

1952.

WESTERN AUSTRALIA.

REPORT

ON THE OPERATIONS OF

THE FORESTS DEPARTMENT

FOR THE

YEAR ENDED 30th JUNE, 1952

BY

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CONSERVATOR OF FORESTS

PERTH:

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1952.

Forests Department,
Perth, 30th September, 1952.

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, 1952.

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, 1952

INTRODUCTION AND SUMMARY.

The year under review, 1951-52, was in many respects the most successful year in forestry since the passing of the Forests Act in 1918.

Revenue reached its highest level so far. Afforestation with pines and the harvesting of thinnings greatly exceeded previous totals. House building in forest settlements so vitally needed in Fire Control was given a marked impetus, and the construction and maintenance of roads and fire-lines was increased. Much needed additional equipment was obtained, and assessment and research covered a wide field. Further progress was made with the extension of fire control measures over the unprotected forests of the extreme South, though continued provision of funds is needed to ensure a sufficiently rapid rate of advancement. The Department is still, however, seriously short of experienced senior officers following upon losses during the war and subsequent years, and the greatly expanded activities of the Department since World War II.

The total value of forest products this year was estimated at a little more than £8,500,000.

Sawn timber production for the year under review 1951-52, was 14,717,112 cubic feet. This volume of sawn timber has never previously been exceeded.

It is of interest that, in a year of record high sawn timber production, exports from the State were the lowest percentage of the total cut for any year during this century, although the position was somewhat masked by an accumulation of stocks at the end of the financial year. By comparison with 1933, the year of lowest production, the figures were :—

	1932-33.	1951-52.
	Cubic ft.	Cubic ft.
Total Production	4,817,378	14,717,111
Exports	2,235,540	2,368,385
	Per cent.	Per cent.
Percentage exports	46.4	16.1

The Timber Industry in the past was largely dependent on exports demanding large dimension timbers and a comparatively limited market existed within Western Australia for the small scantling sizes. The post-war period saw an increasingly heavy demand from within the State and from the Commonwealth, and only a token export was permitted, to retain important overseas markets in a high quality commodity field.

Although timber production increased due to an improved employment position, most of the sawmills, particularly the big mills in the far South-West, are still below production capacity due to the shortage of skilled mill workers.

It is worthy of note that the very high timber output in 1926 caused so much concern that it led to the introduction of the General Working Plan for the regulation of the cut in the forest. The object of this plan was to provide, as far as possible, continuity of timber production which would ensure employment in the Timber Industry, the associated railways and the ports of Bunbury and Busselton. While in the year under review there was a record sawn timber output, the total timber production was much less than in 1926 when hewn sleepers were also produced. Sleeper hewing has now been replaced by the operations of sleeper mills. A record output of sawn timber from private property, exceeding four million cubic feet, also contributed to the high sawn timber output for the year, but only a short life exists for this source of supply, as there is virtually no private forestry.

The statistics for recent years, with earlier peaks, are as follows :—

Year.	Sawn Timber	No. of Mills.	Hewn Timber.	Total Sawn and Hewn Timber.
	Cub. ft.		Cub. ft.	Cub. ft.
1913-14	13,987,632	....	4,254,740	18,242,372
1925-26	14,522,733	....	6,277,952	20,800,685
1927-28	13,608,802	....	5,219,313	18,828,115
1937-38	11,720,652	134	2,573,540	14,294,192
1947-48	10,451,524	209	7,799	10,459,323
1948-49	10,478,975	228	4,744	10,483,719
1949-50	10,805,082	250	1,037	10,806,119
1950-51	12,571,635	265	1,183	12,572,818
1951-52	14,717,112	285	....	14,717,112

The total number of sawmills in the State, including 136 on private property, is now 285. There has been a continued increase in the number of sawmills and there is more sawmilling capacity in the State than the Jarrah and Karri forests can support continuously. Forty new mills were registered this year, and of these 31 were on private property. A high number of mills, 70, is now grouped within 25 miles of Perth, where the supplies of timber within economic hauling range are extremely limited.

A compensating factor is that, with the increased demand for scantling sizes, and the use of power saws, areas previously regarded as worked out for marketable timber have in recent years been cut again for low-grade logs and small logs, from which are derived a higher proportion of scantlings and fruit cases, and which make such logs economical to cut within to-day's price range.

In afforestation, 1,720 acres of pines, a much greater area than hitherto planted in one year, were established in 1951, chiefly at Gnangara. The ground has been prepared for a still greater planting, approaching 3,000 acres in the 1952 planting season, and part of this area was planted from June 1st in the year under review.

The mechanisation of the work in the forest and plantations has been greatly improved and includes the use of power saws in felling, a mechanical tree lifter in the nursery and planting machines for planting the pines. Further mechanisation of fire-fighting is constantly under investigation and review.

During the year an additional 47 houses and a number of other buildings were constructed. These houses are grouped in small forest settlements where the forest workers form the nucleus of the fire-fighting organisation.

The fire season was characterised by interference with early controlled burning by rains in the months of November and early December as recorded at the Dwellingup Forest Meteorological station. This was followed by 100 days of dry weather to 28th March, broken by only a fall of 27 points of rain on 24th January. At the suggestion of the Western Australian Government Railways Department, the Weather Bureau extended the Bush Fire Weather Forecasts to cover the wheat belt, on similar lines to those which have been followed for the past 17 years for the forest regions of the State. The Forests Department co-operated by providing meteorological information and check fire hazards based on wood cylinder moisture content readings from the Mallet Forest Headquarters in the Narrogin district.

A steady demand is now met from the Mallet plantations for small size mining timbers for firing sticks and lagging poles, enabling a financial return to be obtained from early thinnings.

Owing to a difficulty in finding contractors for the supply of firewood to G.W.S. Pumping Stations, the Forests Department expanded its organisation to supply wood from State Forests to No. 3 Station at Cunderdin and No. 4 Station at Nangeenan, as well as No. 1 and No. 2 Stations at Mundaring Weir. Approximately 30,000 tons of wood were supplied. The total firewood production for the State reached a peak of nearly one million tons.

Silvicultural research was continued with special attention to Jarrah forest soil problems and pine nutrition. Chemical methods of weeding nurseries were further developed. In the field of forest products research, co-operation with the Division of Forest Products of the C.S.I.R.O. has been continued. A study of shrinkage in timber from dead trees and logs showed that it follows much the same pattern during drying as green timber from living trees.

The State Nursery at Hamel produced a record number of plants during 1951, amounting to 212,200, about 40,000 of which went to local authorities and private persons. One hundred and thirty different species of trees were distributed. In the inland regions attention continued to be given to the establishment of arboreta, new areas were prepared at Newdegate, Lake Grace and Lake Camm, where land had been provided for the purpose. Kalgoorlie nursery, specialising in trees for inland planting, distributed 12,207 plants during 1951.

