poor quality forest, and the actual material loss was not commensurate with the area concerned.

A total of 11,600 acres were burned in "A" Zone, a percentage of just over 1%.

In all, there were 204 fires in "A" Zone, 159 in "B" Zone, and 164 in unprotected areas on the borders of protected forest.

Two of these fires in unprotected areas extended along the eastern boundary for more than 60 miles.

The number of fires and their causes are listed below:—

W.A.G.R. Locos.	93
Mill locos.	63
Bush workers	23
Mill and bush navy gang	5
Hunters and fishers	27
Travellers in the forest	45
Stock owners and leaseholders	61
Escapes from private property to State Forest	99
Firewood cutters	4
Lightning	4
Deliberately lit	4
Escape from controlled burning	23
Mill surroundings	16
Mine surroundings	7
Employees of other Government departments	10
Householders	10
Children	14
Unknown	19
<hr/>	<hr/>
Total	527
	<hr/>

Some interesting facts arise from a comparison of these figures with those of the previous year and indicate the severity of the summer. In the year under review, W.A. Government Railway locos. lit 93 fires in State forest on a mileage of only 98 miles of line, compared with 60 for the previous year. Mill locos. lit 63 on 360 miles of line as against 47; bush workers 23 as against 6 for the previous year.

Travellers in the forest are responsible for an increasing number of fires, 45 last year as against 24 the previous year, mainly probably because of the increase in the number of cars on the roads.

Stock owners and leaseholders lit 61 fires last year as against 10 the previous year, and escapes from private property were 99, as against 30. The latter figures are disturbing. It is always hoped that increasing public fire consciousness will result in a decrease of fires from private property, but last year there was an alarming increase.

During the season departmental gangs were instrumental in effecting several good saves of private property. In the first case a fire menaced a small country store, post office and petrol dump. The local gang, with heavy duty outfit, extinguished the fire as it was licking round the walls of the buildings.

In another case, in the metropolitan area, a fire sweeping through a large tract of scrub country approached a settled area and was menacing a number of homes and poultry farms. The call to help these settlers was quickly answered by the departmental gang and the fire was stopped at a road in the path of the fire immediately adjoining the settlement. There is little doubt that, if the department's trained men and equipment had not been available, a number of homes, sheds and poultry runs would have been burnt out.

At one of the large mills in the South-West, departmental gangs gave valuable assistance in suppressing a fire in the mill and, in another case, a smaller mill was saved from complete destruction by the same agency. During the Christmas holiday period a fire swept up to this mill and it was well alight when departmental gangs succeeded in suppressing the fire. Departmental gangs also were mainly instrumental in saving a portion of a mill village menaced by fire.

One further tower was put in operation this fire season, giving cover to the forest west of Kirup, and it proved very helpful. It is felt that several more towers are needed before the forest area can be said to be adequately covered.

The telephone service proved very valuable in maintaining communication from fire to control point at divisional headquarters.

Further heavy power pumping fire trucks were put into commission. The use of water in combating fires is becoming more general, with improved results, and of course, the general use of these units in "mopping up" has gone a long way towards eliminating subsequent breakaways, resulting in considerable saving in time, money and manpower.

Once again the department staged a demonstration of fire fighting equipment and fire control generally at the Royal Show, which excited considerable interest and favourable comment.

As in previous years the saw milling industry, when called upon, provided assistance that was greatly appreciated.

Radio communication was used extensively during the year and owing to further training and experience the use of two-way radio proved very successful.

With a few exceptions, all vehicles used for fire fighting are equipped with radio and during the past fire season 54 mobile sets were operating and 16 fixed control centres.

Radio equipment in use was obtained solely from service disposals and with certain modifications has been found suitable for the department's requirements.

Two short severe periods of sunspot activities gave rise to radio blackouts last year. To meet this situation in future it is hoped to arrange for telegraphic warnings from the Radio Research Board, Sydney, of impending ionospheric storms.

It has been found very desirable to have light-weight pack-set radios for use near the face of fires. For this purpose orders have been placed for four suitable equipments for this purpose. It is proposed to test these equipments in the coming fire season to prove their suitability.

WORKING PLANS.

During the year considerable progress has been made in air photo interpretation work. Some new apparatus has been obtained and one officer, while on long service leave, carried out studies in England. A suitable technique has been developed for Eucalypt forest.

Preliminary type maps from army air photos have been prepared over an area of approximately 204,000 acres and the use of air photos to save a great deal of ground work has become part of the routine of the Department.

Topographical mapping is considerably in arrears due to shortage of field staff but it is hoped to overcome some of the leeway by air photo work in future.

A new system of litho coverage of the forest area was designed and the compilation of two new lithos commenced.

ARBORICULTURE.

Hamel.

A slight increase in the number of trees distributed from Hamel was less than expected. This was due to the long spells of dry weather in the wheat belt.

A total of 56,970 trees were distributed, of which 46,383 were sold to country residents and local authorities, and 10,551 supplied for Departmental planting.

Sugar Gum (*Eucalyptus Cladocalyx*) headed the list of sales and was followed by Victorian Ti-tree (*Leptospermum laevigatum*), Monterey Pine (*Pinus radiata*), Maritime Pine (*P. pinaster*) and Brush Box (*Tristania conferta*). Other popular trees were

Tuart (*Euc. gomphocephala*), Pepper Tree (*Schinus molle*), Kurrajong (*Sterculia diversifolia*), Carob Bean (*Ceratonia siliqua*) and Tamarisk (*Tamarix gallica*).

