

1963

---

QUEENSLAND

# ANNUAL REPORT

OF THE

# DEPARTMENT OF FORESTRY

FOR THE

YEAR 1962-63

---

---

PRESENTED TO PARLIAMENT BY COMMAND

---

---

BRISBANE:  
BY AUTHORITY: S. G. REID, GOVERNMENT PRINTER.

## CONTENTS

	PAGE
Introduction .. .. .	5
Management .. .. .	5
Protection .. .. .	6
Labour and Expenditure .. .. .	6
Mechanical Equipment .. .. .	7
Acquisition of Land .. .. .	8
Forest Surveys .. .. .	8
Reforestation .. .. .	8
Silvicultural Research .. .. .	10
National Parks .. .. .	12
Harvesting and Marketing .. .. .	14
Sawmills Licensing .. .. .	15
Offences .. .. .	16
Forest Products Research .. .. .	16
Staff .. .. .	17

## TABLE OF APPENDICES

	PAGE
Appendix A.—Return of Timber, &c., removed from Crown Lands .. .. .	17
„ B.—Total Receipts, year ended 30th June, 1963 .. .. .	17
„ C.—Proceeds of Sale of Timber, &c., from 1st July, 1959 to 30th June, 1963 .. .. .	18
„ D.—Constructional Timbers supplied under Forestry and Lumbering Operations .. .. .	18
„ E.—Comparative Statement of Expenditure for years 1961-62 and 1962-63 .. .. .	18
„ F.—Area of Plantation Established, from 1st April, 1962 to 31st March, 1963 .. .. .	18
„ G.—Total area of effective Plantation, classified into Forestry Districts .. .. .	19
„ H.—Areas of Natural Forest Treated .. .. .	19
„ I.—State Forests, Timber Reserves, National Parks and Scenic Areas at 30th June, 1963 .. .. .	20
„ J.—Reservations for the year ended 30th June, 1963 .. .. .	21
„ K.—Distribution of Personnel .. .. .	21

### FRONTISPIECE

#### A SELECT PARENT TREE FOR QUEENSLAND'S FUTURE PLANTATIONS

Volume production, wood quality straightness of bole, and other characteristics can be improved by tree breeding. Trees inherit characteristics of their parents.

The Department's Tree Improvement Programme includes the establishment of seed orchards, comprised of grafted stock taken from outstanding trees.

The hoop pine plantation tree, illustrated in the photograph, is one of the best trees included in the tree breeding programme. It has excellent vigour, stem straightness and crown and branching habits. It is 30 years old with a g.b.h. of 49 inches, and height of 107 feet. A seed orchard to include stock from this tree and other outstanding hoop pine trees was established during the year.



# REPORT OF THE CONSERVATOR OF FORESTS

For the Year Ended 30th June, 1963

## INTRODUCTION

There are few avenues of work that provide higher employment figures per unit of expenditure than Forestry. For this reason, and also because of the vast employment potential provided by the forests, there is a popular view that Forestry work offers a substantial part of the solution of seasonal unemployment. To a certain extent this view is correct, but it can only be effectively applied if the Department is given assured and continuing funds for the purpose. It is essential to be in a position to plan ahead and to regulate the work and construct the administrative improvements required in the proper manner and in the correct locations. This work cannot be done overnight. Furthermore, a very substantial proportion of the work of the Department must be carried out in the period of June to December when seasonal unemployment is not a problem. It is the way that work is conducted in these months that determines the capacity of the Department to provide work in the problem period. A regular annual appropriation for seasonal unemployment, in addition to the normal funds made available to the Department, is essential if the most efficient and effective use is to be made of the potential contribution that forestry can make to the relief of seasonal unemployment.

The year 1962-63 saw a slight recovery in the timber trade. This was reflected by an overall increase in cut of Crown timber although in many areas the application of the principle of adjusting the quantity sold to the sustained productive capacity of the forest meant that less timber was offered for sale than the quantity that sawmillers would have readily purchased.

The cut of timber from plantations showed a substantial increase. There is an increasing realisation by the timber industry that the plantations will form the principal source of our timber supply in the future. The Industry has appointed a Committee to deal with all aspects of the utilisation of plantation timber. This is considered by the Department to be a progressive step, as the proper and most economic use of plantation timbers is vital both to the Industry and the Department. The Industry Committee will receive full co-operation from the Department and, within the limits of the staff available, every effort will be made to assist in the problem of achieving best economic utilisation. Two developments during the year should have a decided effect on the utilisation of the very small thinnings, which, to a large degree, are unmerchantably thinned at present. These are the negotiation of a sale of pulp wood, and the establishment of a mill for the manufacture of particle board.

A major advance towards assuring timber production on a permanent basis in North Queensland was made when Cabinet endorsed the gazettal as State Forests of much of the remnants of the valuable rain forests of North Queensland. Some of these areas have already been gazetted as State Forests. In others, where mining interests are involved, the matter is the subject of negotiation with the Mines Department.

It is hoped that any differences can be resolved and so permit these areas to be placed under permanent reservation for timber purposes.

The Department is faced with a serious problem in the volume of work and staff required to make timber valuations on the large area of leasehold land that has been the subject of applications for conversion to freehold. These valuations have been carried out over some 914,000 acres, but at 30th June, 1963, an area of 1,360,000 acres still remains for attention. This outstanding area is greater than the total area covered by applications to freehold at 31st December, 1962 (1,123,000 acres). This is an indication of the great increase in the rate at which applications are being received. The Department has limited staff available for this specialised work and is making every endeavour to expedite the work. This can only be achieved at the expense of forest survey work that is essential for the proper management of the State's timber resources.

The inadequate and unsuitable accommodation available to the Head Office of the Department is a substantial handicap to efficient work. The Department occupied its present offices as a temporary measure in 1948. At the time of occupancy they were scheduled for demolition. Structurally they do not permit of extension, and in any case they represent inferior office accommodation. There has been necessary expansion of the staff since then, and although some additional space has been made available the offices are substantially the same. They consist of 5 buildings or parts of buildings

in George Street. The space available is grossly overcrowded. The efficient and responsible work carried out by officers of the Department under these handicaps deserves high commendation. It is most discouraging, and there appears to be no possibility of any major foreseeable alteration of this unsatisfactory position within the next (5) five years, despite sympathetic and well informed consideration by the appropriate authorities. The expensive course of renting suitable accommodation appears to be the only avenue that would provide relief.

There has been a decided improvement in recent years in the schemes for the training of Departmental staff for the occupation of positions of intermediate responsibility. Training courses have been developed on several lines, with the provision of reasonable avenues of advancement for the officers who qualify in their respective fields. This has had the effect of attracting applicants of better educational standards than formerly, which is most important in a field such as forestry, where the volume of work requiring technical skill is constantly increasing. With continued recruitment of the type of staff now becoming available the position should be reasonably satisfactory within a decade.

## MANAGEMENT

### General

Additional funds for the relief of unemployment were made available to the Department as from the 1st January, 1963 and as a result the amount of work carried out during the year was greater than for 1961-62. Expenditure under the Reforestation Vote totalled £1,864,257 an increase of almost £100,000 on the amount expended the previous year.

Most men engaged after the 1st January were employed on the treatment of natural forests and the planting of a number of Eucalypt areas in the Brisbane district. It is considered that, if the additional funds were granted as from the beginning of the financial year, even more effective use would be made of the money but such an arrangement would not materially assist in the relief of seasonal unemployment—the main object for which the funds are granted.

State Forest reservations increased by 304,655 acres to a total of 5,474,291 acres. Some 131,000 acres of the increase are due to State Forest reservations in North Queensland and the recommendations of the North Queensland Land Classification Committee are gradually being implemented. It is pleasing to report the gazettal as State Forest of a large area of Crown Land to the north of the Bowenia plantation area and this will ensure the maintenance of the planting programme in that locality for many years to come.

The rate of establishment of Inventory plots in new areas and the re-measurement of existing plots has been increased slightly over previous years, the area sampled being 250,000 acres, comprising 190,000 acres of new work and 60,000 acres of re-measurement.

The total area now covered by permanent plots at 30th June, 1963, being (Numbers of plots shown in brackets):—

	Acres	
Inland cypress pine-hardwood ..	1,600,000	(9,010)
Coastal hardwood ..	550,000	(4,700)
Rain Forest (South Queensland) ..	20,000	( 140)
Rain Forest (North Queensland) ..	40,000	( 840)
Softwood plantations ..	40,000	(2,820)
Total .. ..	2,250,000	(17,510)

This is additional to the 490,000 acres of coastal hardwood sampled by random non-permanent plots.

Strip assessment on other reserves not covered by plots and in other Crown land for management purposes covered 160,000 acres.

There has been a very steep increase in the rate of application for conversion of tenure in which this Department has to provide timber valuations. Despite the fact that field work in the last 12 months has covered 300,000 acres of country for conversion, the area outstanding is now 1,360,000 acres compared with 252,000 acres at the start of the year.

The valuations associated with these assessments and the associated Land Court appearances have seriously slowed down the sustained yield calculation work associated with inventories on State Forests.

The following table sets out the position at the start and finish of the year.

	1-7-62 Acres	30-6-63 Acres
Total Applications	1,053,000 (388)	2,472,000 (660)
Withdrawn	68,000 (30)	75,000 (34)
Done in field and valued	588,000 (206)	914,000 (317)
Done in field and not yet valued	145,000 (59)	125,000 (42)
To be done	252,000 (93)	1,358,000 (267)

It is obvious that there will have to be a considerable increase in the number of field parties engaged on this work.

Although additional sales of plantation thinnings were made during the year, the total amount under sale on a continuing basis only increased by 300,000 super. feet to a total of 42,800,000 super. feet. The cancellation of two sales totalling 3 million super. feet per annum was responsible for the smallness of the increase.

Total cut for the year was 31,116,443 super. feet bringing the total cut of thinnings to date to 274 million super. feet with a stumpage value of approximately £980,000.

the most arduous time. Total firefighting, patrol and detention expenditure was £52,052. A further £4,014 was spent on early protective burning of forests to anticipate bushfires later in the year when damage would have resulted.

The area covered in this early protective burning programme (or prescribed burning) was 109,700 acres, compared with 30,800 acres burnt in 1961-62. Much of the increase came from Dalby district, but each year, every district is swinging increasingly into this method of protecting hardwood forests.

The expenditure on new firebreaks and fire protection roads was £100,592 (£121,847 in 1961-62) and maintenance of existing breaks and roads was £125,680 (£127,311). This maintenance figure has been very high in the last two years because much of the Federal relief money was channelled into this work, which has a high labour content.

The total number of fires fought on or near Crown timber lands was 186, and direct costs were £10,334. Re-start of poorly patrolled fires was a major cause, but many resulted also from unauthorised burning-off fires. However, causes of nearly half the fires were not definitely established.

The year saw the start of great developments in the field of communications, and 40 radio masts of over 80 feet were



#### THE FIRST OF FOUR LARGE FIRE TANKERS ORDERED BY THE DEPARTMENT

It is a diesel powered unit, with 800-gallon tank, large Safety Chain, carrying two 150-foot fire reels, and 1,000 feet of 1½-inch hose.

Almost 80 per cent. of the year's cut comprised native conifers—Hoop Pine 23,906,407 super. feet and it is to be regretted that exotic conifers have been so slow to move. During the year an agreement covering the sale of 47 million super. feet of exotic conifers as pulpwood was finalised with the A.P.M. Forests Pty. Ltd. and it is expected that cutting will commence during the present financial year. A particle board plant using Hoop Pine thinnings was completed during the year and trial and adjustment runs have been completed satisfactorily.

#### Protection

The fire season of 1962 started with two fires in July, reaching a peak of 72 in October, which was the worst month. November with 60 fires was another severe month, but then good storm rains reduced the hazard and danger considerably. The wet season delayed its coming until late March, so that we had the rather unusual circumstance of five fires in February, 1963.

Overall, the assessment of the season would be slightly above average, with perhaps Monto and Dalby districts having

erected. Delivery of the first new VHF radios is imminent, and the advent of improved radio should greatly help in firefighting work. Standard of telephone lines is also being greatly improved.

#### Industrial Safety

Increasing awareness of the benefits of promoting industrial safety has resulted in the training of four Departmental field officers as part time Job Safety Trainees. No trends are yet observable as a result of the efforts of these men, but it is hoped that within a very short time the Department will be able to see a drop in its high frequency rate of about 150 accidents per million man hours worked. So far some 80 supervisors at various levels have undertaken the course.

#### Labour and Expenditure

The number of men engaged on reforestation works rose from 1,746 in July, 1962, to 1,864 in May but had fallen to 1,720 at 30th June, 1963.

Between January and May, a net increase of 518 men was made possible by additional funds allocation. However, in order to achieve and maintain this increase, over 900 men were engaged.

The average fortnightly employment figure of 1,606 was 83 greater than for the previous year. The average cost (total) for a man year on reforestation was £1,197 15s. 4d. which is approximately £13 per annum higher than 1961-62 year. The percentage of direct wages paid, to total expenditure, remained in the vicinity of 80 per cent.