Attention has been given during the year to the danger of the introduction of the Sirex Wasp to Australia in imported timbers. A Commonwealth Committee consisting of the Chairman of the Commonwealth Tariff Board (Mr. J. B. Cumming), an entomologist (Dr. H. G. Andrewartha) of the Waite Institute of South Australia, and the Western Australian Conservator of Forests, was formed. This Committee has investigated the problem in the various States.

Royal Commissioner G. J. Rodger, Esq., appointed on the 14th March, 1951, to inquire into and report upon Forestry and Timber matters in Western Australia, presented his report to the Government during the year under review.

REVENUE.

The gross revenue of the Department for the year ended 30th June, 1952, was £481,497, as compared with £393,181 the previous year; this was the first time in the history of the Department that revenue had exceeded £400,000.

Royalties and Rents produced £292,767, which is an increase of £54,796 on last year's figure. There was an increase in revenue from Sandalwood to £54,195 compared with £49,170 last year.

Goldfields revenue decreased to £9,535 as compared with £9,738 for the previous year.

The amount of £134,555 collected under the heading of "Departmental" shows an increase of £28,315 as compared with last year, the major items this year being: Sale of Pine Logs, £24,188; Sale of Firewood, £60,854, and £36,276 from milled timber.

THE FOREST AREA.

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

The area of State Forest as at the 30th June, 1952, was 3,441,951 acres, an increase of 15,501 acres as compared with the acreage for the previous year. During the year additions totalling 16,648 acres were made to State Forest. This was mainly due to the inclusion in State Forest 33 of an area for pine planting. One thousand one hundred and forty-seven acres were excised during the year and reverted to the Lands Department.

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

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

APPLICATIONS FOR LAND.

During the period 1st July, 1951, to 30th June, 1952, the Department received, either through the Lands Department or direct, 229 applications covering a total area of 133,531 acres.

Of these applications 163, covering a total area of 92,926 acres, were referred to the Forest Officer-in-Charge of the district concerned for either a detailed inspection or for additional information, before making a recommendation.

SAWMILLING AND HEWING.

The production of sawn timber during the year showed an increase of over two million cubic feet as compared with the previous year. No hewing was recorded; only 1,183 cubic feet having been cut in the previous year. Forty new mills were registered during the year of which nine were on Crown Lands.

The log intake for the year was 40,880,868 cubic feet and the recovery of sawn and hewn timber was 14,717,112 cubic feet (36,104,486 and 12,572,818 respectively in 1950-51). Recovery percentages have been improved.

In spite of record production, the shortage of labour again prevented the large mills from cutting to their maximum capacity. A large mill at the Tone River is nearing completion.

Departmental plantations yielded 501,320 cubic feet of the 570,198 cubic feet of pine milled during the year, while species other than Jarrah and Karri accounted for nearly three million cubic feet of the total log intake. The intake of Marri (Redgum) was 301,655 cubic feet, as compared with 230,831 cubic feet for the previous year, and most of the "Other Species" showed an increased demand as compared with previous years.

Locally grown peeler logs totalled 118,049 cubic feet, the principal species being Karri (106,552 cubic feet) and Pine (11,447 cubic feet). Practically the whole of the supply of peeler logs came from State Forest and Departmental plantations.

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 4,708 for the year ended the 31st December, 1951, as compared with the average of 4,047 for the year ended 31st December, 1950.

TIMBER INSPECTION.

Sawn sleepers inspected during the year amounted to 1,335,386 cubic feet, while sawn timber other than sleepers submitted for inspection totalled 62,641 cubic feet.

The number of piles and poles inspected was 2,166, amounting to 61,027 lineal feet.

TIMBER INSPECTION.

Production of Timber for Year ended 30th June, 1952 (exclusive of Mining Timber, Firewood, Piles and Poles).

	MILL LOGS.				
	Jarrah.	Karri.	Other.	TOTALS.	
				In Log.	Recovery of Sawn Timber.
(1)	(2)	(3)	(4)	(5)	
Crown Lands	Cubic feet. 20,271,292	Cubic feet. 7,127,776	Cubic feet. 1,543,506	Cubic feet. 28,942,574	Cubic feet. 10,419,326
Private Property	9,702,962	879,798	1,355,534	11,938,294	4,297,786
Totals	29,974,254	8,007,574	*2,899,040	40,880,868	14,717,112

Figures in columns (1), (2), (3) and (4) are in the round based on Full Volume Measure.

Figures in column (5) are the volumes of Sawn Timber in the square.

* Comprises:—

1,160,555 cub. ft. Wandoo; 570,198 cub. ft. Pine; 460,151 cub. ft. Blackbutt; 301,665 cub. ft. Marri; 232,746 cub. ft. Tuart; 149,654 cub. ft. Sheoak; 20,101 cub. ft. Yellow Tingle Tingle; 1,601 cub. ft. Bullich; 604 cub. ft. Morrell; 529 cub. ft. Cadjuput; 498 cub. ft. Red Tingle Tingle; 738 cub. ft. Miscellaneous.

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.		
1950-51	Cub. ft. 7,845,852	Cub. ft. 982,685	Cub. ft. 185	Cub. ft. 3,270,015	Cub. ft. 473,083	Cub. ft. 998	Cub. ft. 12,572,818	£ *4,343,973
1951-52	9,363,216	1,056,110	....	3,859,271	438,515	....	14,717,112	6,105,922

* Note.—This figure was incorrectly quoted in the report for 1950-51 as 3,426,464.

TIMBER PRODUCTION, PLANNING AND DISTRIBUTION.

During the latter part of the year, shipment of sawn timber to the Eastern States or overseas, was reduced by the insufficiency of trucks and hauling power. At the end of the year it was estimated that Sawmillers had accumulated stocks of scantlings and sleepers amounting to about 12,000 loads. The figure of consumption of sawn timber within Western Australia, 247,000 loads approximately, usually determined by deducting shipments from total production, will therefore appear too high by the amount of this accumulation.

There has been a marked increase in the production of timber for seasoning during the year, naturally associated with increased production, but due partly to special cutting for this particular purpose and to some extent the diversion of cutting from shipping sizes to boards and joinery for stock.

A considerably increased sleeper production programme was drawn up providing for a greater number of sleepers to be supplied not only to the State Railway Service but to South Australia and the Commonwealth. In order to achieve the target figures laid down, it will be necessary to increase production of sleepers in sleeper mills and to revert to the cutting of sleepers in the general purpose mills, which for many years had concentrated on the production of house building sizes.

The subsidy on the road cartage of timber for distances of 100 miles and over operated throughout the year, as did the surcharge on all timber shipped out of the State.

Sleepers were removed from price control on the 7th March, followed by sawn timber on the 30th June.

FIREWOOD PRODUCTION AND CONSUMPTION.