The raising of plants of Norfolk Island Pine (*Araucaria excelsa*) has been the subject of investigation for some years. Difficulties arise due to the fact that the seed is highly infertile when obtained from Norfolk Island and from the Eastern States. It has now been found that trees grown in W.A. are producing the highest percentage of fertile seed, but there are very few trees of this species available from which collection of seed can be made.

Inland Areas.

A total of 6,500 trees was supplied from the Kalgoorlie Nursery during 1948—an increase of nearly 250% on the previous year's output.

Again, the species most in demand was Salmon Gum of which 1,767 were sent out. In view of the increasing demand an increase in sowing was carried out to at least double the output of the nursery.

Arrangements were made with a number of local governing bodies and also several individual farmers to establish a number of arboreta (nine in all) at various points in the wheat belt, the Department to provide suitable planting stock free. The sites selected for these arboreta were Northampton (2), Yuna (2), Mullewa, Mingenew, Morawa, Watheroo and Moora, the aims of this work being to test the suitability of various tree species on different types of soil, particularly the lighter soils which naturally carry only low scrub; to test practical methods of tree establishment in areas of light rainfall, reliance to be placed on cultivation, watering to be dispensed with.

The project requires some 5,000 trees, all of which have been successfully raised in addition to those required to satisfy the normal demand. Owing to the dry conditions prevailing during the early winter, these trees had not been sent out by June 30th.

Planting in mining centres continued and in addition to planting around the established mines, a very commendable planting scheme was embarked on at the new outback mining town of Porphyry.

The majority of the trees used are species native to Western Australia.

RESEARCH.

Shortage of staff has prevented the appointment of Research officers and consequently work has been limited to those studies made by officers in the course of their ordinary duties.

The main fields covered by investigation during the year were various phases of pine afforestation, the growth of Jarrah and utilisation.

Studies on pine nutrition and pine establishment were continued and a new bulletin on pine nutrition, dealing with the results of the work to date, will be issued in the coming year. The problem of raising planting stock in coastal nurseries, following what appears to be a depletion of the organic content in the surface soil in the first few years, received further attention. Experiments were made with nursery sterilisation and combinations of

fertilisers. Stratification has been employed as a method of improving tardy germination in Leiria Strain of *Pinus pinaster*.

For the furtherance of Jarrah growth studies, particularly, a research station at which workers from the State Forest Services and the Commonwealth Forestry Bureau will co-operate on fundamental research, has been established at Dwellingup. A commencement was made with basic work and studies are being carried out on anatomical and pathogenic factors parallel with detailed soil and ecological studies. Growth measurements of growing stock from the collection of data for the calculation of yields were continued.

In the field of utilisation, a further revision of the Grading Rules for Jarrah timber was made, and after adoption by the Standards Association of Australia was published as Bulletin 56.

A study was made at the small Dwellingup experimental mill into the moisture content of logs from trees which had been dead for some years.

It was found that the time taken for timber to reach a moisture content of 15% or less on oven dry weight was approximately the same; i.e. 4 to 5 months for boards sawn from standing dead trees, ground logs, or green trees. The following table illustrates this. The samples given are fairly typical of a number of pieces tested from each group.

Type of Log.	Log No.	Depth of Section.	Moisture Content.					
			30-8-48.	30-9-48.	30-10-48.	30-11-48.	30-12-48.	30-1-49.
Ground	1	4	29.4	30.2	24.4	15.8	15.3	11.6
	3	4	30.1	29.6	24.7	19.5	16.5	14.0
	3	9	43.7	40.0	27.0	19.7	17.1	13.9
	4	4	62.4	.....	34.6	20.7	16.9	13.9
	5	8	66.8	56.0	28.4	13.6	11.2	9.1
Standing Dead Trees	6	6	25.2	26.0	22.4	17.1	14.9	12.0
	8	4	17.4	23.2	17.8	14.7	13.5	11.8
	10	9	37.7	36.8	26.7	19.1	17.0	14.2
	10	13	22.8	21.0	20.4	16.4	14.4	12.1
Die Back Trees (2 years dead)	14	4	73.6	58.7	37.3	26.3	22.8	19.9
	14	8	65.8	39.6	20.6	13.0	10.9	9.2
Green Trees	16	4	93.7	70.3	33.7	14.7	12.5	10.2
	16	9	79.2	57.3	28.9	20.5	17.1	15.6

An investigation on the colouring matters in Eucalypts has been commenced by the Division of Forest Products in co-operation with the University of Western Australia. The first species studied is *Euc. regnans* because it is being used for newsprint and its colouring matter constitutes an existing economic problem. The colouring matters in timbers such as jarrah should form a promising field for study and will be investigated later.

STAFF.

The following staff changes were effected during the year:—

Mr. G. E. E. Brockway was appointed Assistant Conservator of Forests on the 1st January, 1949.

Mr. E. S. Budd was appointed Registrar on the 16th March, 1949.

Mr. W. H. Eastman was appointed Assistant Divisional Forest Officer on the 14th March, 1949.

Mr. A. Hatch was appointed Assistant Soil Survey Officer on the 14th March, 1949.

Mr. J. L. d'Espeissis was appointed Divisional Forest Officer at Pemberton on the 11th October, 1948.