The granting of three weeks' annual leave to all employees under the Forestry Employees' Award plus wage increases, which will probably be granted under the margins claim, will result in a higher cost per man year during 1963-64.

Finance to cover expenditure on reforestation plus maintenance of capital improvements was provided from—

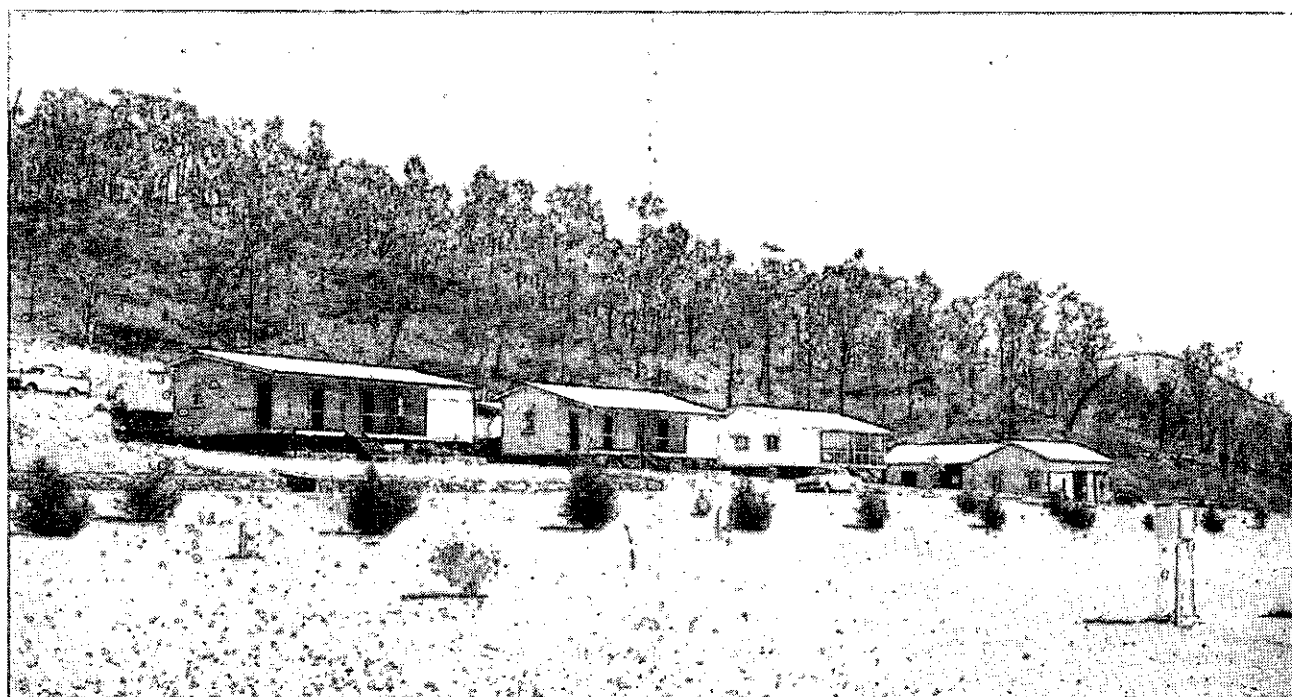
	£
Loan Funds .. .. .	1,864,257
Trust .. .. .	59,360
	<u>£1,923,617</u>

#### Mechanical Equipment

The allocation of Loan Funds for the purchase of new vehicles and plant was again insufficient to cope with replacements and additional requirements. The following table shows the growth of the Department's plant in the last few years:—

—	Tractors, Dozers, Loaders	Rotary Hoes	Power Graders	Motor Vehicles
30th June 1959 ..	65	24	22	321
30th June, 1960 ..	66	24	24	322
30th June, 1961 ..	67	24	25	331
30th June, 1962 ..	67	23	27	368
30th June, 1963 ..	68	23	30	384

Additional plant and a vehicle were purchased for road construction and maintenance in the Tully district in order that the beef fattening project in that area could proceed.



**FORESTRY CAMP—THREE BARRACKS, GARAGE AND OFFICE STOREROOM—CATHU (MACKAY DISTRICT)**

Up to 1,400 forestry workmen are accommodated throughout the State in barracks in similar settings.

A breakdown of this expenditure under major headings follows:—

	Expenditure £	Percentage of Total
Plantations .. .. .	400,819	20.9
Natural regeneration .. .. .	153,657	8.0
Nursery expenses .. .. .	49,765	2.6
Research .. .. .	49,167	2.5
Protection .. .. .	302,051	15.8
Surveys .. .. .	27,580	1.4
New construction .. .. .	41,376	2.1
Maintenance of capital improve- ments .. .. .	55,432	2.8
Wet time, holidays and leave .. .. .	226,479	11.8
Supervision, tools, cartage of men, &c. .. .. .	344,019	18.0
Camping allowance .. .. .	119,320	6.2
Pay roll tax .. .. .	35,542	1.8
Workers' compensation .. .. .	42,320	2.2
Administration .. .. .	38,090	2.0
Miscellaneous .. .. .	38,000	1.9
	<u>£1,923,617</u>	<u>100.0</u>

The machine maintenance of roads, firelines and breaks is being investigated to reduce cost and to obtain better results. Some results to date have shown promise but further investigation is required.

An increase in the cost of maintaining the Department's vehicle fleet can be anticipated in the next few years. This is due to conditions beyond the Department's control and in the foreseeable future certain types of units will place a very severe drain on the Maintenance of Plant Trust Fund. A substantial replacement programme is required within the next few years to keep the tractor, grader, dozer and hoe fleet in an operational condition. No graders or tractor hoes have been replaced in the last four financial years.

It is essential that the Department keep its heavy plant in good operational condition to keep roads and firelines in safe condition to protect the Department's standing timber assets. The mechanical assets of the Department require only finance and limited time to replace them whereas the timber assets require finance and considerable time. In some cases they are irreplaceable.

The total replacement value of all the Department's plant is approximately £2,000,000.

Considerable attention has been paid this financial year to the construction of a 750-gallon fire-fighting tanker and also to the replacement of engines and pumps on the existing

200-gallon slip-on firetanks. The 750-gallon fire-fighting tanker is now operational and another three are under construction.

Details of Expenditure are—

	£	s.	d.
Loan Purchase of Plant .. .. .	189,429	7	5
Trust Maintenance of Plant .. .. .	236,506	1	8
Hire Credits received .. .. .	273,481	12	9
Balance credited to Consolidated Revenue	36,975	11	1

Major units replaced were 32 vehicles, 8 dozers.

Major additional purchases were 9 vehicles, 1 dozer and 3 graders.

It is anticipated that there will be a heavy demand next financial year for additional vehicles for F.I.S. and for expansion of silvicultural work.

A census of plant as at 30th June, 1963, was—

Item	Disposal	Purchases	Balance 30th June, 1963
<b>Motor Vehicles—</b>			
Sedans .. .. .		1	11
Light Utilities and 4-wheel drive vehicles .. .. .	12	33	226
1 to 2 ton .. .. .	1		1
2 to 4 ton .. .. .	12	4	114
4 to 6 ton .. .. .		3	32
<b>Total .. .. .</b>	<b>25</b>	<b>41</b>	<b>384</b>
<b>Tractors (D.B.H.P.)—</b>			
<i>(a) Track Type—</i>			
Up to 50 h.p. with blade .. .. .		3	29
50 h.p. without blade .. .. .	3		22
50 to 100 h.p. with blade .. .. .	5		9
Over 100 h.p. with blade .. .. .		6	9
<i>(b) Wheel Type (End Loaders and Rotary Hoes) .. .. .</i>			
			31
<b>Total .. .. .</b>	<b>8</b>	<b>9</b>	<b>91</b>
<b>Graders—</b>			
Drawn .. .. .			15
Powered to 40 h.p. .. .. .			16
40–80 h.p. .. .. .		2	9
80–100 h.p. .. .. .			1
100 h.p. Up .. .. .			5
<b>Total .. .. .</b>	<b>3</b>	<b>45</b>	<b>45</b>
Road compressors .. .. .			12
Lightweight rockdrills .. .. .		6	11
Rippers .. .. .			23
Rotary Hoes .. .. .			30
Firetanks, slip-on type .. .. .			82
Firetanks, various types .. .. .			38
Road rollers .. .. .			6
Road scoops .. .. .			18
Terracers .. .. .			10
Chain saws .. .. .		18	81

#### Acquisition of Land

During the year 1962-63 an amount of £7,255 15s. 4d. was expended on the acquisition of land for Forestry purposes as follows:—

	£	s.	d.
Purchase of Land .. .. .	2,914	0	0
Survey and Real Property Fees .. .. .	698	5	6
<b>Compensation paid for improvements on—</b>			
(a) P.P.D.G.F. 9062 Toowoomba .. .. .	1,136	19	10
(b) Bayfield Pastoral Holding No. 4, Port Curtis District .. .. .	136	10	0
(c) Forest Grazing Lease No. 1, Stanthorpe District .. .. .	1,670	0	0
(d) Occupation License No. 1854, Dalby District .. .. .	700	0	0
	<b>£7,255</b>	<b>15</b>	<b>4</b>

The expenditure of £2,914 represents the purchase of four properties, comprising a total of 3,938 acres 3 roods 15 perches as additions to existing State Forests.

#### Forest Surveys

Twenty-seven camps operated during the year, details being as follows:—

*General Surveys.*—Fifteen camps, each consisting of mainly three men, were engaged on general surveys. Work was associated with the traversing of reserve, logging area and compartment boundaries, firebreaks, roads, species separation, soil and timber classification and road investigations. Two of these camps were engaged in theodolite control traverses.

*Timber Assessment Surveys.*—Twelve camps were engaged on Forest Inventory, Assessment and Freeholding Surveys. These parties were responsible for the running of some compartment and reserve boundaries and the re-opening of old lines. Details of their assessment work is listed under Management—General.

*Training and Personnel.*—Two survey schools were held at Beerburum early in 1963, one for Overseers and Leading Hands, the other for Survey Trainees. At the end of 1962-63 the following were engaged in survey work:—5 Foresters, 7 Forest Rangers, 27 Overseers, 12 trainees and 84 men.

Drafting Branch personnel totalled 17 officers.

#### Details of work in miles

Theodolite Controls	Compass and Chain Traverse	Re-opening of old lines	Investigation Surveys	Stripping
84	738	296	140	3,133

#### REFORESTATION

##### General

Rainfall generally was above average. The spring and early summer of 1962 were below average and it was not until December that good rains were experienced. Falls in December and January were excellent, minor drought was experienced in February followed by very heavy March rains—quite a number of centres recording over 20 inches for the month. April and May were generally average or above whilst most centres reported below average figures for June. The minor drought of February was not experienced in North Queensland where falls on the Atherton Tableland ranged from 23 to 32 inches.

Some yearly totals compared with averages are:—

##### Hoop Pine areas—

Yarraman, 3,203 points—average, 3,153 points.

Imbil, 6,388 points—average, 4,576 points.

Kalpawar, 4,068 points—average, 3,671 points.

##### Exotic Pine areas—

Beerwah, 7,719 points—average, 6,114 points.

Tuan, 5,054 points—average, 5,347 points.

Bowenia, 9,041 points—average, 6,761 points.

In Hoop Pine areas, conditions were good for the early burning of felled areas but conditions for the commencement of early planting were not so good. Planting was continued and the excellent survival obtained on most areas again justified the practice of planting as soon as possible after the burn, irrespective of weather conditions. The good rains of December, January and March resulted in prolific weed growth with a consequent increase in tending costs.

The winter 1963 planting of exotic pines commenced under conditions of excellent soil moisture but low falls in June plus some days of strong, drying westerly winds placed a severe strain on the newly planted seedlings and it is possible that some refilling will be called for.

Details of the year's work are:—

	1961-62	1962-63
Area of natural forest treated .. .. .	57,605	86,862
Area of plantation established .. .. .	4,624	4,878
Area covered in pruning .. .. .	16,280	18,538
Area tended .. .. .	75,100	75,473
Area thinned merchantably .. .. .	4,216	4,901
Area thinned unmerchantably .. .. .	5,089	7,869

It will be noted that there has been an increase in all operations with the area of natural forest treated showing an increase of 29,257 acres.

## Plantations

Appendix F shows by districts and species, the area planted from 1st April, 1962, to the 31st March, 1963. The area planted for the period is 4,878.8 acres, an increase of 254 acres on the previous year and it is made up as follows:—

	Acres
Native Conifers (chiefly Hoop Pine) .. .. .	2,103.1
Exotic Conifers (mainly Slash Pine, <i>Pinus caribaea</i> , <i>radiata</i> and <i>patula</i> ) .. .. .	2,322.5
Broadleaved species .. .. .	4.7
Eucalypts .. .. .	448.5
	<hr/> 4,878.8

The year's plantings bring the total acreage of effective plantations to 106,887 acres made up as follows:—

	Acres
Native Conifers .. .. .	52,414.8
Exotic Conifers .. .. .	49,317.2
Eucalypts .. .. .	3,725.5
Other Broadleaved Species .. .. .	1,429.6
	<hr/> 106,887.1

As indicated in last year's report the acreage of Native and Exotic Conifers now exceeds 100,000 acres.