1. Production for the State—	Crown Land.	Private Property.	Total.
	Tons.	Tons.	Tons.
(a) Domestic Firewood :			
Firewood Permits (South-West)	47,757	1,450	49,207
Mill Waste sold as Firewood	33,084	20,630	53,714
Domestic Uses on Goldfields	24,999	....	24,999
Total Domestic Wood as shown by Returns received	105,840	22,080	127,920
(b) Industrial Firewood :			
Direct Supply by Forests Department :			
Nos. 1 and 2 Pumps	19,768	....	19,768
Nos. 3 and 4 Pumps	6,282	....	6,282
Supplied by Petty Contractors :			
Nos. 1 and 2 Pumps	7,626	....	7,626
Supplies under Licence :			
Nos. 3-8 Pumps	38,385	....	38,385
Other Pumps	150	....	150
Factories, etc.	47,757	....	47,757
Mill Waste sold as Firewood	33,084	20,630	53,714
Mill Waste Used as Firewood	120,231	30,183	150,414
Total Industrial Firewood shown by Returns received	273,283	50,813	324,096
(c) Mining Firewood	184,972	....	184,972
Total Firewood Produced as shown by Returns received	564,095	72,893	636,988

2. Consumption—

Estimated Domestic	298,000	(at 2 tons per dwelling)
Industrial	435,111	(as given by Government Statistician)
Pumping Stations	72,211	(as per F.D. returns)
Mining	184,972	(as per F.D. returns)
	990,294	tons.

Approximately 56 per cent. of the total firewood consumed was supplied from Crown Lands.

A good reserve of firewood has been maintained at Nos. 1 and 2 Pumping Stations during the year. The Department has also supplied wood to Nos. 3 and 4 Pumping Stations during the year.

SANDALWOOD.

Difficulty was again experienced in obtaining sandalwood supplies, although the price to sandalwood getters was increased as from 1st July, 1951, to £26 per ton free on rails country sidings. There are indications, however, that more men are taking an interest in the industry.

Orders were placed for 670 tons of sandalwood logs and 30 tons of sandalwood pieces for export.

No orders were placed for sandalwood for oil distillation within the State.

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

Crown Lands—	Oil Distillation. Export.	
	tons.	tons.
Logwood .....	...	333
Roots and Butts	96*	...
Pieces .....	...	38
<i>Private Property—</i>		
Logwood .....	...	2
	<u>96</u>	<u>373</u>

* Severed from logs delivered for export.

The quantity of sandalwood exported during the year was 373½ tons, as compared with 362 tons for the previous year.

6,022 lb. of sandalwood oil were produced by local distillers during the year and 6,580 lb. were exported out of the State.

FOREST PRODUCE.

Piles and Poles totalling 320,184 lineal feet were obtained from Crown Lands, and records available show a total of 440,015 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 91 tons of Mallet bark and 24,174 tons of Wandoo for the production of tannin extract. Private property supplies were estimated at 534 tons of Mallet bark and 40,326 tons of Wandoo.

Mining timber in the round from Crown Land licenses and permits totalled 22,301 tons. Of this total the Department supplied directly 6,955 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 5,397 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, 1952.

Description of Forest Produce.	South-West Division and Agricultural Areas.		Northern Central and Eastern Goldfields.	Total.
	Crown Land.	Private Property.*	Crown Lands.	
Mining Timber	8,331	5,397	13,970	27,698 Tons
Sleepers for Goldfields Wood Lines .....	...	...	29,667	29,667 Cub. ft.
Charcoal	118	...	54	172 Tons
Piles and Poles	320,184	444,015	...	764,199 Lin. ft.
Fencing Posts and Rails	233,814	5,248	37,591	276,653 No.
Mallet Bark	91	534	...	625 Tons
Wandoo Timber for Tannin Extract	24,174	40,326	...	64,500 "
Boronia magastigma for distillation purposes	944	128	...	1,072 Lb.
Bean, etc., Sticks	20,480	...	5,175	25,655 No.
Stone	401	...	...	401 Cub. yds.
Sand	306	...	...	306 "
Eucalyptus Oil	715	...	...	715 Lb. "

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

FOREST OFFENCES.

One hundred and two forest offences were reported to Head Office during the year.

In five cases, proceedings were taken against the offenders. Fines totalling £54 and costs of £4 7s. were inflicted.

Warnings were issued in some cases and the remainder were dealt with by charging royalty, forfeiture of deposits, collection of damages, or the confiscation and sale of timber illegally cut.

The amount received by the Department in this way totalled £1,319 18s. 1d.

EXPENDITURE.

The total expenditure charged against Consolidated Revenue Fund amounted to £194,879. This included :—

	£
General Administration of the Forests Act and Regulations	69,068
Administration of the Timber Industry Regulation Act	3,201
Pine Conversion	29,431
Firewood and other District Conversion Projects	93,179
	£194,879

FORESTS IMPROVEMENT AND REFORESTATION FUND.

	£	s. d.	£	s. d.
Balance—1st July, 1951			459	10 1
Three-fifths Net Revenue			188,651	9 1
Treasury Grant			114,000	0 0
Commonwealth Aid Roads			39,246	4 4
Direct Credits			7,066	9 8
			349,423	13 2
<i>Less Expenditure—</i>				
General Account	308,294	6 3		
Commonwealth Aid Roads Grant	39,246	4 4		
			347,540	10 7
Balance at 30th June, 1952			£1,883	2 7

APPORTIONMENT OF NET REVENUE OF DEPARTMENT.

	£	s. d.	£	s. d.
Gross Revenue for Year 1951–1952			481,497	3 3
<i>Less Revenue from Firewood, etc.</i>			66,702	19 10
			414,794	3 5
Consolidated Revenue Fund Expenditure	194,879	6 2		
<i>Less Expenditure on Firewood</i>	93,178	11 1		
			101,700	15 1
<i>Less Timber Industry Regulation Salaries and Incidentals</i>	3,201	9 10		
			98,499	5 3
Salary of Conservator			1,755	15 10
Audit Fee			120	0 0
			100,375	1 1
Net Revenue			£314,419	2 4
Three-fifths of Net Revenue credited to the Fund during the Year 1951–1952			£188,651	9 1

REFORESTATION.

The total area of Jarrah and Karri on Crown Land and State Forest cut over during the year amounted to approximately 90,000 acres. Over half of this area was 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 over 30,000 acres received this treatment.

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

The road and track system upon which management and protection to a large extent depends was increased to a total of 13,091 miles by the addition of 380 miles. Maintenance grading covered 3,345 miles.

ROAD CONSTRUCTION AND MAINTENANCE.

Main Forest Divisions.

Division.	Construction Maintenance	
	Miles.	Grading Miles.
Mundaring	7	289
Dwellingup	11	889
Collie	52	277
Kirup	49	858
Manjimup	38	220 (Estimated)
Narrogin .....	...	115
Harvey	18	352
Pemberton	205	286
	380	3,286

In addition, considerable mileages of grading were carried out within plantations and 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 47 houses, bringing the total to 294 residences apart from single men's quarters.

AFFORESTATION.

Pine Plantations.

The total area of pine plantations is now 15,148 acres.

During the year under review, 1,720 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. Planting machines towed by tractors have proved satisfactory after adjustment to meet local conditions, and are now in use at two plantations.

One thousand four hundred acres of pine in existing plantations were pruned.

Mallet.