Miss J. M. Sasse and Miss J. M. Vickery, Junior Comptometrists were appointed to the permanent staff in January, 1949.

Miss V. R. Congdon, who had been employed as a temporary junior typist, was appointed to the permanent staff on the 31st March, 1949. Messrs. J. C. Adams and D. H. Stitfold were appointed Junior Clerks on the permanent staff in February, 1949.

Mr. G. W. M. Nunn, Divisional Forest Officer, was transferred to head office in December, 1948.

Mr. P. H. Barrett, Divisional Forest Officer, was transferred to Kalgoorlie in January, 1949.

Mr. I. Harmsworth was appointed clerk in charge of stores on the 16th July, 1948.

Two esteemed officers were lost by the Department on the deaths of Mr. H. A. Williamson on the 22nd July, 1948, and Mr. W. Lockhart on the 21st November, 1948.

Mr. C. M. F. Hill, Chief Clerk, retired on the 15th December, 1948.

Forester A. Sears and Forest Assistant Donald Watson retired on the 29th November, 1948, and 1st June, 1949, respectively.

Four Assistant Foresters "B" Grade and one Forest Assistant were appointed.

LIST OF APPENDICES.

	Page.
No. 1 A Consolidated Revenue Fund, Statement of Revenue and Expenditure for the year ended 30th June, 1949	13
No. 1 B Statement of Reforestation Expenditure for the year ended 30th June, 1949	13
No. 1 C Statement of Afforestation Expenditure for the year ended 30th June, 1949	13
No. 2 A Exports of Timber, Tanning Substances, Sandalwood and Essential Oils during the year ended 30th June, 1949	14
No. 2 B Imports of Timber, Tanning Substances and Essential Oils during the year ended 30th June, 1949	16
No. 2 C Summary of Exports of Forest Produce since 1836	18
No. 2 D Summary of Imports of Timber, Tanning Materials and Essential Oils since 1848	19
No. 3 Timber Industry Regulation Act, 1926-37—Annual Report, 1948	20

APPENDIX 1A.

CONSOLIDATED REVENUE FUND.

Consolidated Statement of Revenue and Expenditure for the year ended 30th June, 1949.

DR.				CR.			
		£	s. d.	£	s. d.		
To	Log Royalties	116,536	7 3	By	Salaries	38,074	8 3
"	Sleeper Royalties	10,933	8 11	"	Incidentals	5,356	0 5
"	Sawn Timber Royalties	2,958	4 8	"	Timber Industry Regulations (Incidentals)	554	7 7
"	Miscellaneous Royalties	9,124	15 10	"	Pine Conversion	8,818	12 6
"	Goldfields Revenue	10,036	3 8	"	Firewood, Nos. 1 and 2 Pumps	33,883	16 9
"	Rents	1,271	19 4	"	Firewood (other) and Sundry Conversion Projects	3,558	4 1
"	Sandalwood Revenue	31,743	6 2		Total C.R.F. Expenditure	£90,245	9 7
"	Inspection Fees	3,016	8 3	"	Excess of Revenue over Expenditure	£148,111	1 8
"	Miscellaneous Sales	4,169	7 3				
"	Sales of Pine Timber	13,481	13 7				
"	Sales of Firewood	32,848	17 10				
"	Miscellaneous Receipts	2,185	18 6				
		£238,356	11 3			£238,356	11 3

APPENDIX 1B.

Statement of Reforestation Expenditure for the year ended 30th June, 1949.

DR.				CR.			
		£	s. d.	£	s. d.		
To	Division No. 1	1,156	19 0	By	Forests Improvement and Reforestation Fund—General Account	167,894	4 11
"	Division No. 2	10,247	1 10	"	Forests Improvement and Reforestation Fund—Motor Vehicle Depreciation Account	2,183	15 6
"	Division No. 3	32,738	15 10	"	Federal Aid Roads Grant	15,000	0 0
"	Division No. 4	13,440	8 11				
"	Division No. 5	22,084	13 7				
"	Division No. 6	25,082	1 9				
"	Division No. 7	8,501	12 5				
"	Division No. 9	1,403	2 7				
"	Division No. 10	11,397	18 4				
"	Division No. 11	13,286	10 5				
	Total Divisional Expenditure	£139,339	4 8				
"	Training of Staff	728	1 4				
"	Research and Investigation	1,310	17 8				
"	Preparation of Working Plans, etc.	2,389	13 6				
"	Salaries and Allowances	11,609	18 8				
"	General Sylviculture, Aboriculture, etc.	102	7 1				
"	General Equipment and Incidentals	5,735	14 1				
"	Motor Vehicle Depreciation	2,873	7 0				
"	Purchase of Fire Equipment	4,921	13 8				
"	Purchase of Tractors, etc.	8,039	2 6				
"	Pay Roll Tax unallocated	713	9 2				
"	Cash Orders unallocated	313	13 4				
"	Purchase of Motor Vehicles (from Depreciation Fund)	2,183	15 6				
"	Purchase of Land	4,817	2 3				
		£185,078	0 5			£185,078	0 5

APPENDIX 1C.

Statement of Afforestation Expenditure for the year ended 30th June, 1949.

DR.				CR.			
		£	s. d.	£	s. d.		
To	Division No. 1	9,271	0 6	By	General Loan Fund	29,995	8 3
"	Division No. 2	542	6 1				
"	Division No. 3	176	5 4				
"	Division No. 5	1,890	1 7				
"	Division No. 9	11,498	18 2				
"	Division No. 10	6,130	8 2				
"	Cash Orders unallocated	486	8 5				
		£29,995	8 3			£29,995	8 3

WESTERN AUSTRALIA.