Machines were again used for clearing in rain forest and Eucalypt forest and at Tuan the contract covered not only pushing and windrowing but also the burning, re-heaping and final burning of the stacks. The work was satisfactorily completed and released Departmental machines and manpower for other operations. An extension of this type of contract is visualised. Scrub burns generally were good but early planting conditions were not so good and rains of December, January and March resulted in some high tending costs.

Pruning is still up to date and during the year pruning operations were carried out over a total of 18,538 acres comprising the following operations:—

	1961-62	1962-63
	Acres	Acres
First operation .. .. .	4,823	5,290
Second operation .. .. .	6,021	5,427
Third operation .. .. .	3,470	5,448
Fourth operation .. .. .	1,967	2,373
	<hr/> 16,281	<hr/> 18,538

In addition, epicormic shoots were removed over 855 acres, select stems were repainted over 62 acres and re-selection was carried out over 78 acres.

As mentioned in last year's report, the second stage unmerchantable thinning to 300 stems per acre is still suspended at Beerburum, Beerwah and Toolara. The utilisation of small size material on a fairly large scale has been brought a step nearer by the finalisation of an agreement covering the removal of 47 million feet of pulpwood from these plantations over a period of 10 years.

During the year areas thinned unmerchantably were:—

District	Exotic Pine	Hoop Pine
	Acres	Acres
Brisbane .. .. .	703.0	15.0
Gympie .. .. .	597.9	538.3
Mackay .. .. .	508.0	..
Maryborough .. .. .	2,718.3	..
Monto .. .. .	..	17.6
Murgon .. .. .	..	686.0
Yarraman .. .. .	122.0	866.7
Warwick .. .. .	1,096.0	..
	<hr/> 5,745.2	<hr/> 2,123.6

Merchantable thinnings were carried out over an area of 4,901 acres.

## Entomology

*Insects of Silvicultural Importance.*—Although plantations of native and exotic softwoods continue to remain generally free of serious insect pests, damage to *Pinus radiata* and kauri (*Agathis* spp.) has again been serious in certain areas. Numerous records from nurseries and plantations indicate

that insect pest activity has been high but favourable weather conditions during the past year have masked the seriousness of damage caused.

The investigation of insect problems has been directed towards the definition of the status of pest species in terms of material losses incurred and their likely duration. This has mainly concerned the leaf bagworm, *Hyalarcta hubneri* (Psychidae) which causes extensive defoliation of *Pinus radiata* in plantation areas at Passchendaele. Studies are in progress to determine the losses in growth due to defoliation, the degree of natural control operating on populations, the proportion of trees to which serious damage is being caused and the duration of attack.

Work has been commenced on the kauri coccid, *Conifericoccus agathidis* (Coccidae) which continues to cause serious damage to kauri pine in the Mary Valley. This insect, by its attack on young foliage during the spring growth flush and subsequent summer months, is causing almost complete defoliation through leaf fall. Investigations are being directed towards methods which will reduce or prevent damage to a sufficient proportion of leaves to enable trees to remain alive during subsequent period of heavy insect attack.

During July, 1962, a survey was made of areas containing *Pinus* species (especially *P. radiata*) which are known to be attacked by *Sirex* in countries where this insect is present. No evidence was found to indicate its presence in Queensland but superficially similar flight holes and damage caused by a weevil, *Euthyrhinus mediatundus* (Curculionidae) occurred widely, its incidence in *Pinus* spp. being the first recorded in this State.

In late summer considerable damage was caused to eucalypts in some Southern Queensland reserves and untended areas by defoliating insects mainly sawflies (Pergidae) and lepidopterous caterpillars (Noctuidae and other families). The bulls eye borer, *Tryphocaria acanthocera*, has been responsible for losses of *E. maculata* in managed areas on the Ballon reserve in the Dalby district. On some sites up to 75 per cent. of potentially merchantable trees were damaged. This insect has caused severe losses in past years to planted areas of flooded gum (*E. grandis*).

## Pathology

The occurrence of *Phytophthora cinnamomi* in exotic pine nurseries at Passchendaele, Beerburum, and Beerwah was confirmed during the year and action to sterilise the beds with Methyl Bromide before the July, 1963 sowings has been taken. If this action is not successful consideration will have to be given to the location and construction of new nurseries at these centres.

The fungus has also been isolated from winter 1962 plantings so it is possible that the disease was present in the nurseries for at least 12 months before.

Apart from damping off fungi in various nurseries there has been no pathological troubles of any consequence.

A full time Forest Pathologist commenced work with the Department on the 20th May, 1963.

## Regeneration of Natural Forest

Additional money has been largely responsible for the increase in the area treated. An innovation in treatment work in Cypress Pine in the Dalby district has been the use of 1 per cent. 2,4,5T amine in water to control bullock and other unwanted woody growth. Consideration is being given to the introduction of the control method into the Inglewood Cypress Pine areas.

Details of treatment work carried out are:—

	1961-62	1962-63
	Acres	Acres
Eucalypt Forest .. .. .	27,635	45,863
Cypress Pine .. .. .	27,941	38,101
Tropical Rain Forest .. .. .	2,029	2,778
Natural Hoop Pine .. .. .	..	120
	<hr/> 57,605	<hr/> 86,862

## Seed Collection

During the year a total of 46,632 lb. of Hoop Pine seed was collected. Of this 29,028 lb. came from natural stands and 17,604 lb. from plantations.

Of the seed from natural stands the highest L.G.C. recorded was 64 per cent. whilst 12,073 lb. had a L.G.C. of 50 per cent. or better. Of the plantation seed 52 per cent. was the highest L.G.C. recorded and 13,584 lb. gave figures of 30 per cent. and better.



This was the first major collection since December, 1957, and it is interesting to note the increasing quantities of good quality seed collected from plantation areas.

The failure of the seed crop of *Pinus caribaea* in British Honduras forced a collection of as much seed as possible from our own plantations. The collection yielded 34 lb. 10½ oz. of seed mainly from Reserve 20 and various North Queensland plots. Fertility was good and sowings were made to the usual extent at Reserve 20, Reserve 658 and Reserve 185—germination at all nurseries was excellent. In addition an amount of 29 lb. 1 oz. was purchased from Holland.

Usual collections of *Pinus elliottii*, *Callitris* spp. and other miscellaneous species were made.

#### Nurseries

Twenty-one nurseries remained in production and output for the year totalled 3,138,598 plants whilst stock on hand amounts to 3,276,612 plants.

#### Sales of Trees

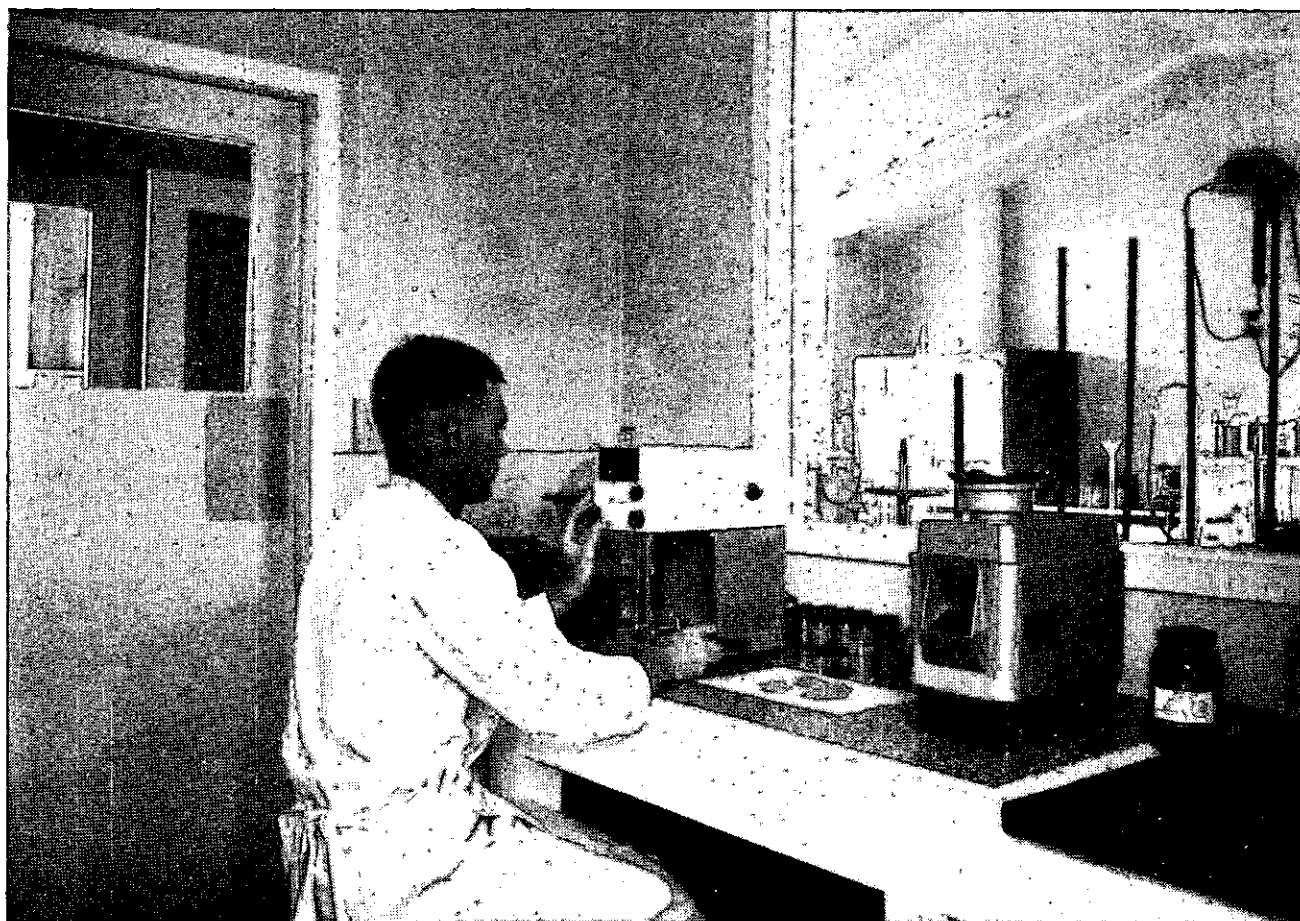
Sales to the public and other Government Departments totalled 300,045 an increase of 90,335 on sales for 1961-62.

Details are:—

By Species		By Type of Planting	
<i>Pinus elliottii</i>	.. 217,509	Forest Plots	.. 237,143
<i>Pinus patula</i>	.. 2,361	Schools	.. 6,757
<i>Pinus radiata</i>	.. 4,307	Government Departments	.. 8,241
Hoop Pine	.. 13,182	Private Sales	.. 47,904
Miscellaneous	.. 62,686		
	300,045		300,045

Sales of miscellaneous species ex Rocklea totalled 29,487 plants of a cash value of £2,355 9s. 10d.

The value of all sales amounted to £6,051 12s. 11d.



SOILS LABORATORY—Forest Research Station—Beerwah

### SILVICULTURAL RESEARCH

#### Staff

The number of university trained officers engaged full-time on Silvicultural Research remained at 15 during the year. Distribution of these through the State is as follows:—North Queensland (3), Mary Valley (1), Beerwah (7), Brisbane Valley (1), Dalby (1) Head Office (2).

Dr. B. Richards continued his work at Yale under a C.S.I.R.O. scholarship and is expected to resume at Beerwah during the coming year. At Yale he has been engaged on the study of nitrogen fixation by *Pinus* species and it is expected that the results of his investigations will have direct application to our work in Queensland.

#### Field Work

(i) *Hoop Pine (Araucaria cunninghamii)*.—Long-term thinning and pruning experiments have been maintained in the Brisbane Valley and Mary Valley areas. For more than 10 years now this work has been largely directed to the determination of relationships between Standing Basal Area

and Basal Area increment. A study of data available was made in 1955 and conclusions arrived at have not been upset by subsequent observations. Information of interest has been gained on (a) the maximum Basal Area of Hoop Pine that various sites may support; (b) whether the Basal Area giving maximum increment rises with increasing age; and (c) the influence of numbers of stems per acre on Basal Area increment.

(a) Evidence from unthinned plots suggests that in good quality rain forest sites in the Brisbane Valley and Mackay areas the maximum Basal Area of Hoop Pine to be supported will be well in excess of 300 sq. ft. per acre. A plot of Hoop Pine on R. 44 Eungella aged 30½ years and carrying a Basal Area 289 sq. ft. in 433 stems per acre gave an annual increment averaging 10.2 sq. ft. over the past 2 years (1961-63).