The mallet plantations now total 18,189 acres.

In the course of thinning, 10 tons of bark was produced, and mining timber was cut for the Murchison Goldfields.

PRODUCTION OF PINE LOGS.

The total production of logs from pine plantations was 501,320 cubic feet, of which 170,082 was milled at Departmental sawmills, and the balance sold as logs, including 11,052 cubic feet of selected logs for peeling for plywood manufacture.

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 only a skeleton staff maintained. For the year under review, 47 houses were completed and 38 more were under construction. In addition, materials were being accumulated for the commencement of another 54.

FIRE CONTROL.

A total of 324 fires were attended by Departmental gangs as compared with an average of 342 for the previous ten years.

For the most part the fires were confined to small areas, but four large fires accounted for 70 per cent. of the fire loss in the zone of intensive protection. The number of fires arising on private property and requiring attention by Departmental gangs was 103, the greatest number from any single cause this year.

A total of 1,268 miles of fire break belts were burnt, and buffer strips and areas of dangerous hazard of nearly 150,000 acres were burnt. Top disposal and advance burning brought this total of broadcast burning to 228,000 acres.

Mill villages, forest settlements and isolated schools in the forest were burnt around as a protection against uncontrolled fires, and assistance and advice were given to numerous bush fire brigades and progress associations in connection with protective burning around villages and farms.

Twenty-seven fire towers or look-out trees were manned during the fire season at a cost of £8,000.

A new lookout on Mt. Burnside was manned for the first time this season and gives cover to a large area of forest in the extreme South-West which is being brought under protection. Three more lookout trees have been selected and pegged, and will be in use next season. Generally the lookouts gave adequate facilities for fire protection.

Departmental gangs attended 324 fires. Twenty thousand two hundred and eighty-one acres of intensively protected forest were burnt over.

The causes of fires were as follows:—

W.A.G.R. Locos	....	....	....	....	....	13
Mill Locos	....	....	....	....	....	48
Escapes from Control Burning	....	....	....	....	....	21
Bush workers	....	....	....	....	....	6
Bush navvies	....	....	....	....	....	3
Hunters and Fishers	....	....	....	....	....	29
Householders	....	....	....	....	....	2
Private Property	....	....	....	....	....	103
Firewood cutters	....	....	....	....	....	4
Travellers	....	....	....	....	....	16
Lightning	....	....	....	....	....	6
Deliberately lit	....	....	....	....	....	41
Children	....	....	....	....	....	6
Mill surroundings	....	....	....	....	....	3
Other Government employees	....	....	....	....	....	4
Previous fires	....	....	....	....	....	3
Unknown	....	....	....	....	....	16

324

One of these fires burnt around and up to the forest boundary for a length of 10 miles, but broke through in one place.

Once again the greatest individual cause of fires was "escapes from private property" with 103 out of 324, or over 30 per cent. The three largest of these fires accounted for 53 per cent. of the total area burnt in the intensively protected zone of the forest, besides burning many acres of other forest and private property.

The help of the local bush fire brigades co-operating in many districts with Departmental gangs was of considerable value in forest fire control.

Mill locomotives were responsible for 48 fires, and although for the most part these fires were confined to small areas by prior protective burning, this year two fires started by bush locos escaped into the forest and burnt over a considerable area. Incendiarism accounted for 41 fires during the year under review, all but seven of them in the Collie District. Most were confined to small areas but four groups of fires were responsible for the loss of over 4,000 acres of forest. Every effort was made to apprehend the culprits. It is rarely the deliberate incendiary who cause major trouble in the forest and they are usually quickly apprehended, but so far the incendiary at Collie have escaped detection despite the help of the Police Department.

A regulation requires all sawmills operating on Crown Lands to take minimum precautions to prevent the outbreak and spread of fire within the mill, and charges the fire control organisation of the Department with policing the regulation. There are 145 sawmills affected by these provisions and besides the routine checking by the field staff, over 400 detailed inspections of sawmill fire control precautions were carried out by the Departmental fire control establishment. In some of the larger mills fire fighting organisations have been developed using mobile power pumps and other equipment modelled largely on Forests Department equipment.

Crawler tractors, using either a bulldozer blade in the case of the larger units, or pulling heavy scrapers, once again proved their worth in fire suppression, saving many man hours of gruelling labour and releasing trained fire fighting personnel for the all important task of directing the efforts of untrained auxiliary fire fighters.

Considerable attention was given to the training of supplementary fire fighters from outside the Department, and now several well trained gangs exist in the farming and timber industries available to assist Departmental gangs.

Under the provisions of Section 35A of the Bush Fires Act, forest officers are called upon to inspect the bush fire control organisation of Local Authorities who desire to obtain the 25 per cent. rebate of crop insurance premium provided for in the Act.

This inspection is a continuing one to ensure that areas already approved maintain their standard of efficiency. Advice is given on requirements and the latest improvements in equipment and technique.

Once again the members of the timber industry generally gave full co-operation to the Department in fire fighting. Men and equipment were always available, even when it meant the closing down of a mill. This assistance is greatly appreciated.

COMMUNICATIONS.

The activities of the Radio Branch of the Department were mainly directed to the overhaul of the Departmental telephone system, the maintenance of which had been low in the War and post-War years. Nearly 400 telephones have now been completely overhauled and rewound to improve the performance of our bush lines, which now total over 1,300 miles.

A commencement was made to standardise telephone switchboards in Divisional and District offices. To date 22 switchboards have been made up. A feature added to these switchboards is a third position of the line switch, its function being to disconnect the bell and telephone from the line when the board is unattended.

The Radio organisation during the 1951-52 Fire season functioned well. During the year commencement was made with the establishment of a central Radio Station to provide communication from Perth with the Departmental forest network. There are now 12 fixed and 61 mobile stations available in the network.

WORKING PLANS.

Collection and study of data for the 1954 revision of the General Working Plan and Sleeper Working Plan proceeded during the year, in conjunction with air photo interpretation of the areas of the far South.

By arrangement with the State Mapping Committee, 3.5 million acres were flown to produce photos at a scale of approximately 20 chains to 1 inch, of which 1.6 million acres were State Forest and timber reserves, thus providing sufficient photos for the existing A.P.I. staff for some years.

Type maps were prepared for 516,000 acres, and a commencement made on a further project of 365,000 acres. Sketch maps from mosaics covered a further 386,000 acres. Mosaic studies of further areas of potential State Forest and plantations were made.

The life of each permit was re-estimated based upon previous figures, together with the balance of the area uncut, the estimates of the local officer, and assessments available since the original work in 1920. Permanent assessment lines and quarterly assessment lines contributed to this revision.

The measurement of permanent assessment lines received an impetus, and 140 miles were permanently pegged and measured with a view to future growth studies and for assessment figures for Working Plan use.

Forest areas, tenure, and estimated loadages were summarised for the South-West Zone for the information of the Royal Commission, and the Australian Forest Inventory.

A statement for the Empire Forestry Conference, 1952, was completed. Several new sections of the Forester's Manual, together with an index, are in preparation by the Management Branch.