APPENDIX 2A.

GOVERNMENT STATISTICIAN'S OFFICE.

* Exports of Timber, Tanning Substances and Essential Oils during the year ended 30th June, 1949.

Stat. Item No.	Item and Country of Destination.	Quantity.	Value.	Stat. Item No.	Item and Country of Destination.	Quantity.	Value.
6363	TIMBER. <i>Logs not Sawed—Jarrah—</i> United Kingdom	Cub. ft.	£				
		70	7				
6402	<i>Railway Sleepers—Hewn or Sawed—</i> Commonwealth States:			6641	TIMBER—continued. <i>Timber, Tongued or Grooved or Tongued and Grooved; Weatherboards—</i> Commonwealth States:	Cub. ft.	£
	Victoria	Cub. ft.	£		South Australia	3,080	970
	South Australia	14,521	3,332				
		491,374	117,619	6648	<i>Timber, Bent or Cut to Shape, Dressed or Partly Dressed—</i> Commonwealth States:		
	Ceylon	505,895	120,951		New South Wales		£
	Mauritius	34,709	17,354		Victoria	17	
	Union of South Africa	35,073	17,336		Northern Territory	1,578	
	Iraq	243,451	133,881		United Kingdom		1,650
	Persia	223,935	109,028				100
		103,162	46,863				1,750
6404	<i>Palms—</i> Commonwealth States:	No.		6649	<i>Timber, Dressed or Moulded, N.E.I.—</i> Commonwealth States:	Cub. ft.	£
	South Australia	5,380	110		South Australia	1,660	500
6409	<i>Sandalwood—</i> Ceylon	Cwt.			Northern Territory	445	324
	Hong Kong	260	3,116			2,105	824
	Malaya, British	509	5,985		Total Timber Exports		1,042,395
	Singapore	970	11,400				
	Burma	1,337	14,650				
	Italy	40	470				
		1	14				
		3,117	35,635				
6451-6489	<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> Commonwealth States:	Cub. ft.			WOOD MANUFACTURES.		
	New South Wales	Cub. ft.	£	6661	<i>Doors of Wood, Wholly or Partly Made Up—</i> United Kingdom		230
	Victoria	378	90				
	South Australia	337,072	78,413	6663	<i>Incubators: Foster Mothers and Brooders—</i> Malaya, British	No.	15
	Northern Territory	1,031,646	219,896		Singapore	2	35
		3,904	1,208			3	50
	United Kingdom	1,373,000	299,607	6679	<i>Articles of Wood (except Furniture), N.E.I.—</i> Commonwealth States:		
	Ceylon	255,360	119,124		New South Wales		£
	Mauritius	16,472	8,296		Victoria	505	
	Union of South Africa	25,792	8,349		Queensland	1,749	
	Belgium	180,485	65,500		South Australia	142	
	Netherlands	10,077	6,280		Northern Territory	1,232	
	Mozambique	2,012	1,260		United Kingdom		3,988
		2,015	1,002		Borneo, British		20
		1,865,213	509,418		Christmas Island		17
6551-6589	<i>Undressed, N.E.I.—Boards and Planks, Sawed, less than 2 in. in thickness—Hardwood—</i> Commonwealth States:				Malaya, British		59
	New South Wales	Cub. ft.	£		Singapore		10
	Victoria	2,143	735		United States of America		50
	South Australia	52,289	10,707				10
	Northern Territory	119,156	23,751				4,154
		1,400	334				
		174,968	35,527				
6605	<i>Plywood—Veneered or Otherwise—</i> Commonwealth States:	Sq. ft.		6690	<i>Furniture—</i> Commonwealth States:		
	New South Wales	Sq. ft.	£		New South Wales		£
	South Australia	17,096	627		Victoria	120	
		10,620	292		South Australia	132	
		27,716	919		Tasmania	60	
6615-6616	<i>Picture Frame Mouldings, Architraves, Skirtings and Room Mouldings—</i> Commonwealth States:	Lin. ft.			Northern Territory	5	
	South Australia	Lin. ft.	£		United Kingdom	1,468	
	Northern Territory	9,332	348		Ceylon		1,735
		4,326	55		Christmas Island		165
		14,158	403		Singapore		30
6617	<i>Pickets, Undressed and Dressed—</i> Commonwealth States:	No.			Siam		132
	South Australia	1,930	40		Yugoslavia		65
6627-6628	<i>Staves—Undressed, Dressed or Partly Dressed—</i> Commonwealth States:						8
	New South Wales	No.	£				20
	Victoria	63,959	6,076				2,205
	South Australia	10,000	1,250				6,839
		25,900	3,060				1,019,034
		99,859	10,386	1600	<i>Tanning Bark—</i> Commonwealth States:	Cwt.	
6630	<i>Timber—Cut to Size for Making Boxes—</i> Commonwealth States:	Cub. ft.			Victoria	6,255	4,993
	New South Wales	Cub. ft.	£		Ceylon	22	119
	Victoria	50	35			6,277	5,112
	South Australia	300	158	1610	<i>Tanning Extracts—</i> (Information not available for publication).		
	Northern Territory	192	118				
		459	182				
		1,001	493				

* Exports to Commonwealth States are of Western Australian origin and oversea exports are of Australian origin.