(b) Expt. 1723 Yarraman was established in November, 1956, in a 26-year-old Hoop Pine plantation to determine whether there was any tendency for the Basal Area giving maximum increment to increase with age. The 1955 study had established 120 sq. ft. as the optimum B.A. at ages studied. Four B.A. levels maintained by annual thinnings

were adopted, and there are three plots to each treatment. In the following table yearly B.A. increments are shown as the means of these three plots.

Year	Standing Basal Area per acre			
	120 sq. ft.	128 sq. ft.	136 sq. ft.	144 sq. ft.
	Sq. ft.	Sq. ft.	Sq. ft.	Sq. ft.
1957-58 .. ..	6.9	6.4	5.5	5.5
1958-59 .. ..	8.4	7.7	7.5	5.8
1959-60 .. ..	7.0	6.9	5.8	6.5
1960-61 .. ..	4.7	3.8	4.3	4.4
1961-62 .. ..	7.3	6.9	6.8	7.2
1962-63 .. ..	5.4	5.3	5.2	4.5

These figures do not indicate any marked tendency to change during the 6 years they cover.

(c) Evidence is accumulating of an important influence of numbers per acre on B.A. increment in stands which are planted at widely different spacings and subsequently thinned to the same B.A. (100 sq. ft. per acre). However, no such influence has been recorded where stands planted to the same spacing have the same B.A. retained by different direction of thinning in widely different numbers of stems per acre.

Planting of stock in the Imbil seed orchard proceeded to schedule and a selection of 14 elite Hoop Pine trees has been made to provide scions for bud grafting which will be done next year (1964). An orchard site has also been selected at Taromeo in the Brisbane Valley.

Studies were completed on the flowering and pollination processes in Hoop Pine and these have been written up as part of a thesis submitted to the Queensland University. The work confirmed earlier observations of the relatively long period of receptivity of the individual female flower and the wide difference in flowering times of individual trees (December to May). This difference is so great that it can influence the selection of elite trees for the orchard. It is possible that some extreme cases could play no part in cross pollinations under orchard conditions.

(ii) *Kauri Pine (Agathis robusta)*.—This species is still severely affected in the Mary Valley by the attacks of the

coccid (*Conifericoccus agathidis*). Work on its control has been pursued by the recently appointed Forest Entomologist and thinning experiments are being maintained.

(iii) *Slash Pine (P. elliotii)*.—This year has again seen an extension of the work particularly in thinning and progeny plot establishment. The anticipated impact of pulp thinning on thinning procedures has called for the establishment of new experiments and the policy of complete intercrossing of elite stems involves additional progeny tests.

Planting of the second seed orchard is now complete and during the year a collection of 10 lb. of seed was made from the two orchards. This should provide sufficient stock for 150 to 200 acres at a spacing of 10 feet x 10 feet.

A summary has been prepared of observations made on progeny tests established in the field from 1947 to 1955. These involved open pollination, selfed progenies and controlled crosses of two parents. Results support earlier conclusions on the improvement in form that can be achieved by careful selection of the mother tree. Replication adopted in some of the open pollinated trials has permitted analysis of results. Expt. 4 Genetics established in 1953 covered four replications of each of 21 parents and a control which derived from high pruned stems from Beerwah plantations. Stem straightness was assessed at age nine years and standing volumes measured as an index of vigour. Only one parent—a U.S.A. tree—gave a lower figure than the control for average stem straightness and only two gave lower volume production. Volume figures were submitted to statistical analysis and differences were significant at one per cent. level in five progenies and at five per cent. level in three progenies. Maximum difference was 24 per cent.

Examination of data from selfed trials suggests that the trees whose selfings perform well in form and vigour tend to produce better outcrosses than those whose selfings perform poorly. This emphasises the need for extension of this work and draws attention to the benefit that might come from a programme of inbreeding and outbreeding similar to that used in maize breeding.

Results from controlled crosses using a large number of plus trees are striking. Use of random layouts with four replications of plots of 49 to 64 trees has permitted analysis of results. Four such replicated trials were studied (Expt. 167 N.C.—1954 planting; Expt. 11 Gen.—1955; Expt. 25 Gen.—1956; Expt. 41 Gen.—1957). In the following table are set out data for two sections of the 1955 planting aged seven years at assessment. Figures are the means for four replications each of 36 stems assessed.

Section A			Section B		
Progeny	Percentage with Straightness 8+	Mean Volume	Progeny	Percentage with Straightness 8+	Mean Volume
		Cubic feet			Cubic feet
Control (Routine)	1.4	.76	Control (Routine)	Nil	.90
G. 27 x G. 15	54.5**	.97*	G. 7 x G. 19	1.3	1.05
G. 27 x G. 14	25.7**	1.10**	G. 7 x G. 14	3.9	1.13*
G. 19 x G. 14	17.7**	.92	G. 14 x G. 16	8.8*	1.07
G. 8 x G. 26	50.0**	1.06*	G. 14 x G. 5	28.0**	1.20*
G. 7 x G. 15	32.8**	1.22**	G. 14 x G. 26	.7	1.30**
			G. 8 x G. 7	20.0**	1.17**
			G. 6 x G. 26	14.6**	1.38**

\*\* Significant difference at 1 per cent. level in regard to control.

\* Significant difference at 5 per cent. level in regard to control.

It will be seen that the maximum volume advantage of any progeny over the control is 60 per cent. (Sect. A) and 53 per cent. (Sect. B), whilst for both sections the average advantage is 36 per cent.

A stem ranking eight for straightness is described as having slight defect, not serious in any way.

From the summary a number of trees stand out for form or vigour of their progeny. One of these is G. 20, a member of the seed orchard. In Expt. 25 genetics where control was estimated to give three per cent. stems 8+ in stem straightness G. 20 appeared in three crosses giving the following per cent. of 8+ stems:—

G. 40 x G. 20, 100 per cent.; G. 16 x G. 20, 96 per cent.; G. 9 x G. 20, 100 per cent.

(iv) *Caribbean Pine (P. caribaea)*.—Work with this species has continued to expand at Bowenia where thinning, pruning, nutrition and tree breeding experiments have been established. Two pilot experiments on poor quality sites have shown a response to phosphate and arrangements are in hand for the commencement of more extensive trials to determine optimum rates of application and whether better soil types are also deficient in phosphorus.

Field grafting with *P. caribaea* has continued to meet with success over a wide seasonal range and this will be the method adopted in establishment of a seed orchard with this species. Selection of elite trees is to be undertaken next year.

A number of crosses has been made between good phenotypes. Hybrid crosses were made between var. *caribaea* and var. *hondurensis*; the former flowers at the same time as *P. elliotii* the latter about two months before.

Provenance trials were established at Beerwah, Bowenia, and Cathu (north of Mackay) using stock from seed sources in Cuba, Isle of Abaco, British Honduras, and Guatemala.

(v) *Monterey Pine (P. radiata)*.—Thinning and other long term experiments on the Passchendaele area were maintained. A small scale test involving the inoculation of a number of seedlings derived from parents thought to display a degree of resistance to *Diplodia* gave promising indications that the parents do enjoy this character and have transmitted it to their progeny. Further trials of this nature will be conducted with the assistance of the Pathologist as progenies become available from recent crossings.

(vi) *Cypress Pine and Western Hardwoods*.—With the return of the Officer-in-Charge from overseas, a full research programme has been resumed. Apart from maintenance of existing experiments and yield plots, a major aspect of the

work has been concerned with the control of unwanted trees. Instructions for the use of 2,4,5-T in the silvicultural treatment of Cypress Pine areas were prepared and introduction of this technique as a routine measure supervised. A series of experiments has now been established covering methods of application of 2,4,5-T for the most important species. The cut stump and frill treatments have generally been very successful and stem injections have given a good kill of most species. Spotted Gum, however, has proved surprisingly resistant to this latter method of application.

(vii) *Rain Forest Species, North Queensland*.—The main work at this centre has dealt with the treatment and maintenance of existing experiments with some expansion of observations on treatment around seed trees to secure regeneration of Group A species—the high quality cabinet woods. A summary of the results obtained from these experiments has not yet been completed. Grafting work with Red Cedar (*Cedrela australis*) and Maple Silkwood (*Flindersia brayleyana*) has shown no marked seasonal influence. With Red Cedar side veneer and with Maple terminal wedge have been established as the best methods for grafting and the glasshouse has shown a slight advantage over the lath house.

Several formulations have shown promise in experiments on the control of grass in degraded pastures being planted with

(ix) *Plant Nutrition*.—Glasshouse and field experiments were maintained and some new experiments initiated. Hoop and Kauri pine continued to make healthy growth on plots where legume cover crops had become established. There is evidence that continued maintenance of the most promising legume *Lotononis bainesii* will present difficulties where some other species of legume that sprawl and clamber over the plants maintain themselves quite well. A large scale cost trial was commenced using Hoop Pine with *Lotononis bainesii* during the year.

There have been a number of cases over the past two years where experiments established at planting on sites expected to show symptoms of phosphate deficiency have failed to do so over a period of six or seven years and during that time the fertilized plots showed no response to Nauru or Super phosphate. After that period there have been delayed responses to the original and to repeat applications. Examples of this are to be found in Expts. 26 and 53 Bowenia and Expt. 210 North Coast.

Analysis of soils and plant material associated with work on plant nutrition occupied most of the time of the analyst and the laboratory. Figures for repeated samplings under natural forest and *Pinus* plantations of varying ages showed



**PICNIC GROUND PURLINGBROOK FALLS—GWONGORELLA NATIONAL PARK, SPRINGBROOK**  
Approximately 75,000 persons visited Springbrook National Parks during the year

Hoop Pine at Danbulla. The chemicals have been applied both prior to planting and for tending of young plants, but frequency of re-treatment and effect on the Hoop Pine need to be investigated in greater detail before the possibility of replacing the present mechanical methods of site preparation and tending can be evaluated. 2,2-DPA alone and in mixtures with amitrol and simazine have controlled grass for up to four months with only slight temporary browning of the lower branches of Hoop Pine. Paraquat has given only temporary grass control, and many pines have been killed or severely damaged.

(viii) *Coastal Hardwoods*.—A detailed investigation of soils, vegetation and silvicultural status was carried out on an area of about 200 acres of high quality cut-over Blackbutt (*Euc. pilularis*) forest, on which are to be established experiments dealing with methods of improving the overall productivity of the several poorly stocked types involved. Clearing of an area of 1.6 acres in Spotted Gum (*E. maculata*) forest has resulted in an immediate and spectacular response by suppressed lignotubers of that species, height increments of up to 11 feet being recorded in the first year. The magnitude of the response appears much greater than could be explained by competition for light, moisture or nutrients, and further detailed investigation is proposed. Existing experiments were re-measured, treated and maintained as necessary.

a definite drop in N content of the surface soil layer with increasing age of plantations. This difference in N content has been also shown by pot trials in the glasshouse. However, no appraisal of the position involving the standing trees, ground cover and needle litter has been attempted. It is proposed to do this in the near future and also to clear fall an area of plantation 30 years or more in age which includes a yield plot which was first measured in 1940, to supply an early indication of any drop in productivity such has been recorded in the second rotation in other parts.

(x) *General*.—Full use has been made of the facilities at the University of Queensland Computer Centre for preparation of volume tables for research and routine use. The inclusion of sectional area overbark at 15 feet as an additional variable shows considerable promise as a means of improving the accuracy of estimates of volume of relatively small numbers of trees in experiments where changes in form as a result of treatment may be of importance.

#### NATIONAL PARKS

In accordance with Cabinet approval the Secretary of the Department, Mr. W. Wilkes, attended the First World Conference on National Parks held at Seattle, Washington, U.S.A., from 30th June, 1962, to 7th July, 1962.

Below are some brief notes by Mr. Wilkes.

"The Conference was attended by approximately 350 delegates from 72 countries and proved most informative and enlightening.

The purpose of the Conference was to give an opportunity to the delegates from the various countries to exchange information in a field of common interest so as to achieve more effective international understanding and co-operation, particularly in so far as administration of National Parks is concerned.

All speakers stressed the need for conserving our natural resources, both plant and wildlife, and mention was made of the international significance of National Parks.

The necessity to have adequate areas of National Parks to protect endangered species—both plant and animal was stressed whilst the economic value of National Parks for controlling run-off and preventing erosion and stabilising climatic conditions was mentioned.

On zoning within Parks, it was stated as desirable that the greatest part of the Park should be kept in its natural wild state and that any improvements should be restricted to as small an area as possible.

It is considered that the results of the conference should be beneficial in furthering a uniform observance of the National Park concept throughout the World. The Conference should result in the establishment of new Parks and Reserves and should be instrumental in having appropriate areas of natural habitats set aside where, at the present time, animals and birds are threatened with extinction.

During, and after the Conference, visits were made to Mt. Rainier, Olympic, Yellowstone and the Grand Tetons National Parks in the United States of America and the Banff and Jasper National Parks in Canada. A visit was also made to British Columbia where there are no National Parks as such, but where there are Provincial Parks which, generally speaking, are wilderness areas.