Estimates were commenced of pine thinnings available for peeler logs and a Firewood Working Plan is in course of preparation for the Northern areas of the Jarrah forest.

The Pine Planting Working Plan of 1950 has been successfully carried out to date.

Pine Plantations received further study, and a number of contracts for the sale of thinnings on the basis of Working Plan proposals prepared in 1950 were sold. Each plantation is being provided with an air photo mosaic.

ARBORICULTURE.

The demand for trees from Local Authorities and private individuals remained steady and resulted in the sale from the State Nursery at Hamel of 39,800 trees which were covered by 717 orders. From the Kalgoorlie Nursery 12,207 trees were despatched.

Figures for distribution of species show that River Gum and Coral-flowered Gum constituted nearly 25 per cent. of the total distribution from the Kalgoorlie Nursery, while Sugar Gum, *Pinus radiata* and Victorian Ti-tree were popular from Hamel.

One hundred and thirty different species of trees were available for sale.

From Kalgoorlie trees were despatched to inland areas as follow :—

Wheat Belt—		
Individual farmers	.....	4,755
Arboreta	.....	2,070
Road Boards	.....	1,852
Schools and Parents' and Citizens' Associations	.....	690
Gold Mines	.....	550
C.W.A.	.....	356
Agricultural Research	.....	151
Pastoral Areas	.....	115
		10,539
Local—		
Road Boards	.....	660
Gold Mines	.....	415
Local Boards	.....	186
Householders	.....	172
Schools and Parents' and Citizens' Associations	.....	121
Sporting Bodies	.....	114
		1,668
		12,207

Arboreta.

In the wheat belt areas, attention continued to be given to establishment of arboreta.

Since 1949 arboreta have been established at Mullewa, Morawa, Yuna, Moora, Watheroo, Mingenew, Southern Cross, Bruce Rock and Kulin.

New centres are being established at Newdegate, Lake Grace and Lake Camm, where the ground has been prepared for planting this winter. In addition to the above, trees have been supplied for experimental planting to the Cunderdin and Merredin Road Boards and to Narembeen.

EMPLOYMENT IN FORESTRY.

The number of wage earners directly employed in the forest totals approximately 9,069, made up of :—

Registered fallers, haulers, etc.	.....	1,123
Firewood cutters, pole getters, etc., on permits	.....	544
Sandalwood getters	.....	19
Goldfields firewood cutters, contractors and wood-line employees	.....	850
Direct Employees of the Forests Department :—		
Head Office	.....	69
Field Staff	.....	95
Wages employees	.....	542
Contractors and employees (estimated)	.....	100
		806
Sawmill employees at June, 1952	.....	5,667
Apiarists, estimated (81 sites are registered)	.....	60
		9,069

RESEARCH.

1. *Dead Log Studies.*

Three years ago the Department carried out a series of trials to determine the moisture content and drying rate of timber from "dead logs" and showed that it was incorrect to speak of dead logs as dry logs. The data was published in the Report for the year 1949.

The impression was held, however, by some timber operators that material from dead logs shrinks considerably less after cutting than timber from green trees. An investigation was commenced to determine whether this was in fact so, since it could well be an important factor in the utilisation of Jarrah. Consideration was given to the possibility that, if this was so, it may have been influenced to a degree by the release of growth stresses during the long time the tree had been dead.

The investigation, therefore, aimed to examine the comparative shrinkages in the four classes of material :—

- Timber from ground logs.
- Timber from standing old dead trees.
- Timber from standing recently dead trees.
- Timber from green trees.

In general the results have shown that over the same moisture content range the behaviour is similar in all types of timber, that is the shrinkage of dead tree timber is generally in conformance with that of timber from green trees. The accompanying tables show that shrinkage per cent. based on size when cut shows much the same trends in drying throughout all classes of material and falls within the range of shrinkage of normal green wood.

MEAN SHRINKAGE FOR PERIODS OF ONE MONTH AND TWELVE MONTHS.

TYPE OF LOG.	TANGENTIAL.				RADIAL.			
	6 in. x 1 in. boards.		3 in. x 3 in. pieces.		6 in. x 1 in. boards.		3 in. x 3 in. pieces.	
	One month.	Twelve months.	One month.	Twelve months.	One month.	Twelve months.	One month.	Twelve months.
	%	%	%	%	%	%	%	%
Standing Dead Logs—								
Minimum	0.6	3.4	0.5	2.9	1.1	3.3	0.4	2.4
Maximum	2.1	4.9	1.9	5.9	2.3	4.3	1.0	3.5
Ground Logs—								
Minimum	1.1	3.3	1.0	4.2	1.4	3.7	1.1	2.1
Maximum	3.1	6.0	2.1	6.2	1.9	3.9	1.4	5.5
Recently Dead Logs—								
Minimum	....	....	1.1	4.7	2.9	5.7	1.0	3.5
Maximum	....	....	1.4	5.1	3.4	6.2	1.2	4.2
Green Logs—								
Minimum	0.6	4.6	1.8	6.1	0.4	3.0	1.0	3.9
Maximum	1.0	5.2	2.0	7.3	1.1	4.0	1.3	4.0

DEAD LOG STUDY—MOISTURE CONTENTS.

Showing Minimum and Maximum at time of Cutting and twelve months later.

Type of Log.	Original Moisture Content at time of Cutting.				Moisture Content after 12 months.			
	6 in. x 1 in. board.		3 in. x 3 in. board.		6 in. x 1 in. board.		3 in. x 3 in. board.	
	M.C.	Depth of Sample*.	M.C.	Depth of Sample*.	M.C.	Depth of Sample*.	M.C.	Depth of Sample*.
	%	Inches.	%	Inches.	%	Inches.	%	Inches.
Standing Dead—								
Minimum	21.1	5	22.1	4	8.7	12	9.8	4
Maximum	65.5	12	73.2	12	14.8	6	14.3	9
Ground Dead—								
Minimum	26.7	4	25.5	6	7.1	4	8.7	5
Maximum	75.0	8	56.75	11	15.0	8	12.3	6
Green—								
Minimum	68.5	8	68.5	7	10.1	8	9.8	7
Maximum	74.6	4	71.5	6	11.7	4	11.7	6
Recently Dead—								
Minimum	49.5	7	67.5	8	7.2	7	12.8	5
Maximum	69.25	8	70.6	5	12.1	4	14.2	8

* Depth of sample in inches from outside of log.

2. *Timber Preservation.*

Field research into the behaviour of Western Australian timbers under severe conditions was continued. This involved such projects as the use of creosoted sleepers and the treatment of various species of non-durable timbers as fence timbers. The work was carried out in co-operation with the W.A. Government Railways, and with private sawmillers. Treatment of pine timber, for the prevention of blue mould and termite attack was initiated and tests were continued in order to evaluate more accurately the importance of various defects in timber.

Much valuable data has already been gained and these projects will be continued.