WESTERN AUSTRALIA.

APPENDIX 2A.—continued.

GOVERNMENT STATISTICIAN'S OFFICE.

* Exports of Timber, Tanning Substances and Essential Oils during the year ended 30th June, 1949—continued.

Stat. Item No.	Item and Country of Destination.	Quantity.	Value.	Stat. Item No.	Item and Country of Destination.	Quantity.	Value.
	ESSENTIAL OILS.		£				£
8221	<i>Eucalyptus</i> — Commonwealth States :			8239	<i>Essential Oils—Other—</i> Commonwealth States :		
	lb. £	lb.			lb. £	lb.	
	New South Wales 49,812 3,024				New South Wales 20,207 12,798		
	Victoria 2,836 241				Victoria 7,605 8,536		
		52,648	3,265		South Australia 395 440		
	Ceylon 112 32				Tasmania 14 17	28,221	21,791
	Kenya 112 28				United Kingdom 400 850		
	Hong Kong 112 28				Canada 400 200		
	New Zealand 9 6				Ceylon 22 37		
	Singapore 486 179				Kenya 72 106		
	Union of South Africa 6,781 1,299				Hong Kong 724 458		
	Brazil 448 224				Dominion of India 9,171 5,144		
	Philippine Republic 946 252				Malaya, British 6 5		
		61,654	5,313		New Zealand 164 100		
					Singapore 266 202		
8231	<i>Patchouli</i> — Commonwealth States :				Union of South Africa 9,233 12,081		
	lb. £				Burma 328 177		
	New South Wales 5 14				Egypt 397 207		
	Victoria 21 68				Italy 400 850		
		26	82			49,804	42,208
	United Kingdom 2,058 8,615				Total Essential Oils 49,804 42,208		
	Ceylon 3 13				Total Value of Exports shown on this Return 49,804 42,208		£1,129,541
	Singapore 50 28						
		2,137	8,738				
8234	<i>Sandalwood</i> — Commonwealth States :						
	lb. £						
	New South Wales 1,715 3,263						
	Victoria 280 420						
	South Australia 56 119						
		2,051	3,802				
	United Kingdom 1,840 3,927						
	Ceylon 218 458						
	Kenya 5 10						
	Hong Kong 3,222 7,508						
	Malaya, British 14 30						
	Singapore 960 2,187						
	Union of South Africa 28 60						
	China 85 185						
	Cuba 338 336						
	Siam 300 638						
		9,059	19,136				

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

WESTERN AUSTRALIA.

APPENDIX 2 B.

GOVERNMENT STATISTICIAN'S OFFICE.

Imports of Timber, Tanning Substances and Essential Oils during the year ended 30th June, 1949.

Stat. Item No.	Item and Country of Origin.	Quantity.	Value.	Stat. Item No.	Item and Country of Origin.	Quantity.	Value.
6301-6309	<i>Wicker, Bamboo and Cane, and all Manufactures of, N.E.I.—</i> Commonwealth States: £ New South Wales 25 Victoria 25 South Australia 62 Borneo, British Hong Kong India Malaya New Zealand Singapore France Indonesia Philippine Republic		£ 112 223 2,276 34 4,308 2 49 41 724 2	6551-6589	<i>Undressed, N.E.I.—Hardwood Boards and Planks, less than 2 in. in thickness—</i> Commonwealth States: New South Wales Cub. ft. £ Victoria 461 548 Queensland 1,520 436 Tasmania 46,947 22,577 Tasmania 12,821 4,271 Borneo, British Malaya Brazil Japan Switzerland	61,749 3,198 71 859 422 2	27,832 1,085 44 154 533 59
			7,771			66,301	29,707
	TIMBER.			6598	<i>Undressed, N.E.I.—Dunnage—</i> Brazil United States of America		129 5
6311-6389	<i>Logs not Sawed (including merely Hewn or Squared with the Axe)—Softwood and Hardwood—</i> Borneo, British New Caledonia	Cub. ft. 61,378 20,985	13,589 3,924	6601	<i>Veneers—</i> Commonwealth States: New South Wales Sq. ft. £ Victoria 162,841 3,396 Queensland 121,200 1,212 Tasmania 389,360 3,001 Tasmania 69,353 511	Sq. ft. 742,754	8,120
6401	<i>Undressed, N.E.I.—Spars in the Rough—</i> Canada	211	207	6605	<i>Plywood, Veneered or Otherwise—</i> Commonwealth States: New South Wales Sq. ft. £ Victoria 160,874 5,433 Queensland 18,180 710 South Australia 2,142,783 61,112 South Australia 6,871 423	2,328,708	67,678
6407	<i>Undressed, N.E.I.—Hickory—</i> United States of America	849	1,178	6611	<i>Timber, Bent or Cut into Shape—Broom Stocks—</i> Commonwealth States: New South Wales		676
6411-6449	<i>Undressed, N.E.I.—Softwood Beams, Baulks, Joists and Other Sawn Timber, N.E.I. (except Boards and Planks less than 2 in. in thickness)—</i> Commonwealth States: New South Wales Cub. ft. £ Victoria 427 304 Queensland 1,190 1,142 Tasmania 3,109 1,555 Tasmania 831 939 Borneo, British Canada Brazil Sweden United States of America	5,557 3,685 9,341 34,490 5,317 15,661	3,940 1,562 9,826 18,397 2,199 13,360	6613-6614	<i>Laths for Blinds and Laths, N.E.I.—</i> Commonwealth States: Victoria £ Queensland 804 Queensland 163 Canada		967 321
		74,051	49,274	6615	<i>Picture Frame Mouldings—</i> Commonwealth States: Victoria		16
6451-6489	<i>Undressed, N.E.I.—Hardwood Beams, Baulks, Joists and Other Sawn Timber, N.E.I. (except Boards and Planks less than 2 in. in thickness)—</i> Commonwealth States: New South Wales Cub. ft. £ Victoria 626 153 Queensland 712 618 South Australia 26,757 13,294 Tasmania 166 73 Tasmania 10,290 3,567 Borneo, British	38,551 665	17,705 280	6616	<i>Architraves, Skirtings and Room Mouldings—</i> Commonwealth States: New South Wales £ Victoria 920 Queensland 1,269 Queensland 38		2,227
		39,216	17,985	6631-6639	<i>Timber Cut to Size for Making Boxes—</i> Commonwealth States: New South Wales Cub. ft. £ Victoria 234 315 Victoria 5,468 5,477 South Australia 207 209 Sweden	5,909 125,683	6,001 67,932
6511-6549	<i>Undressed, N.E.I.—Softwood Boards and Planks, less than 2 in. in thickness—</i> Commonwealth States: New South Wales Cub. ft. £ Victoria 1,525 1,731 Victoria 830 186 Queensland 22,706 10,853 South Australia 2,613 3,137 Tasmania 13,338 4,437 Borneo, British Canada Brazil Sweden Switzerland United States of America	41,012 16,213 2,476 35,635 21,553 2 1,612	20,344 5,081 334 12,539 7,167 60 416	6641	<i>Timber Tongued or Grooved; Weatherboards—</i> Norway Sweden Sweden	1,348 19,723 21,071	645 9,146 9,791
		118,503	45,891	6648	<i>Timber Bent or Cut into Shape, Dressed or Partly Dressed, N.E.I.—</i> Commonwealth States: New South Wales		226
				6649	<i>Timber, Dressed or Moulded, N.E.I.—</i> Sweden	7,861	3,724
					Total Timber		329,568