A National Forest in the United States of America was also visited. This forest is managed for multiple use, one use being recreation. Here I saw a unit of fifty-four camping sites prepared for use by holidaymakers, the natural tree cover being retained.

The dominant note of the Conference was the necessity for setting aside sufficient of our Natural resources as National Parks, so that they could be retained in their primitive condition, not only for present generations, but for the generations to come.

I learnt much both at the Conference and on visitation to the various Parks that will be of assistance in the administration of National Parks in Queensland. There were many papers prepared for the use of delegates at the Conference and copies were secured for filing in our Library for reference and other purposes.

Might I quote from a message to the Conference from John F. Kennedy, President of the United States of America in which he stated 'National Parks and Reserves are an integral aspect of intelligent use of natural resources. It is the course of wisdom to set aside an ample portion of our natural resources as National Parks and Reserves, thus ensuring that future generations may know the majesty of the earth as we know it today.'

In conclusion I should like to say that I am most appreciative of the action of the Government and of the late Honourable O. O. Madsen, the Minister for Agriculture and Forestry at the time, in permitting me to attend the Conference. My thanks are extended to all concerned."

During the year 13 new Parks were proclaimed and an area added to an existing reservation. The total area of National Parks and Scenic Areas as at 30th June, was 946,590 acres and the milestone of the first million acres is in sight.

New areas comprised R. 134 in the parishes of Whyanbeel, Victory, and Dedin (7,300 acres), R. 686 in the parish of Lacy (2,760 acres), R. 678 in the parish of Ossa (1,340 acres); reservations surrounding six waterfalls in the Herbert River Gorge, (7,230 acres), R. 863 in the parish of

Tamborine (Cedar Creek Falls, 412 acres), R. 320 in the parish of Shaw (Seaforth Island, 50 acres), R. 1106 parish of Toolara (5 acres, Aboriginal Bora Ring). An area of 70 acres was set aside as a Scenic Area and then added to R. 60 Ossa (Cape Hillsborough), 3½ acres added to Natural Bridge reservation.

An area of 581 acres was excised from National Park Reserve 227 in the parishes of Conway and Molle in connection with the Shute Harbour project. By way of exchange for this excision an area of about 800 acres was set aside as Scenic Area.

The following table illustrates the present position as against that of 30th June, 1962:—

	National Parks		Scenic Areas		Total Reservations	
	No.	Acres	No.	Acres	No.	Acres
30-6-1962	63	893,962	167	34,038	230	928,000
30-6-1963	71	911,252	169	35,338	240	946,590

An amount of £57,561 was expended on National Parks during 1962-63, an increase of £7,565 on the previous year. Total expenditure on Parks to 30th June, 1963, was £757,604.

Existing walking tracks were maintained and improved whilst 3 miles 14 chains of new tracks were constructed at:— Newry Island (120 chains), Clump Mountain (93 chains), Ravensbourne (32 chains), Lamington (7 chains), and Mount Glorious (2 chains). The total length of the track system at 30th June, 1963, was 257 miles 30 chains.

Some other features of the year's work included—

*Springbrook*—concrete footbridge at the head of Twin Falls completed.

*Tamborine*—new composite conveniences built at the Knoll.

*Montville*—concrete footbridge over Skene Creek below the falls completed.

*Mount Glorious*—composite conveniences at Jolly's Lookout provided and road graded into Boombana.

*Cunningham's Gap*—new workers' accommodation provided and camping area developed.

*Lamington*—staging camp completed at "Rat-a-tat".

*Noosa*—workers' accommodation completed.

*Numinbah*—new workers' accommodation almost completed.

*Killarney*—considerable improvement effected to picnic area at entrance.

*Long Island*—living quarters provided for the resident ganger.

*Eungella*—improvements to picnic grounds and additional facilities for visitors, further tree planting at Broken River, entrance signs at Valley View and Sky Window almost completed.

*Lake Eacham*—new ladies' dressing shed almost completed, provision of gravelled road to the picnic shed, commencement of work on re-construction of the main landing.

*Palmerston*—married quarters for resident overseer completed and table/seat units provided at several picnic areas.

*Clump Mountain*—the new track work completed access to Bicton Hill where a "window" was opened to provide extensive views of the coastline and adjacent islands.

During the year approval was given to second a trained Forester with a B.Sc. (For.) degree for work on National Parks. It is hoped that such officer can take up full-time duties on National Parks in 1964.

An innovation during the year was the commencement of patrol work on selected week-ends by Forest Officers on several of the Parks.

The first patrol was carried out during the Queen's Birthday week-end, on the 9th and 10th June. The Parks

patrolled were Lamington, Cunningham's Gap, Mount Glorious, Tamborine, Springbrook, Burleigh Heads, Noosa, Ravensbourne, and Killarney. Funds permitting, it is hoped to continue such patrols from time to time.

Apart from the protective aspect, the officers were available to inform and advise tourists and visitors.

Officers were asked to furnish individual reports following the patrol with their observations and advices of any shortcomings.

Generally speaking it was found that very few breaches were being committed, the only offences being of a minor nature.

One officer who sought suggestions from some adult visitors reported they "were strongly in favour of doing as little as possible so as to keep things completely in their natural state. Present policy of providing picnic facilities at suitable places and otherwise providing walking tracks with minimum disturbance seems entirely satisfactory."

It is felt the Department will learn much from these patrols which will be of benefit in the administration of the Parks.

A recent visitor to this State addressed the following letter to this Department on her return home.

"29 Carlos Road, Artarmon, N.S.W.  
12th May, 1963.

The Director,  
National Parks Trust,  
Queensland.

Sir,

Yesterday I left Queensland and am headed towards Sydney and resumption of work after several weeks' leave spent in your state.

I feel I should be remiss if I left without letting you know of my deep appreciation for the work you and your officers are doing in the preservation of some of our country's beauty spots.

In every area under your control which we visited we were impressed by the organisation which supplied essential information to tourists, which provided shelter and picnic

spots without spoiling the natural beauty of surroundings which ensured that the forest and mountain tracks were kept open but remained unobtrusive and which appeared to be able to so influence the public that all spots were clean and free from litter.

We visited such spots as Springbrook and the Natural Arch as well as the smaller more frequented Parks and had nothing but pleasure from our visits.

I should be grateful if you could make it known to those who work with you that the enjoyment of our stay in your state was very largely owing to the work of your Department.

Yours appreciatively,

E. LEE (Miss)."

## HARVESTING AND MARKETING

### General

In comparison with operations during 1961-62, removals of milling timber showed an overall increase of 7,000,000 super. feet to a total of nearly 194,000,000 super. feet (hoppus, nett). Sales of Plantation Thinnings showed a rise of 4,500,000 super. feet. Calculations of sustained yield for Eucalypt hardwood areas resulted in a slightly smaller volume of the species being offered for sale. The advantages of operation on the basis of sustained yield were outlined in the introduction to last year's report.

Although sales of Crown timber increased, preliminary figures indicate that there was a corresponding decrease in the use of log timber obtained from alienated land and by import.

Arrangements were completed for the sale of a quantity of pulpwood to be obtained from plantations of *Pinus* species, and thinnings of Hoop Pine plantations were used, for the first time, for the commercial production of particle board. Such uses provide outlets for small material, not required for sawmilling, which it is necessary to remove as thinnings.

### Mill Logs Cut—Crown and Private Lands

This table shows logs cut by all mills in the State, annually for the periods indicated:—

Year	Queensland Grown							Imported	Total	
	Hoop and Bunya Pine	Kauri Pine	Plantation Thinnings	Cypress Pine	Hardwood	Cabinet Woods	Miscellaneous			
(1,000 superficial feet)										
1957-58 .. .. .	49,517	3,030	19,460	56,744	257,472	26,678	44,785	14,396	472,082	
1958-59 .. .. .	43,729	1,897	19,931	54,072	252,500	26,631	48,458	17,365	464,583	
1959-60 .. .. .	37,614	2,081	26,420	55,738	264,069	24,644	49,595	19,944	480,105	
1960-61 .. .. .	35,027	2,223	25,959	50,473	252,482	27,389	48,558	17,091	459,202	
1961-62 .. .. .	25,822	2,124	26,632	45,275	215,450	20,914	39,791	12,612	388,620	
1962-63 Estimated ..	27,000	2,000	31,000	47,000	206,000	21,000	40,000	13,000	387,000	

### Mill Logs—Crown Lands

The following are the annual quantities of Mill Logs obtained from Crown Lands as from 1953-54:—

Super. feet				Super. feet			
1953-54 .. .. .	240,000,000	1958-59 .. .. .	228,000,000				
1954-55 .. .. .	224,000,000	1959-60 .. .. .	239,000,000				
1955-56 .. .. .	223,000,000	1960-61 .. .. .	219,000,000				
1956-57 .. .. .	221,000,000	1961-62 .. .. .	187,000,000				
1957-58 .. .. .	213,000,000	1962-63 .. .. .	194,000,000				

A comparison of quantities of the various species of log timber cut from Crown Forests during the past five years is illustrated hereunder:—

Year	Hoop and Bunya Pine	Kauri Pine	Cypress Pine	Forest Hardwoods	Scrub Hardwoods	Cabinet Woods	Miscellaneous	Plantation Timbers
(1,000 superficial feet)								
1958-59 .. .. .	40,808	1,951	24,907	83,284	10,162	19,139	27,130	20,296
1959-60 .. .. .	34,998	2,139	26,835	88,245	12,761	17,894	28,284	27,565
1960-61 .. .. .	31,849	2,188	24,093	76,879	11,302	18,118	28,601	26,234
1961-62 .. .. .	22,324	2,171	23,731	62,722	9,695	15,726	23,599	26,660
1962-63 .. .. .	24,393	2,253	26,037	60,479	9,029	17,302	23,108	31,116

## The Timber Business

(a) Mill Logs—	1961-62	1962-63
Hoop and Bunya Pine .. .. .	22,324,000 super. feet	24,393,000 super. feet
Forest Hardwoods .. .. .	62,722,000 super. feet	60,479,000 super. feet
Scrub Hardwoods .. .. .	9,695,000 super. feet	9,029,000 super. feet
Cypress Pine .. .. .	23,731,000 super. feet	26,037,000 super. feet
Kauri Pine .. .. .	2,171,000 super. feet	2,253,000 super. feet
Cabinet Woods .. .. .	15,632,000 super. feet	17,265,000 super. feet
Miscellaneous Species .. .. .	23,599,000 super. feet	23,108,000 super. feet
Plantation Timbers .. .. .	26,660,000 super. feet	31,116,000 super. feet
Limb Logs, Head Logs, Stumps and Fitches .. .. .	94,000 super. feet	37,000 super. feet
<b>Total Crown Mill Logs .. .. .</b>	<b>186,628,000 super. feet</b>	<b>193,717,000 super. feet</b>
(b) Construction Timbers—		
Headstocks, Transoms, Crossings, Braces, &c. .. .. .	126,831 super. feet	264,438 super. feet
Sleepers .. .. .	607,950 pieces	702,971 pieces
Girders, Corbels, Piles, Sills, and Girder Logs .. .. .	103,809 lineal feet	61,600 lineal feet
	598,781 super. feet	281,836 super. feet
Poles .. .. .	381,679 lineal feet	187,505 lineal feet
House Blocks .. .. .	41,774 lineal feet	54,432 lineal feet
Mining Timbers .. .. .	221,554 lineal feet	247,780 lineal feet
	82,101 pieces	83,260 pieces
Gross Receipts from Timber Sales, &c. .. .. .	£1,744,291	£1,784,623
Net Revenue .. .. .	£963,633	£904,506

### Logging

During 1962-63 the following quantities were hauled by, and payments made to, contractors to the Department:—

Class	Quantity	Expenditure	
		Super. feet	£ s. d.
<b>South Queensland—</b>			
Hoop and Bunya Pine .. .. .	15,980,177		
Forest Hardwoods .. .. .	1,292		
Scrub Hardwoods .. .. .	91,870		
Miscellaneous .. .. .	79,351		
Cedar .. .. .	5,226		
	16,157,916	174,768	17 3
<b>North Queensland—</b>			
Cabinet Woods .. .. .	773,242		
	773,242	8,136	14 11
<b>Totals .. .. .</b>	<b>16,931,158</b>	<b>182,905</b>	<b>12 2</b>

### Rosewood

The following figures show the position regarding supply and sale of Rosewood during the year:—

In Stock 1st July, 1962 .. .. .	51 Tons 2 cwt.
Purchased during year .. .. .	NIL
Exported to Hong Kong .. .. .	27 Tons 9 cwt.
On hand 30th June, 1963 .. .. .	23 Tons 13 cwt.

No Sandalwood was purchased or exported during the year.

### Hewn Timber Prices

No price change was made during the year.

### Timber Felling and Timber Getting Award—State

During the twelve months under review the basic wage rate under the above Award varied as follows:—

On 6th May, 1963—£15 12s. 0d. to £15 14s. 0d.