3. *Pine Plantations.*

Although juvenile disorders have been successfully treated in most instances by the use of super-phosphate or zinc, other disorders have occurred at a later age, and investigations into these disorders and corrective measures are proceeding.

The study of the forest complex has been extended by preliminary examinations of the populations of fungi, insects and bacteria respectively in the surface soil.

The expansion of afforestation with pines in Western Australia underlines the importance of attention to the possibility of introduction of forest pests. The plantations have so far been singularly free of insect pests and fungi diseases, but the recent importation into Australia of timbers with the bark beetles *Ips* and *Hylastes* and the wood-borer, *Sirex*, has drawn attention to the opportunities afforded for the establishment of these and fungal pests.

Several injurious introductions have already been made into other parts of Australia, and for this reason increased attention is being given in Western Australia forests to insects and fungal diseases.

A fungus or an insect might quickly reach dangerous proportions and, because of the great expanse of forests, the direct control of forest diseases is more difficult than is normally the case with diseases and pests in agricultural crops.

In co-operation with forest authorities in Australia and in Europe, the collection of insect predators will probably become an important early step with increasing emphasis on forest hygiene and the breeding of resistant strains.

Nursery technique has been further studied in the past year and the use of aromatic kerosenes in weeding has effected appreciable saving in costs. The germinative capacity of *Pinus pinaster* seed and the quality of the planting stock have been increased by the development of an improved winnowing technique.

Biological control of nursery soils involving adjustment of soil acidity is being developed to counter various fungal attacks on nursery seedlings. Increased attention has been given to hygienic procedure in pine nurseries.

4. *Eucalypt Forests.*

Over the last decade increased attention has been focussed on the importance of soil macro- and micro-flora in relation to the return of litter and air-borne nutrients to the soil, and exchange by symbiosis. Work is being done on these aspects insofar as they refer to neutral forests.

Samples have been taken in the Jarrah forest from the aspect of fire effect on soil populations and fertility. Measurements of the leaf and litter fall in the forest have been undertaken and analyses made of the plant nutrients contained in the fall.

Direct control by the application of major plant nutrients, trace elements and synthetic hormones, has been initiated with a view to improving the condition of the forest crop.

STAFF.

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

T. N. STOATE,
Conservator of Forests.

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APPENDIX 1A.

CONSOLIDATED REVENUE FUND.

Consolidated Statement of Revenue and Expenditure for the year ended 30th June, 1952.

DR.			CR.		
	£	s. d.		£	s. d.
To Log Royalty	246,006	9 1	By Salaries	59,814	12 11
„ Sleeper Royalty	13,345	14 3	„ Incidentals	11,349	3 1
„ Sawn Timber Royalty	2,290	3 7	„ Timber Industry Regulations (Incidentals)	1,105	13 2
„ Miscellaneous Royalties	20,070	13 6	„ Pine Conversion	29,431	5 11
„ Goldfields Revenue	9,535	7 3	„ Direct Conversion	93,178	11 1
„ Rent	1,519	1 0			
„ Sandalwood	54,194	10 2	Total C.R.F. Expenditure	194,879	6 2
„ Inspection Fees	2,346	17 3			
„ Miscellaneous Sales	6,807	19 2	„ Excess of Revenue over Expenditure	286,617	17 1
„ Sales of Pine Logs	24,187	15 0			
„ Sales of Mill Timber	36,275	10 10			
„ Sales of Firewood	60,853	18 7			
„ Miscellaneous Receipts	4,063	3 7			
	£481,497	3 3		£481,497	3 3

APPENDIX 1B.

Statement of Reforestation Fund Expenditure for the year ended 30th June, 1952.

DR.			CR.		
	£	s. d.		£	s. d.
To Division 1—			By Forest Improvement and Reforestation		
Busselton		79 10 2	Fund—General Account	308,294	6 3
„ Division 2—			„ Commonwealth Aid Roads Grant	39,246	4 4
Administration	893 11 4				
Mundaring	13,469 16 11	14,363 8 3			
„ Division 3—					
Administration	5,121 14 8				
Dwellingup	54,656 11 11				
Research Station—Dwel-					
lingup	3,935 8 4				
Glencagle	6,417 16 5	70,131 11 4			
„ Division 4—					
Administration	3,196 5 2				
Collie	38,038 19 2	41,235 4 4			
„ Division 5—					
Administration	3,158 14 1				
Kirup	43,390 18 9	46,549 12 10			
„ Division 6—					
Administration	5,191 11 8				
Manjimup	46,001 6 9				
Denmark	1,140 16 2	52,333 14 7			
„ Division 10—					
Administration	2,146 8 1				
Harvey	29,456 0 6	31,602 8 7			
„ Division 11—					
Administration	4,374 10 9				
Pemberton	47,440 3 10	51,814 14 7			
Total Divisional Ex-					
penditure		308,110 4 8			
„ Training of Staff		320 5 4			
„ Preparation of Working					
Plans, etc.		5,843 0 5			
„ Salaries and Allowances—					
Head Office		12,804 2 9			
Incidentals		7,890 16 11			
„ Communications and Elec-					
trical Services		4,035 17 6			
„ Equipment not charged to					
Divisions		3,878 9 10			
„ Purchase of Land		3,246 17 3			
„ Pay Roll Tax		1,183 5 10			
„ Cash Orders Unallocated		227 10 1			
		£347,540 10 7		£347,540	10 7

APPENDIX 1E.

FIREWOOD PRODUCTION AND CONVERSION PROJECTS, 1951-52.

Item.	Mundaring Purups, Firewood.	Dwellingup.	Harvey.	Head Office.	Ludlow.	Mundaring.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
53. Buildings	430 19 11					
54. Water Supply	94 14 9					
56. Wood-cutting Wages—Daywork	4 7 10	19 2 4				103 15 2
57. Wood-cutting Wages—Piecework	30,908 1 7					3 8 9
58. Purchases—Petty Contractors	19,071 15 11					240 2 1
59. Carting—Wages		30 11 5				
60. Carting—Contract	24,661 1 4	85 9 3				2 13 6
61. Railway Freights		27 9 2				
62. Leave Payments	2,846 4 2		96 10 11		25 18 9	
63. Workers' Compensation Premiums	1,000 3 2	1 0 0	7 9 6		9 17 2	4 11 1
64. Road Construction—Access Roads	240 12 1					
65. Road Maintenance—Access Roads	1,403 17 5					
68. Tools and Equipment—Purchases	347 3 5					
71. Controlled Burning	1 19 10					
72. Supervision and Clerks	1,081 11 10					
73. Upkeep, Horses	4 4 6					
74. Upkeep, Motor Vehicles	940 7 6	15 2 2	1 13 7			
75. Camp Maintenance	150 7 8					
77. Consumable Stores	18 3 1					
78. Freights and Cartage—Sundry	528 0 11					
79. Fares and Transport	98 10 11					
81. Camp Sanitation	14 9 5					
82. Pay Roll Tax	843 11 11	15 6	8 6 0		18 19 5	2 2 6
83. Special Services	136 10 2					
85. Carinyah-Ashendon Road (F.A.R.G.)	2,728 7 7					
91. Blankets and Tools for Re-sales				225 6 7		
93. Assistance to Sawmills—Falling, etc.						
99. Miscellaneous Jobs		2,325 17 7	803 13 1		4 9 8	
102. Purchase—Motor Vehicles	2,220 5 6					
	89,775 12 5	2,505 7 5	907 13 1	225 6 7	99 5 0	356 13 1
Cash Order Account	Cr. 939 18 8			Dr. 248 12 2		
	£88,835 13 9	£2,505 7 5	£907 13 1	£473 18 9	£99 5 0	£356 13 1

Total Expenditure, No. 1 Account £ s. d.
 Total Expenditure, No. 2 Account 88,835 13 9
 4,342 17 4
 £93,178 11 1

APPENDIX 2A.