WESTERN AUSTRALIA.

APPENDIX 2 B.—continued.

GOVERNMENT STATISTICIAN'S OFFICE.

Imports of Timber, Tanning Substances and Essential Oils during the year ended 30th June, 1949—continued.

Stat. Item No.	Item and Country of Origin.	Quantity.	Value.	Stat. Item No.	Item and Country of Origin.	Quantity.	Value.	
	WOOD MANUFACTURES.							
6655-6656	<i>Casks and Vats—</i> Commonwealth States : No. £ New South Wales 78 474 Victoria 765 2,576 Queensland 55 360 South Australia 3,466 17,969 Tasmania 3 22 Northern Territory 16 16 United Kingdom Singapore *Commonwealth of Australia 4,383 21,417 2 316 11 16 535 1,738 4,931 23,487	No.	£	6665-6667, 6676, 6678, 6679, 6679A, 6675	<i>Wood Manufactures, N.E.I.—</i> Commonwealth States : £ New South Wales 13,492 Victoria 39,664 Queensland 1,343 South Australia 5,316 Tasmania 486 Northern Territory 157 United Kingdom Ceylon India Malaya New Zealand Singapore *Commonwealth of Australia Belgium China Japan Poland Sweden Switzerland United States of America 60,458 5,219 1 3 8 141 257 4 13,088 3 1 5 12 3 4 79,207 233,416	£		
6658	<i>Clothes Pegs—</i> Commonwealth States : Gross £ New South Wales 775 318 Victoria 16,497 2,298 South Australia 74 24 Tasmania 11,400 2,281 Denmark Sweden 28,746 4,921 5,450 706 20,600 2,512 54,796 8,139	Gross	£					
6661	<i>Doors of Wood, including Fly Doors—</i> Commonwealth States : No. £ Queensland 8,187 14,598 South Australia 56 189 8,243 14,787	No.	£	8211-8239	<i>Essential Oils—Natural, Non-Spirituous—</i> Commonwealth States : £ New South Wales 27,595 Victoria 2,083 Queensland 1,148 South Australia 2,398 United Kingdom Bahamas Ceylon Hong Kong *Commonwealth of Australia Brazil China France Italy Madagascar Netherlands Indonesia Spain United States of America 33,224 242 2 182 159 16 1 731 4 1,499 3,074 4 7 4 3,824 42,926	No.	£	
6663	<i>Incubators, Foster Mothers and Brooders—</i> Commonwealth States : No. £ New South Wales 69 2,393 Victoria 1 38 70 2,431	No.	£					
6671-6674	<i>Tool Handles—</i> Commonwealth States : £ New South Wales 11,388 Victoria 2,329 Queensland 142 South Australia 168 Tasmania 1,302 United Kingdom United States of America 15,329 1,109 39 16,477		£					
6691-6699	<i>Furniture—</i> Commonwealth States : £ New South Wales 24,662 Victoria 18,765 Queensland 336 South Australia 38,037 Tasmania 906 Northern Territory 102 United Kingdom India Malaya New Zealand Singapore China France Italy Japan Sweden Switzerland United States of America 82,808 3,593 4 322 2 127 731 36 10 3 1,249 1 2 88,888		£	1601-1609	<i>Tanning Bark—</i> Commonwealth States : Cwt. £ South Australia South Africa 90 63 601 682 691 745 82,808 3,593 4 322 2 127 731 36 10 3 1,249 1 2 88,888		£	
				1611-1619	<i>Tanning Extracts—</i> Commonwealth States : New South Wales 63 134 Victoria 186 689 South Africa 249 823 2,970 7,094 3,219 7,917 88,888		£	
					Total Value of Imports shown on this Return		£622,343	