### Constructional Timbers—Departmental Contracts

A comparison of supply of constructional timbers from Crown lands with the two previous years is given hereunder:—

Class of Timber	1960-61	1961-62	1962-63
Sleepers .. .. .	413,998 pieces	245,562 pieces	339,103 pieces
Crossings .. .. .	148,569 super. feet	35,411 super. feet	103,569 super. feet.
Transoms .. .. .	174,209 super. feet	21,543 super. feet	72,724 super. feet
Bridge Timber (Round) .. .. .	27,047 lineal feet	22,970 lineal feet	15,590 lineal feet
Bridge Timber (Square) .. .. .	18,534 super. feet	416 super. feet.	1,702 super. feet

### Logging Roads—1962-63

The Department's road programme for the year constituted 67 miles of construction. Location and working surveys covering 75 miles were carried out.

Expenditure from Forestry Votes was as follows:—

	£
New Construction .. .. .	135,533
Maintenance .. .. .	77,504
Subsidies to Shire Councils .. .. .	23,544
Workers' Compensation .. .. .	1,191
Pay Roll Tax .. .. .	2,734
Surveys .. .. .	1,203
Fares and Freights .. .. .	4,202
Resumption for Access .. .. .	2,079
	<b>£247,990</b>

### Sawmills Licensing

Number of mills in active operation during the year was 596 during the first quarter, 611 during the second quarter and 596 during the third quarter.

Figures for the final quarter are incomplete but indicate that the number of operating mills should approximate that shown for the third quarter.

The number of licenses current shows a further reduction, due in the main, to the non-renewal of licenses covering small mills that have been inoperative for a considerable period, most of which held licenses restricted to the operation of private timber. This trend is expected to continue with the diminishing cut of private timber.

The Sawmill Licensing Committee met at regular intervals during the year for the consideration of matters pertaining to Sawmill Licensing and submitted its recommendations to the Conservator of Forests.

The following table sets out the position with regard to Sawmill Licenses as at the 30th June, 1963:—

Number of Licenses as at 30-6-62	Classification	New Licenses Issued	Changes in Classification		Licenses not Renewed			Current Licenses as at 30-6-63	Total as at 30-6-63
			Plus	Minus	Refused	Relinquished	Under Consideration		
656	General mills .. .. .	1	..	1	6	15	6	629	635
14	Case mills .. .. .	1	..	..	..	..	..	15	15
54	Sleeper mills .. .. .	..	..	..	4	4	2	44	46
19	Other restrictions .. .. .	..	..	..	1	1	..	17	17
68	Re-saw and dressing .. .. .	5	1	..	..	2	..	72	72
811		7	1	1	11	22	8	777	785

#### Offences

During the year ended 30th June, 1963, officers reported 172 breaches of the Acts and Regulations administered by the Department.

Proceedings were successfully instituted against five persons and fines totalling £68 7s. 7d. imposed.

In 61 cases of unauthorised timber operations, where it was considered the offences did not warrant proceedings, the value of the timber was collected and warnings issued. In some instances part of the costs of investigations was charged. Appropriate action was taken in other cases.

As a result of action taken in all cases an amount of £4,253 2s. 2d. was recovered by the Crown in timber revenue.

### FOREST PRODUCTS RESEARCH

#### I. Engineering and Seasoning

(a) *Timber Seasoning*.—Requests for assistance in solving seasoning problems were received from 22 sawmills during the year. Sawmills were visited and methods of improving seasoning methods were discussed.

During the year a study on the drying of Brush Box was carried out to compare the operation of a conventional steam kiln and an exhaust gas heated kiln. There was no appreciable reduction in drying time.

(b) *Sawmill Engineering*.—Many sawmillers again availed themselves of this service during the year. A design was prepared for a new mill at Mareeba and advice was given to several other mills on modifications to plant.

#### II. Economics

Studies in sawmill economics were continued, viz.:—

(a) *Hoop Pine—Plantation Thinnings*.—A series of studies covering six mills was commenced during the year. Studies at two mills were completed at the end of the year.

(b) Single studies were carried out at a hardwood mill, a cypress mill and two thinnings mills, one cutting a sample of Kauri Pine from areas to be clear-felled and one cutting the first large sample of *Pinus caribaea* available from early experimental plantings.

(c) A small pilot study of Kauri Pine from areas to be clear-felled was carried out at the Experimental Yard.

(d) During the year, with the co-operation of the Queensland Timber Board State Committee, Timber Market Surveys were initiated. Surveys of the movement of hardwood and cypress pine to various markets are under way and the results are encouraging.

#### III. Wood Anatomy and Utilisation

##### 1. GENERAL

(a) The usual facilities for timber identification and advice upon timber properties and utilisation were made available to the timber industry and a total of 1,087 personal enquiries were handled. Timber specimens identified numbered 5,539. In addition to data on timber identification, information was supplied in relation to uses, properties, preservation and general seasoning of timber and on forest products other than timber.

(b) Close liaison was maintained with the Queensland Government Botanist in botanical matters affecting the timber industry and his valuable assistance is gratefully acknowledged.

(c) Co-operation was maintained with the Standards Association of Australia with special attention to grading rules for Cypress Pine, constructional hardwoods, railway sleepers and standard naming of commercial timbers.

(d) In the building industry field apart from work in Brisbane, ten visits were made to six country districts by the Inspector under "The Timber Users' Protection Acts". During these country visits lectures were delivered to master builders and building supervisors. Of 31 complaints received under these Acts, 18 were settled between the parties, six complaints were lodged with the Magistrate's Court and five convictions were secured, some from 1961-62 lodgments.

(e) The installation of a number of up-to-date pressure-preservative cylinders has greatly facilitated the more efficient use of timber, particularly sapwood of Eucalypt hardwoods which formerly was wasted. Properly treated Hoop Pine (*Araucaria cunninghamii*) can now be used for external joinery purposes, relieving a situation where the standard timber for this purpose, Northern Silky Oak (*Cardwellia sublimis*) was unable to meet the demand. It is also available for other purposes where high fungal and insect resistance are essential.

#### 2. WOOD QUALITY ASSESSMENT AND IMPROVEMENT

(a) Wood samples were taken from eight potential seed orchard trees (30 to 42 years old) of Hoop Pine (*Araucaria cunninghamii* Ait.). Basic density and spiral grain were considered to be within acceptable limits in all of the trees. Full assessment of other characteristics is not complete.

It is interesting to note that micellar angle values were generally lower than those recorded for *Pinus* spp. at comparable ages and that some trees showed evidence of early maturity of tracheid length not previously noted in this species.

(b) A check of the density of the wood of *Pinus caribaea* Morelet over its full range in this State has almost been completed. Stands aged from 6 to 13 years have been sampled. The recorded range in average basic density to date (21.9-31.4 lb./cu. ft.) is very similar to that for (i) Hoop Pine (ii) 10-20 years old South Australian grown *P. radiata* and (iii) 23 years old New Zealand grown *P. radiata*.

(c) In investigating inheritance of initial tracheid length in *P. elliotii* var *elliotii* a study was made of 25 individual samples from each of seven one-year old seedling populations, the progeny of intraspecific hybridisation between one male and seven female parents. Initial tracheid length (in the first-formed secondary xylem at the base) and whole-seedling average tracheid length both varied significantly between crosses.

#### 3. DEFECT STUDIES

Further evidence of the activity of root-rot fungi in Pine plantations has been noted during examination of butt logs of *Pinus* spp. in previously thinned stands.

#### IV. Wood Chemistry and Preservation

The year under report has resulted in the installation of a total of six vacuum-pressure cylinders using multi-purpose water-borne formulations with a charge capacity in excess of 30,000 super. feet and a potential of two charges per 8-hour day.

##### 1. PRESERVATION

The number of approvals under "The Timber Users' Protection Acts" now totals 124. These include approvals for treatment using boron salts, sodium fluoride and dieldrin for veneers, and copper-chrome-arsenic formulations for general purpose preservation.

Confirmation was obtained of the effect of wood extractives, water quality and high ambient temperatures upon the solubility and sludging of the copper-chrome-arsenic formulations.

Insect and fungal attack prior to treatment and during pre-seasoning has been a major problem in commercial operations and involves rigid mill yard hygiene.

Studies were made into alternative methods of treatment associated with material above fibre saturation point. This has led to the development of a new process termed The Vacuum-Pressure Diffusion Process. It was found that for local species and particularly for green or semi-green material, the evacuation time and the actual level of vacuum are most significant. Both the rate and efficiency of treatment increases with vacuum and to date an optimum vacuum range in excess of 28.5 in. has been found. The effect of non-ionic penetrating agents has been studied and found to increase absorption.

Provisional patents upon the above have been taken out by the Department.

Inspections were made of field exposure experiments and, in co-operation with the Division of Forest Products and the Division of Tropical Pastures, an experiment on treatment of Brigalow fence posts was carried out.

## 2. CHEMISTRY (Plywood and Veneer).

Tests have been carried out in co-operation with the industry into the utilisation of Tulip Oak from Mackay areas, for face veneer quality, with unsatisfactory results.

Tests covered plywood qualities, adhesives, defects in painting of veneer covered boards, and the use of plastic floor finishes.

*Chemical Laboratory.*—The numbers of samples submitted for examination have been as follows:—

Moisture Content samples	..	3,355
Preservative Spot Test samples	..	1,136
Plywood and Adhesives	..	30
Samples for Chemical Analysis	..	484 (involving 1,400 determinations)

Total .. .. . 5,005

## 3. INTERVIEWS

A total of 606 interviews and discussions upon matters relating to functions of the Section was recorded for the year. In addition field trips were made to a number of treatment plants.

## V. Insects of Forest Products Importance

Losses due to attacks by borers and white ants on logs, seasoned timber and wooden structures continue to warrant investigation of the major pests of which insufficient is known, viz., the dry wood white ants, the Anobiids including the Queensland pine beetle, the jewel beetles (Buprestidae) and the log borers (Bostrychidae, Platypodidae and Scolytidae).

Work has been commenced to determine wood species susceptibility to the dry wood white ant, *Caloterms primus* (Calotermitidae), and the detailed investigation of other timber pests will be initiated as opportunity permits. Numerous enquiries relating to the hoop pine jewel beetle, *Prospheres aurantiopictus* (Buprestidae) during early summer 1962 probably relate to weather conditions during logging, two years or more previously. In North Queensland the incidence of log borers (Platypodidae and Scolytidae) continued at a level warranting serious consideration in the logging programmes and yard management of timber mills if losses are to be reduced.

A re-inspection of the 2,645 houses fumigated for European House Borer and 1,500 adjacent houses has been completed and no evidence of live larvae was found.

## VI. Biometrics

### 1. STATISTICAL

During the year 90,263 cards were punched for log samples, mill studies and Forest Inventory Surveys. Of these 60,263 were 65-column cards and 30,000 were 80-column cards.

The application of punch cards to mill studies continued successfully. Altogether 10 mill studies were processed. The data is now punched on 80-column cards and use is made of the facilities of the Queensland University Computer Centre in processing it.

### 2. BIOMETRICAL

Analysis of experimental data from silvicultural research projects was carried out as well as for Forest Products Research experiments.

Programmes have been devised which allow a lot of routine work to be done on the University Computer.

## VII. Experimental Yard

The new yard is now almost complete and will be ready for operation by the 1st July. Most plant and stock have now been transferred from the old yard at Ipswich Road.

### STAFF

At the 30th June, 1963, there were 390 salaried officers on the staff, comprised of 156 in Head Office and 234 at district centres. This total is 15 more than at the same time in 1962. The number of wages staff employees increased from 2,138 to 2,190.

Twenty-one salaried officers left the Department during the year and five officers—Messrs. E. P. Suchting, P. P. Falvey, A. Wallace, F. Skinner, and M. A. Cameron retired.

Mr. D. A. Gilmour was awarded a Research Scholarship to the Australian National University, Canberra, and commenced two (2) years' special leave for that purpose on 6th May, 1963.

During the year Mr. C. J. J. Watson was seconded to the Australian Forestry School, Canberra, for three months to lecture on wood structure and timber identification.

It is with regret that the death is recorded of Mr. W. P. Coogan of Head Office. Deepest sympathy is extended to his bereaved relatives.

### ACKNOWLEDGEMENT

I desire to record my appreciation of the loyal and efficient service of all members of the staff during the past year.