WESTERN AUSTRALIA.

* Exports of Timber, Tanning Substances and Essential Oils—Year ended 30th June, 1952.

Item and Country of Destination.	Quantity.	Value	Item and Country of Destination.	Quantity.	Value
		£A.			£A.
<i>Wicker, Bamboo and Cane, and all Manufactures of N.E.I.:</i>			<i>Undressed, N.E.I.—Boards and planks, Sawn, less than 2 in. in Thickness—Hardwood:</i>		
Commonwealth States: £			Commonwealth States: ... Cub. ft. £		
Queensland 45			New South Wales 1,836 792		
Northern Territory 9			Victoria 19,755 7,308		
		64	South Australia 64,720 23,766	86,311	31,866
TOTAL, WICKER, BAMBOO AND CANE MANUFACTURES		54	United Kingdom	86,311	31,866
			South Africa, Union of	65,098	43,713
				3,595	1,923
				155,004	77,502
TIMBER.			<i>Veneers:</i>		
<i>Railway Sleepers—Hewn or Sawn:</i>	Cub. ft.		Commonwealth States	sq. ft.	
Commonwealth States:			New South Wales	28,160	807
South Australia 623,103 241,690					
United Kingdom 18,116 10,527			<i>Plywood—Veneered or Otherwise:</i>		
Malaya, Federation of 6,271 3,094			Commonwealth States:		
South Africa, Union of 8,123 4,157			South Australia 13,689 1,258		
	655,613	259,468	France 12 7		
<i>Palings:</i>				13,701	1,265
Commonwealth States:	No.		<i>Staves—Undressed, Dressed or Partly Dressed:</i>		
South Australia 2,660 70			Commonwealth States: Cub. ft. £		
			New South Wales 8,223 10,102		
<i>Sandalwood:</i>	cwt.		Queensland 690 1,131		
Ceylon 340 4,017			South Australia 2,264 2,356	11,177	14,089
Hong Kong 1,800 21,940					
Malaya, Federation of 2,340 26,192			<i>Timber—Cut to Size for Making Boxes:</i>		
Fiji 280 3,152			Commonwealth States: Cub. ft. £		
Singapore 1,880 21,200			New South Wales 3,739 2,192		
Burma 480 5,487			Northern Territory 282 162	4,071	2,354
	7,120	81,988			
<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>	Cub. ft.		<i>Timber, Tongued and Grooved and Tongued or Grooved; Weatherboards:</i>		
Commonwealth States: Cub. ft. £			Commonwealth States: Cub. ft. £		
New South Wales 16,467 8,943			New South Wales 63 46		
Victoria 288,578 110,129			Victoria 1,086 377		
Queensland 224 200			Queensland 147 69		
South Australia 939,425 362,549			South Australia 18 7		
Northern Territory 10,453 4,880				1,314	499
United Kingdom 1,255,147 486,701			Christmas Island 377 687		
Christmas Island 179,542 118,404			Cocos Island 14 85		
Cocos Island 3,801 2,631					
Mauritius and Dependencies 753 357					
South Africa, Union of 15,592 8,586					
	83,149	53,067			
	1,537,984	669,726		1,705	1,271

APPENDIX 2A—continued.

WESTERN AUSTRALIA.

* Exports of Timber, Tanning Substances and Essential Oils—Year ended 30th June, 1952.

Item and Country of Destination.	Quantity.	Value	Item and Country of Destination.	Quantity.	Value
TIMBER—continued.			ESSENTIAL OILS.		
<i>Timber, Bent or Cut into Shape, Dressed or Partly Dressed, N.E.I.:</i>			<i>Eucalyptus:</i>		
Commonwealth States	Cub. ft.	£	Commonwealth States:	lb.	£
New South Wales	7,839	6,174	New South Wales	21,703	1,986
South Australia	.....	66	Victoria	23,836	3,200
	7,839	6,240	South Australia	414	50
<i>Timber, Dressed or Moulded, N.E.I.:</i>			United Kingdom	.....	.....
Commonwealth States:	Cub. ft.	£	Singapore	.....	.....
New South Wales	9	5	South Africa, Union of	.....	.....
Northern Territory	151	112	Brazil	.....	.....
	160	117	Philippines Republic	.....	.....
				135,107	33,116
TOTAL, TIMBER EXPORTS		1,114,897	<i>Citrus Oils:</i>		
WOOD MANUFACTURES.			Commonwealth States:	lb.	£
<i>Casks, Vats—Empty:</i>			New South Wales	1,397	2,887
Commonwealth States:	No.	£	Victoria	6,415	13,682
New South Wales	4,243	31,660	South Australia	153	292
Victoria	679	4,537		7,965	16,861
South Australia	420	2,329	<i>Essential Oils—Other N.E.I.:</i>		
Northern Territory	1	3	Commonwealth States:	lb.	£
United Kingdom	.....	.....	New South Wales	23,929	30,781
	5,343	38,529	Victoria	6,001	7,823
	83	350	Queensland	84	231
	5,426	38,879	South Australia	497	807
<i>Articles of Wood—Except Furniture, N.E.I.:</i>			United Kingdom	.....	.....
Commonwealth States:		£	Canada	.....	.....
New South Wales	.....	1,185	Ceylon	.....	.....
Victoria	.....	1,221	Christmas Island	.....	.....
South Australia	.....	257	Hong Kong	.....	.....
Northern Territory	.....	139	India, Republic of	.....	.....
		2,802	Malaya, Federation of	.....	.....
United Kingdom	.....	40	New Zealand	.....	.....
Christmas Island	.....	102	South Africa, Union of	.....	.....
Malaya, Federation of	.....	66	Singapore	.....	.....
Singapore	.....	280		44,964	69,132
		3,290	TOTAL, ALL ESSENTIAL OILS		
<i>Furniture:</i>			TANNING SUBSTANCES.		
Commonwealth States:		£	<i>Tanning Bark:</i>		
New South Wales	.....	63	Commonwealth States:	cwt.	£
Victoria	.....	758	New South Wales	515	814
Queensland	.....	203	Victoria	12,527	18,135
South Australia	.....	653	Queensland	107	171
Northern Territory	.....	3,564		13,149	19,120
United Kingdom	.....	.....	<i>Tanning Extracts (Information not available for publication).</i>		
Christmas Island	.....	.....	<i>Other Tanning Substances</i>		
	.....	.....		<i>Nil</i>	<i>Nil</i>
	.....	5,241	TOTAL, TANNING SUBSTANCES (Excluding Tanning Extracts)		
	.....	45			19,120
	.....	234	TOTAL VALUE OF ALL EXPORTS SHOWN ON THIS RETURN		
	.....	5,520			1,300,869
TOTAL, WOOD MANUFACTURES		47,689			
TOTAL, WICKER, TIMBER AND WOOD MANUFACTURES		1,162,640			

Note:—Exports to Commonwealth States are of Western Australian Origin and Overseas Exports are of Australian Origin.