* 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	£	£ 37,600	£	£
1837	.....	.....	.....	1892	1,082,650	78,419	.....	42,870	.....	.....
1838	.....	.....	.....	1893	512,950	33,833	.....	32,160	.....	.....
1839	.....	.....	.....	1894	1,063,700	74,804	.....	28,430	.....	.....
1840	.....	.....	.....	1895	1,255,250	88,146	.....	30,833	.....	.....
1841	.....	.....	.....	1896	1,545,600	116,420	.....	45,800	.....	.....
1842	.....	.....	.....	1897	2,393,300	192,451	.....	49,480	.....	.....
1843	.....	.....	.....	1898	4,086,150	326,195	.....	31,812	.....	.....
1844	.....	.....	.....	1899	6,913,550	553,198	.....	29,719	.....	.....
1845	b	163	40	1900	5,725,400	458,461	.....	39,038	.....	.....
1846	.....	.....	.....	1901	7,150,600	572,354	.....	78,931	.....	.....
1847	2,550	255	320	1902	6,256,750	500,533	.....	61,771	.....	.....
1848	12,200	1,120	4,444	1903	7,748,450	619,705	.....	37,913	859	.....
1849	3,350	333	13,353	1904	8,072,300	654,949	.....	25,417	32,876	.....
1850	10,500	1,048	.....	1905	8,709,500	689,943	.....	38,817	154,087	.....
1851	.....	.....	.....	1906	c 8,830,700	708,993	.....	70,958	140,720	.....
1852	1,250	268	1,593	1907	c 6,409,550	511,923	.....	65,999	98,773	.....
1853	7,050	806	.....	1908	c 9,869,500	813,591	.....	76,668	79,934	.....
1854	52,200	5,220	.....	1909	c 10,830,450	867,419	.....	37,456	59,633	.....
1855	58,500	7,023	.....	1910	c 12,074,100	972,698	.....	70,775	98,733	.....
1856	76,900	12,076	.....	1911	c 12,449,500	986,341	.....	65,506	83,470	.....
1857	70,500	9,671	.....	1912	c 11,297,100	903,396	.....	27,533	49,094	.....
1858	69,200	9,449	2,624	1913	c 13,619,850	1,089,481	.....	47,589	47,377	.....
1859	29,250	2,340	7,455	1914 ^d	c 6,279,750	502,153	.....	39,800	18,197	5
1860	67,250	6,051	17,259	1915 ^e	c 9,968,500	808,392	.....	78,926	6,127	381
1861	54,800	4,932	16,360	1916 ^e	5,432,100	441,991	.....	61,331	10,208	1,102
1862	.....	.....	.....	1917 ^e	3,890,650	310,893	.....	72,669	18,959	2,060
1863	27,750	2,497	24,945	1918 ^e	3,436,250	274,141	.....	81,834	16,886	3,995
1864	68,800	7,151	21,541	1919 ^e	4,135,750	332,584	11,535	117,072	18,875	3,987
1865	32,900	2,963	25,265	1920 ^e	5,065,300	465,731	21,935	240,579	22,121	3,704
1866	58,300	5,508	24,520	1921 ^e	9,816,250	1,137,819	24,916	181,801	23,073	10,107
1867	183,950	15,693	13,490	1922 ^e	8,309,750	1,041,047	22,248	54,769	13,328	6,878
1868	85,650	6,849	23,722	1923 ^e	7,911,310	997,454	12,377	102,912	21,161	20,075
1869	56,750	4,541	18,442	1924 ^e	11,126,861	1,367,517	11,505	348,713	29,606	39,877
1870	8,000	638	26,045	1925 ^e	11,844,303	1,477,997	13,928	186,775	40,136	42,057
1871	179,900	14,273	32,998	1926 ^e	12,001,384	1,522,958	10,072	238,203	15,056	47,819
1872	157,200	17,551	48,890	1927 ^e	12,580,262	1,651,149	8,727	199,754	15,818	26,454
1873	.....	.....	.....	1928 ^e	10,384,784	1,265,333	7,783	147,426	27,662	39,131
1874	37,000	2,590	31,536	1929 ^e	7,635,237	960,435	6,603	225,208	35,850	63,307
1875	68,150	4,771	62,916	1930 ^e	6,579,743	807,425	4,687	22,228	40,628	77,510
1876	345,600	24,192	70,572	1931 ^e	4,127,856	507,382	26,615	43,790	35,333	56,170
1877	342,350	23,965	66,465	1932 ^e	3,062,673	361,700	35,488	40,546	42,016	59,301
1878	219,050	23,743	65,772	1933 ^e	2,235,540	262,617	30,332	38,846	33,352	26,331
1879	336,150	36,979	31,851	1934 ^e	4,060,830	487,248	76,107	75,424	20,904	26,720
1880	580,900	63,902	35,064	1935 ^e	5,326,117	636,466	65,494	66,474	15,284	35,393
1881	627,250	69,742	35,001	1936 ^e	5,598,180	679,522	50,665	44,916	12,237	27,526
1882	662,550	66,252	51,970	1937 ^e	5,673,903	699,684	52,338	75,070	14,491	38,135
1883	792,750	79,277	77,165	1938 ^e	7,545,744	932,420	47,934	22,384	13,865	35,128
1884	936,500	93,650	96,050	1939 ^e	5,704,250	722,310	43,518	34,571	17,842	25,550
1885	997,000	79,760	56,250	1940 ^e	5,049,585	634,859	62,796	41,596	19,485	47,736
1886	861,700	68,936	20,980	1941 ^e	6,091,187	790,876	74,935	47,613	13,686	59,867
1887	848,150	67,850	36,216	1942 ^e	5,224,634	700,474	64,454	17,481	6,896	74,904
1888	626,150	50,092	27,450	1943 ^e	3,516,566	605,327	32,426	80	1,598	70,253
1889	354,800	28,334	34,533	1944 ^e	3,645,354	613,994	25,324	.....	1,294	72,704
1890	525,750	42,060	33,525	1945 ^e	2,851,475	570,028	27,307	.....	2,795	103,055
1891	788,500	63,080	57,465	1946 ^e	3,373,025	722,061	f 2,616	7,584	4,872	128,050
1892	1,172,200	82,052	51,355	1947 ^e	3,458,628	865,255	f 13,118	100,616	12,056	151,768
1893	.....	.....	.....	1948 ^e	3,584,405	1,099,073	f 6,572	35,571	9,556	116,465
1894	.....	.....	.....	1949 ^e	3,198,212	993,152	f 6,639	35,635	5,112	75,395
TOTAL	381,622,898	41,279,504	1,001,174	5,554,700	1,496,921	1,618,920	.....	.....	.....	.....