V. GRENNING,  
Conservator of Forests.

## APPENDICES

### APPENDIX A

#### Return of Timber, &c., Removed from Crown Lands during the Year ended 30th June, 1963

SPECIES	QUANTITY	
	Super. feet	Super. feet
Milling Timber—		
(a) Native Forests—		
Hoop and Bunya Pine—		
Ply .. .. .	2,971,914	
Logs .. .. .	10,859,150	
Tops .. .. .	10,561,671	
		24,392,735
Kauri Pine .. .. .	2,252,800	
Cypress Pine .. .. .	26,037,250	
Forest Hardwoods .. .. .	60,478,493	
Scrub Hardwoods .. .. .	9,028,499	
Cabinet Woods .. .. .	17,265,107	
Miscellaneous Species .. .. .	23,108,451	
Limb Logs, Head Logs, Stumps and Flitches .. .. .	37,198	
		138,207,798
(b) Plantation—		
Hoop Pine .. .. .	23,906,407	
Bunya Pine .. .. .	108,205	
Kauri Pine .. .. .	355,875	
Slash Pine ( <i>Pinus elliotii</i> ) .. .. .	2,982,716	
Loblolly Pine ( <i>Pinus taeda</i> ) .. .. .	1,566,481	
<i>Pinus potula</i> .. .. .	1,954,735	
<i>Pinus radiata</i> .. .. .	194,413	
Silky Oak .. .. .	5,624	
Hardwood (Rose Gum) .. .. .	34,119	
Exotics (Miscellaneous) .. .. .	7,868	
		31,116,443
		193,716,976
	Expressed as Superficial feet (Hoppus)	
	Log Measure	
Other Classes—		
Sleepers Hewn .. .. .	21,549 pieces	818,862
Sleepers Sawn—5 ft. .. .. .	114,170 pieces	3,196,760
Sleepers Sawn—7 ft. .. .. .	314,245 pieces	11,941,310
Sleeper Blocks (as sleepers contained) .. .. .	253,007 pieces	9,108,252
Transoms, Crossings, Headstocks, Longitudinals .. .. .	264,438 superficial feet	423,101
Girders, Corbels, Piles, Sills, Kerb Logs .. .. .	61,600 lineal feet	1,108,800
Girder Logs .. .. .	281,836 superficial feet	281,836
Poles .. .. .	187,505 lineal feet	1,312,535
House Blocks .. .. .	54,432 lineal feet	326,592
Fencing Material—Split .. .. .	238,498 pieces	2,146,482
Fencing Material—Round .. .. .	52,671 lineal feet	131,678
Mining Timber—Split .. .. .	83,260 pieces	333,040
Mining Timber—Round .. .. .	247,780 lineal feet	495,560
Stumps .. .. .	6,949 superficial feet	6,949
		31,631,757

### Other Classes—continued—

Fuel .. .. .	40,450 tons
Charcoal .. .. .	3 bags
Trees and Plants (number) .. .. .	300,045
Sand, Gravel, Soil, Antbed, &c. .. .. .	483,077 cubic yards
Freestone .. .. .	5,791 cubic feet
Fibre, Bark and Dry Leaves .. .. .	37 bags
Duboisia .. .. .	14,123 pounds
Flora .. .. .	705 pieces
Peat .. .. .	236 bags
Mulga Wood .. .. .	87 tons
Lawyer Cane .. .. .	4 tons

### APPENDIX B

#### Total Receipts for the Year ended 30th June, 1963

RECEIPTS FROM DISTRICTS		TOTALS	
		£	s. d.
Group 1—South Queensland (Beerburrrum, Beerwah, Benarkln Bundaberg, Fraser Island, Gallangowan, Gympie, Imbil, Jimna, Kalpowar, Maryborough, Monto, Murgon, Yarraman)		962,516	15 5
Group 2—North Queensland (Atherton, Cairns, Cooktown, Charters Towers, Herberton, Hughenden, Ingham, Innisfail, Port Douglas, Ravenswood, Townsville)		417,796	12 7
Group 3—Dalby, Roma, Taroom, Charleville, Mitchell, Quilpie		96,415	1 6
Group 4—Warwick, Goondiwindi, Inglewood, St. George, Stanthorpe, Cunnamulla		61,203	8 10
Group 5—Mackay, Rockhampton, Clermont, Bowen, Proserpine, Emerald, Springsure, Theodore		40,297	0 4
Group 6—Barcardine, Blackall, Jundah, Longreach, Muttaborra, Stonehenge, Winton, Aramac, Isisford, Jericho		960	15 10
Group 7—Cloncurry, Boulia, Kynuna, Mackinlay, Richmond		4,569	11 6
Group 8—Burketown, Coen, Croyden, Georgetown, Normanton, Thursday Island		237	10 0
		£1,583,996	16 0
OTHER RECEIPTS			
Forestry and Lumbering .. .. .		155,746	9 9
Sale of Plants, Material, &c. .. .. .		11,337	3 0
Licenses* (See note after Appendix C) .. .. .		3,316	11 0
Rents and Grazing Dues .. .. .		11,175	8 6
†Fancywoods .. .. .		968	11 3
†Miscellaneous (Kiin A/c, Forfeited Wages &c.) .. .. .		18,081	19 0
		£1,784,622	18 6
†(previously included with Sale of Plants &c.)			
Plant Hire—		£	s. d.
Charged Loan Fund Projects .. .. .		193,121	16 6
Trust Fund Projects .. .. .		79,029	7 11
Revenue Fund Projects .. .. .		1,361	3 4
Remitted to Treasury .. .. .		273,512	7 9
		£2,058,135	6 3



## APPENDIX C

## Proceeds of Sales of Timber, &amp;c., for the Period 1st July, 1959, to 30th June, 1963

Groups*	1959-60		1960-61		1961-62		1962-63	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Group 1 .. .. .	1,147,555	8 1	1,209,080	4 8	929,551	3 6	962,516	15 5
Group 2 .. .. .	396,262	12 4	468,668	16 4	413,157	6 6	417,796	12 7
Group 3 .. .. .	124,987	16 9	121,174	0 6	92,704	11 3	96,415	1 6
Group 4 .. .. .	78,919	14 5	79,615	12 9	65,935	4 4	61,203	8 10
Group 5 .. .. .	53,722	6 11	60,250	11 2	50,695	6 2	40,297	0 4
Group 6 .. .. .	1,451	13 6	1,410	10 9	1,065	1 3	960	15 10
Group 7 .. .. .	379	14 2	287	12 1	1,076	2 10	4,569	11 6
Group 8 .. .. .	7	0 0	1	10 0	4	0 0	237	10 0
<b>Receipts—</b>	<b>1,803,286</b>	<b>6 2</b>	<b>1,940,488</b>	<b>18 3</b>	<b>1,554,188</b>	<b>15 10</b>	<b>1,583,996</b>	<b>16 0</b>
Forestry and Lumbering .. .. .	347,525	11 1	299,108	3 8	154,927	9 3	155,746	9 9
Sale of Plants, Material, &c. .. .. .	15,253	14 11	26,209	5 4	21,782	18 7	11,337	3 0
Licenses† .. .. .	2,921	1 8	3,138	3 4	3,442	3 4	3,316	11 0
Rents and Grazing Dues .. .. .	9,716	3 11	9,677	11 1	9,950	2 1	11,175	8 6
Fancywoods‡ .. .. .	..	..	..	..	..	..	968	11 3
Miscell. (Kiln A/c, forfeited wages &c.)‡	..	..	..	..	..	..	18,081	19 0
	<b>2,178,702</b>	<b>17 9</b>	<b>2,278,622</b>	<b>1 8</b>	<b>1,744,291</b>	<b>9 1</b>	<b>1,784,622</b>	<b>18 6</b>

\* For Districts within the groups, see Appendix B.

† Includes the following license fees :—Fuel, Quarry, Sawmill, Apiary, Forest Products, Sales Permit.

‡ Previously included with sale of plants, materials, &amp;c.

## APPENDIX E

## Comparative Statement of Expenditure for Years 1961-62 and 1962-63

APPENDIX D					1961-62	1962-63
Constructional Timber Supplied During Financial Year 1962-63 under Forestry and Lumbering Operations					£	£
Class of Timber	Quantity	Sales Value				
		£ s. d.				
Hewn Crossings ..	23,935 superficial feet	1,184 15 8	Revenue—			
Sawn Crossings ..	79,634 superficial feet	3,941 17 8	Salaries .. .. .		479,291	500,129
Headstocks and Braces ..	1,702 superficial feet	136 16 0	Travelling Expenses and Incidentals ..		29,698	31,297
Hewn Transoms ..	22,499 superficial feet	1,226 3 11	Fares, Printing, Stores, &c. .. .. .		4,990	4,988
Sawn Transoms ..	50,225 superficial feet	2,737 5 3	Cash Equivalent of Long Service Leave ..		2,768	3,991
Piles .. .. .	8,410 lineal feet	3,318 17 6	National Parks .. .. .		44,000	57,561
Girders—Dressed ..	7,180 lineal feet	6,962 16 7	Loan—			
House Blocks ..	540 lineal feet	162 0 0	Reforestation .. .. .		1,765,446	1,864,257
Hewn Sleepers ..	2,822 pieces	1,889 14 9	Acquisition of Land for Forestry ..			
Sawn Sleepers ..	83,814 pieces	56,817 14 9	Purposes .. .. .		9,979	7,256
Sleeper Blocks (as sleeper blocks contained) ..	253,007 pieces	101,196 15 11	Access Roads .. .. .		143,433	144,689
Split Posts and Rails, &c. ..	21,102 pieces	4,020 5 8	Purchase of Plant .. .. .		138,781	189,429
			Purchase of Radio Equipment .. .. .		..	9,950
<b>Total .. .. .</b>		<b>£183,595 3 8</b>	Trust—			
			Hardwood Supplies to Railway Department and Others .. .. .		131,020	171,099
			Harvesting and Marketing Timber .. ..		508,250	546,125
			Access Roads—Maintenance and Subsidies .. .. .		92,741	103,301
			Maintenance of Capital Improvements ..		48,598	59,360
			Maintenance of Plant .. .. .		211,109	236,506
			Interest and Redemption on Loans .. ..		963,683	904,506
			<b>Total .. .. .</b>		<b>£ 4,573,787</b>	<b>4,834,444</b>

## APPENDIX F

## Net Area of Plantation Established 1st April, 1962 to 31st March, 1963

Species	Brisbane	Gympie	Mackay	Maryborough	Monto	Murgon	North Queensland	Warwick	Yarraman	Queensland Total
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
<i>Softwoods</i>										
A. Native Conifers—										
Hoop Pine .. .. .	53.0	456.9	..	13.0	218.6	439.5	99.5	..	805.4	2,085.9
Kauri Pine .. .. .	..	..	..	..	..	..	2.0	..	..	2.0
Bunya Pine .. .. .	..	15.2	..	..	..	..	..	..	..	15.2
B. Exotic Conifers—										
<i>P. elliotii</i> .. .. .	420.9	408.6	20.0	564.7	..	..	..	18.1	..	1,432.3
<i>P. patula</i> .. .. .	..	1.0	..	..	..	..	..	..	99.7	100.7
<i>P. caribaea</i> .. .. .	10.0	27.0	517.4	35.6	..	..	4.0	..	..	594.0
<i>P. radiata</i> .. .. .	..	..	..	..	..	..	..	161.9	..	178.4
Other Exotic Conifers .. .. .	..	2.4	12.5	..	..	..	..	..	2.2	17.1
C. Broadleaved Softwoods—										
Maple .. .. .	..	4.7	..	..	..	..	..	..	..	4.7
<b>Total—Softwoods .. .. .</b>	<b>483.9</b>	<b>915.8</b>	<b>549.9</b>	<b>613.3</b>	<b>218.6</b>	<b>439.5</b>	<b>105.5</b>	<b>180.0</b>	<b>923.8</b>	<b>4,430.3</b>
<i>Eucalypts</i>										
<i>Euc. saligna</i> .. .. .	40.0	..	..	..	..	..	..	..	..	40.0
<i>Euc. microcorys</i> .. .. .	42.0	..	..	..	..	..	..	..	..	42.0
<i>Euc. pilularis</i> .. .. .	65.3	98.5	1.5	..	..	..	..	..	..	165.3
Other Eucalypts .. .. .	135.9	63.3	1.5	..	..	..	..	..	..	201.2
<b>Total—Eucalypts .. .. .</b>	<b>283.2</b>	<b>161.8</b>	<b>3.0</b>	<b>..</b>	<b>..</b>	<b>..</b>	<b>.5</b>	<b>..</b>	<b>..</b>	<b>448.5</b>
<b>Total—All Species .. .. .</b>	<b>767.1</b>	<b>1,077.6</b>	<b>552.9</b>	<b>613.3</b>	<b>218.6</b>	<b>439.5</b>	<b>106.0</b>	<b>180.0</b>	<b>923.8</b>	<b>4,878.8</b>

APPENDIX G  
Net Area of Effective Plantation Classified into Forestry Districts to 31st March, 1963