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	1,082,650	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	.....	23,430	.....	.....
1841	.....	.....	.....	1896	1,545,600	116,420	.....	30,883	.....	.....
1842	.....	.....	.....	1897	2,393,300	192,451	.....	65,800	.....	.....
1843	.....	.....	.....	1898	4,086,150	326,195	.....	49,480	.....	.....
1844	<i>b</i>	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	850	.....
1850	10,500	1,048	.....	1905	8,709,500	689,943	.....	25,417	32,876	.....
1851	1,250	288	1,593	1906	c 8,830,700	708,993	.....	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	.....	97,775	93,733	.....
1857	69,200	9,449	2,624	1912	c 11,297,100	903,396	.....	.....	.....	.....
1858	29,250	2,340	7,455	1913	c 13,619,650	1,089,481	.....	27,533	49,094	.....
1859	67,250	6,051	17,259	1914 ^d	c 6,279,750	502,153	.....	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	c 5,432,100	441,991	.....	78,926	6,127	381
1862	68,800	7,151	21,541	1917 ^e	c 8,890,650	310,893	.....	61,381	10,208	1,102
1863	32,900	2,063	25,265	1918 ^e	c 3,436,250	274,141	.....	72,669	18,959	2,060
1864	58,900	5,508	24,520	1919 ^e	c 4,135,750	332,584	11,535	81,834	16,886	3,995
1865	183,950	15,693	13,490	1920 ^e	c 5,065,300	465,731	21,935	117,072	18,875	3,987
1866	85,650	6,849	23,722	1921 ^e	c 9,816,250	1,137,819	24,916	240,579	22,121	3,704
1867	56,750	4,541	18,442	1922 ^e	c 8,309,750	1,041,047	.....	181,801	23,073	10,107
1868	8,000	638	26,045	1923 ^e	c 7,911,310	997,454	.....	54,769	13,328	6,878
1869	179,900	14,273	32,998	1924 ^e	c 11,136,861	1,367,517	.....	102,912	21,161	20,075
1870	157,200	17,551	48,890	1925 ^e	c 11,844,303	1,477,997	.....	348,713	29,606	39,877
1871	218,500	15,304	26,926	1926 ^e	c 12,001,384	1,522,958	10,072	186,775	40,136	42,057
1872	37,000	2,590	31,536	1927 ^e	c 12,580,262	1,651,149	8,727	238,203	15,056	47,819
1873	68,150	4,771	62,916	1928 ^e	c 10,384,784	1,265,383	7,783	199,754	15,818	26,454
1874	345,600	24,192	70,572	1929 ^e	c 7,635,237	960,435	6,603	147,426	27,662	39,131
1875	342,350	23,965	66,465	1930 ^e	c 6,579,743	807,425	4,687	225,208	35,850	63,307
1876	219,050	23,743	65,772	1931 ^e	.....	.....	.....	22,228	40,628	77,510
1877	336,150	36,979	31,851	1932 ^e	4,127,856	507,382	26,615	43,790	35,333	56,170
1878	580,900	63,902	35,064	1933 ^e	3,062,673	361,700	35,468	40,546	42,016	59,301
1879	627,250	69,742	35,001	1934 ^e	2,235,540	262,617	30,332	88,846	33,352	26,331
1880	662,550	66,252	51,970	1935 ^e	4,060,830	487,248	76,107	75,424	20,904	26,720
1881	792,750	79,277	77,165	1936 ^e	5,326,117	636,466	65,494	66,474	15,284	35,363
1882	936,500	93,650	96,050	1937 ^e	5,598,189	679,522	50,665	44,916	12,237	27,526
1883	997,000	79,760	56,250	1938 ^e	5,673,903	699,684	52,338	75,670	14,491	38,185
1884	861,700	68,936	20,960	1939 ^e	7,545,744	932,420	47,934	22,884	13,865	35,128
1885	848,150	67,850	36,216	1940 ^e	5,704,250	722,310	43,518	34,571	17,842	25,550
1886	626,150	50,092	27,450	1941 ^e	5,049,585	634,859	62,796	41,596	19,485	47,736
1887	354,800	28,384	34,533	1942 ^e	6,091,187	790,876	74,935	47,613	13,686	59,867
1888	525,750	42,060	33,525	1943 ^e	5,224,634	700,474	64,454	17,481	6,896	74,904
1889	788,500	63,080	57,465	1944 ^e	3,516,566	605,327	32,426	80	1,598	70,253
1890	1,172,200	82,052	51,355	1945 ^e	3,645,354	613,994	25,324	.....	1,294	72,704
				1946 ^e	2,851,475	570,028	27,307	.....	2,795	103,055
				1947 ^e	3,373,025	722,061	f 2,616	7,584	4,872	128,050
				1948 ^e	3,468,628	865,255	f 13,118	100,616	12,056	161,768
				1949 ^e	3,584,405	1,099,073	f 6,572	35,571	9,556	116,465
				1950 ^e	3,198,212	993,152	f 6,639	35,635	5,112	75,395
				1951 ^e	2,857,946	974,493	f 13,525	45,546	8,243	78,550
				1952 ^e	2,342,492	918,485	f 25,101	80,987	16,581	125,833
					2,373,553	918,485	f 47,689	81,988	19,120	119,109
				Total	389,196,889	44,205,391	1,087,489	5,763,221	1,540,865	1,942,412

^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 Items 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	3,216			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	1,523			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	133,983	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	47,123			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
				1951-52	1,037,499	18,494	167,697
				Total	11,194,595	320,731	1,100,222

* 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, 1951.

The number of Mills registered under the provisions of the Act at the close of the year totalled 280 (149 Crown Lands, 131 Private Property).

The average number of persons employed on timber holdings each month throughout the year was 4,708 compared with 4,047 last year.

The District and Workmen's Inspectors made 1,620 inspections of Timber holdings and investigated and reported on 740 notifiable accidents, of which six were fatal.

The number of accidents per 100 persons employed was 15.7, compared with 14.1 for last year.

The total period of incapacity as a result of accidents was 18,966 days, an average of 25.6 days per injured person (compared with 24.5 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 1951, 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 publication printed during the year was Bulletin No. 61 "General Statistical Statement, Western Australia," for the Sixth British Commonwealth Forestry Conference, Canada, 1952.