^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.

APPENDIX 2.D.

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			1899	45,689		
1849				1900	56,266	1,416	1,105
1850	189			1901	80,134	1,740	1,546
1851	3,216			1902	97,810	3,418	1,751
1852	2,479			1903	102,383	3,556	1,348
1853	790			1904	157,856	1,322	2,122
1854	831			1905	98,494	582	1,592
1855	1,464			1906	95,229	1,412	1,915
1856	1,124			1907	122,016	2,767	1,549
1857	774			1908	93,205	2,392	4,584
1858	1,528			1909	90,502	4,129	4,003
1859	690			1910	171,280	3,531	3,686
1860	2,095			1911	152,133	2,912	4,938
1861	1,459			1912	167,244	3,089	4,598
1862	1,920			1913	202,640	2,651	5,392
1863	1,568			1914	78,736	629	2,823
1864	894			1914-15	107,763	2,082	4,988
1865	548			1915-16	76,849	3,313	4,788
1866	1,442			1916-17	75,681	2,848	3,484
1867	1,727			1917-18	58,305	2,020	4,358
1868	1,451			1918-19	62,824	1,181	4,168
1869	1,408			1919-20	100,083	3,748	10,043
1870	1,518			1920-21	171,654	*4,899	6,106
1871	736			1921-22	92,448	5,865	6,577
1872	1,660			1922-23	109,428	6,991	4,033
1873	1,008			1923-24	133,893	2,790	3,301
1874	1,774			1924-25	161,898	2,670	4,429
1875	2,707			1925-26	144,989	5,826	4,449
1876	3,098			1926-27	162,193	8,971	4,254
1877	2,036			1927-28	183,196	9,648	6,955
1878	2,947			1928-29	241,601	6,894	4,413
1879	2,340			1929-30	197,532	10,825	3,980
1880	3,061			1930-31	76,533	4,145	3,160
1881	3,639			1931-32	164,496	4,705	3,505
1882	3,692			1932-33	197,916	4,903	3,421
1883	6,667			1933-34	183,944	4,310	3,888
1884	2,930			1934-35	211,056	4,076	5,040
1885	11,479			1935-36	228,451	5,401	3,921
1886	17,888			1936-37	257,164	5,267	4,810
1887	8,136			1937-38	270,126	4,777	6,560
1888	4,461			1938-39	254,315	3,974	7,014
1889	7,686			1939-40	259,399	6,802	23,027
1890	14,979			1940-41	249,111	3,798	32,399
1891	18,406			1941-42	283,611	15,846	33,828
1892	26,713			1942-43	163,480	6,250	47,718
1893	14,493			1943-44	149,928	7,883	68,871
1894	17,964			1944-45	148,838	9,264	75,449
1895	47,128			1945-46	† 219,466	19,573	56,295
1896	5,381			1946-47	386,465	12,395	78,091
1897	164,552			1947-48	345,508	8,019	96,769
1898	55,566			1948-49	570,755	8,662	42,926
					8,995,222	256,167	719,970

* 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, 1926-37.

Annual Report for Year ended 31st December, 1948.

The number of mills operating under the provisions of the Act at the close of the year totalled 228 (107 Crown Lands, 121 Private Property). The average number of persons employed on timber holdings each month throughout the year was 3,629 as compared with 3,395 last year. The District and Workmen's Inspectors made 458 inspections of timber holdings and investigated and reported on 565 notifiable accidents, six of which were fatal.

The number of accidents per 100 persons employed was 15.7. The total period of incapacity as a result of accidents was 12,783 days, an average of 22.6 days per injured person (compared with 21.2 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 1948 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.