Species	Brisbane	Gympie	Mackay	Maryborough	Monto	Murgon	North Queensland	Warwick	Yarraman	Queensland Totals
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
<i>Softwoods</i>										
A. Native Conifers—										
Hoop Pine .. ..	571.8	16,348.5	15.4	150.6	3,222.9	9,560.8	1,055.0	..	18,977.8	49,902.8
Kauri Pine .. ..	4.5	1,559.9	0.7	69.7	2.2	4.9	298.1	..	7.1	1,947.1
Bunya Pine .. ..	1.5	396.3	1.7	4.7	1.2	37.6	0.9	..	58.0	501.9
Other Native Conifers	5.2	51.4	0.6	1.7	1.6	..	0.9	..	1.6	63.0
B. Exotic Conifers—										
<i>P. elliotii</i> .. ..	12,205.2	8,459.3	2,374.8	10,515.6	70.5	54.3	7.8	754.4	916.4	35,358.3
<i>P. taeda</i> .. ..	3,313.0	105.1	9.8	54.1	1.0	116.2	13.7	224.7	41.4	3,879.0
<i>P. patula</i> .. ..	18.7	25.6	7.6	8.1	25.2	123.9	43.6	669.8	3,274.2	4,196.7
<i>P. caribaea</i> .. ..	46.3	124.5	2,829.9	164.2	1.0	..	34.5	..	..	3,200.4
<i>P. radiata</i> .. ..	..	..	..	..	..	..	..	1,684.5	437.7	2,122.2
<i>P. palustris</i> .. ..	252.7	1.8	5.8	1.0	..	..	..	9.2	2.6	273.1
Other Exotic Conifers	83.2	23.2	86.2	17.2	8.5	1.8	10.1	30.4	26.9	287.5
C. Broadleaved Softwoods—										
Silky Oak .. ..	..	175.9	..	..	..	32.1	31.7	..	675.5	915.2
Maple .. ..	..	66.6	..	..	..	2.9	202.3	..	..	271.8
Red Cedar .. ..	..	12.5	..	..	..	..	29.2	..	..	41.7
Others .. ..	0.1	105.2	..	0.3	0.8	0.9	93.6	..	..	200.9
Total—Softwoods .. ..	16,502.2	27,455.8	5,332.5	10,987.2	3,334.9	9,935.4	1,821.4	3,373.0	24,419.2	103,161.6
<i>Eucalypts</i>										
<i>Euc. saligna</i> .. ..	82.2	900.2	..	..	..	33.7	0.7	..	215.7	1,232.5
<i>Euc. paniculata</i> .. ..	229.2	216.2	..	..	..	76.4	35.6	..	459.3	1,016.7
<i>Euc. microcorys</i> .. ..	257.4	17.5	..	..	..	..	27.7	..	28.7	331.3
<i>Euc. pilularis</i> .. ..	226.2	159.3	1.5	..	..	..	0.2	..	..	387.2
Other Eucalypts .. ..	161.2	565.1	1.5	..	..	12.8	4.5	..	12.7	757.8
Total—Eucalypts .. ..	956.2	1,858.3	3.0	..	..	122.9	68.7	..	716.4	3,725.5
Total—All Species .. ..	17,458.4	29,314.1	5,335.5	10,987.2	3,334.9	10,058.3	1,890.1	3,373.0	25,135.6	106,887.1

APPENDIX H  
Areas of Natural Forest Treated  
A.—EUCALYPTS

Sub-District	Treated 1962-63	First Treatment 1962-63	Total as at 30th June, 1963
	Acres	Acres	Acres
Brisbane .. ..	1,312	876	26,623
Beerburrum .. ..	1,695	..	20,123
Gympie .. ..	1,399	1,185	18,498
Imbil .. ..	..	..	159
Mackay .. ..	3,440	3,440	4,588
Emerald .. ..	..	..	33,875
Maryborough .. ..	8,900	3,414	96,709
Bundaberg .. ..	5,326	2,717	32,897
Fraser Island .. ..	2,956	1,605	21,140
Monto .. ..	2,359	1,208	17,365
Murgon .. ..	4,471	3,250	25,358
Atherton .. ..	..	..	3,689
Ingham .. ..	..	..	2,985
Warwick .. ..	763	40	10,017
Inglewood .. ..	..	..	15,697
Yarraman .. ..	28	..	6,391
Benarkin .. ..	45	..	2,051
Dalby .. ..	13,169	11,225	58,492
Total—Eucalypts	45,863	28,960	396,657

APPENDIX H—continued

B.—CYPRESS PINE

Sub-District	Treated 1962-63	First Treatment 1962-63	Total as at 30th June 1963
	Acres	Acres	Acres
Bundaberg .. ..	188	188	2,152
Fraser Island .. ..	..	..	4,424
Monto .. ..	..	..	2,496
Inglewood .. ..	13,405	3,921	85,985
Dalby .. ..	24,508	21,088	195,190
Total—Cypress Pine	38,101	25,197	290,247

APPENDIX H—continued

C.—RAIN FOREST

Sub-District	Second Treatment 1962-63	First Treated 1962-63				First Treatment Completed 1962-63	Total as at 30th June, 1963
		Brushed	Ringbarked and Thinned	Logged under Treemarking Conditions	Trees Interplanted		
	Acres	Acres	Acres	Acres	Number	Acres	Acres
Natural Hoop Pine—							
Maryborough .. ..	..	..	..	..	..	..	65
Bundaberg .. ..	120	..	..	..	..	..	9,922
Total—Natural Hoop Pine	120	..	..	..	..	..	9,987
Natural Rain Forest—							
Atherton .. ..	1,279	868	657	2,424	7,503	657	4,256
Ingham .. ..	318	582	524	1,460	..	524	927
Total—Natural Rain Forest	1,597	1,450	1,181	3,884	7,503	1,181	5,183
Total—Rain Forest .. ..	1,717	1,450	1,181	3,884	7,503	1,181	15,170

## APPENDIX H—continued

Grand Total—	Acres
Eucalypts .. .. .	396,657
Cypress Pine .. .. .	290,247
Rain Forest .. .. .	15,170
	<hr/>
	702,074

## APPENDIX I

State Forests, Timber Reserves, National Parks and Scenic Areas, listed by Forestry Districts and Sub-Districts, at 30th June, 1963

District	Sub-District	State Forests			Timber Reserves			National Parks			Scenic Areas		
		No.	Area		No.	Area		No.	Area		No.	Area	
			A.	R. P.		A.	R. P.		A.	R. P.		A.	R. P.
North Q'land	Atherton ..	25	364,683	3 20	34	1,127,608	0 13	12	197,309	1 28	31	6,627	2 19
	Ingham ..	7	223,893	0 0	11	308,089	2 37	13	198,097	0 0	12	1,300	0 0
	Total ..	32	588,576	3 20	45	1,435,697	3 10	25	395,406	1 28	43	7,927	2 19
Mackay	Mackay ..	6	134,837	0 0	22	150,139	3 19.1	24	255,339	0 0	64	15,618	1 38
	Rockhampton ..	11	253,983	1 0	18	147,773	2 22	1	1,550	0 0	14	1,047	0 0
	Emerald ..	3	132,478	3 35	10	210,762	2 0	2	114,800	0 0	..	..	..
Total ..	20	521,299	0 35	50	508,676	0 1.1	27	371,689	0 0	78	16,665	1 38	
Monto	Monto ..	15	377,198	3 35	39	215,606	1 25	1	3,830	0 0	4	115	2 0
	Kalpowar ..	4	28,077	2 0	14	46,635	0 35	..	..	..	..	..	..
	Total ..	19	405,276	1 35	53	262,241	2 20	1	3,830	0 0	4	115	2 0
Maryborough	Maryborough ..	38	362,104	0 26	18	31,286	0 37	3	10,540	0 0	3	805	0 0
	Fraser Island ..	1	392,138	0 0	..	..	..	..	..	..	..	..	..
	Bundaberg ..	17	144,645	2 23	28	91,252	2 30	..	..	..	..	..	..
Total ..	56	898,887	3 9	46	122,538	3 27	3	10,540	0 0	3	805	0 0	
Dalby	Chinchilla and Barakula ..	13	806,360	3 18	3	17,911	0 0	1	11,400	0 0	..	..	..
	Dalby ..	13	457,545	0 35	5	5,977	0 39	1	13,145	0 0	..	..	..
	Roma ..	12	259,496	1 37	5	112,202	0 0	..	..	..	..	..	..
Total ..	38	1,523,402	2 10	13	136,090	0 39	2	24,545	0 0	..	..	..	
Gympie	Gympie ..	34	291,427	2 37	4	2,704	0 7	..	..	..	3	886	0 0
	Imbil ..	10	142,851	0 0	3	353	0 7	..	..	..	1	640	0 0
	Total ..	44	434,278	2 37	7	3,057	0 14	..	..	..	4	1,526	0 0
Murgon	Murgon ..	10	96,177	0 0	11	54,920	1 3	..	..	..	..	..	..
	Gallangowan ..	4	37,910	0 0	..	..	..	..	..	..	..	..	..
	Jimna ..	4	83,979	0 0	2	5,420	0 0	..	..	..	..	..	..
Total ..	18	218,066	0 0	13	60,340	1 3	..	..	..	..	..	..	
Yarraman	Yarraman ..	19	119,781	0 4	12	15,310	2 9	..	11,085	0 0	1	30	3 0
	Benarkin ..	3	54,362	0 0	5	6,537	2 26	..	..	..	..	..	..
	Total ..	22	174,143	0 4	17	21,848	0 35	..	11,085	0 0	1	30	3 0
Brisbane	Brisbane ..	40	181,452	0 6	22	38,035	2 13	9	77,163	2 0	22	5,527	2 1
	Beerburum ..	34	99,451	1 32	19	6,902	0 35	1	1,669	3 20	10	2,245	2 33
	Total ..	74	280,903	1 38	41	44,937	3 8	10	78,833	1 20	32	7,773	0 34
Warwick	Warwick ..	13	81,814	3 37	4	6,887	1 28	3	15,323	0 0	4	494	3 0
	Inglewood ..	15	347,641	3 35	5	16,764	0 8	..	..	..	..	..	..
	Total ..	28	429,456	3 32	9	23,651	1 36	3	15,323	0 0	4	494	3 0
Grand Total		351	5,474,291	0 20	294	2,619,079	1 33.1	71	911,251	3 8	169	35,338	1 11

At 30th June, 1963—

Total area reserved for—

	A.	R. P.
State Forests .. .. .	5,474,291	0 20
Timber Reserved .. .. .	2,619,079	1 33.1
National Parks .. .. .	911,251	3 8
Scenic Areas .. .. .	35,338	1 11

Total Reservations .. .. .	9,039,960	2 32.1
----------------------------	-----------	--------

## APPENDIX J

## Reservations for the Year ended 30th June, 1963

1st July, 1962, to 30th June, 1963

STATE FORESTS			
	No.	A.	R. P.
At 1st July, 1962 .. .. .	353	5,169,636	3 22
Proclaimed 1-7-62 to 30-6-63 ..	3	33,743	0 0
Proclaimed Converted Timber Reserves .. .. .	15	193,736	3 12
V.C.L. added to existing reserves ..	..	62,271	1 38
Timber Reserves amalgamated with State Forests .. .. .	..	12,995	0 0
Areas released .. .. .	..	-412	0 0
Reserves amalgamated with existing reserves .. .. .	-19	..	..
Recomputation of boundary .. .. .	..	3,452	3 28
Reserves cancelled .. .. .	-1	-1,133	0 0
<b>Total at 30th June, 1963 ..</b>	<b>351</b>	<b>5,474,291</b>	<b>0 20</b>

TIMBER RESERVES			
	No.	A.	R. P.
At 1st July, 1962 .. .. .	327	3,033,259	3 22.1
Proclaimed 1-7-62 to 30-6-63 ..	3	78,638	3 23
Recomputation of boundary .. .. .	..	5	2 36
Areas released .. .. .	..	-11,194	2 36
Reserves cancelled .. .. .	-9	-245,324	2 0
Reserves converted to State Forests or National Parks .. .. .	-27	-236,531	3 12
V.C.L. added to existing reserves ..	..	226	0 0
<b>Total at 30th June, 1963 ..</b>	<b>294</b>	<b>2,619,079</b>	<b>1 33.1</b>

## APPENDIX J—continued

NATIONAL PARKS			
	No.	A.	R. P.
At 1st July, 1962 .. .. .	63	893,961	3 8
Proclaimed .. .. .	8	17,800	0 0
Scenic Areas converted to National Parks .. .. .	..	70	0 0
Recomputation of boundary .. .. .	..	1	0 0
Areas released .. .. .	..	-581	0 0
<b>Total at 30th June, 1963 ..</b>	<b>71</b>	<b>911,251</b>	<b>3 8</b>

SCENIC AREAS			
	No.	A.	R. P.
At 1st July, 1962 .. .. .	167	34,038	1 11
Proclaimed 1-7-62 to 30-6-63 ..	5	1,367	0 0
V.C.L. added to existing reserves ..	..	3	0 2
Reserves amalgamated with Existing Reserves .. .. .	-2	..	..
Reserves amalgamated with National Parks .. .. .	-1	-70	0 0
Recomputation of Area .. .. .	..	-0	0 2
<b>Total at 30th June, 1963 ..</b>	<b>169</b>	<b>35,338</b>	<b>1 11</b>

## APPENDIX K

## Distribution of Personnel, 30th June, 1963

Salaried officers .. .. .	..	..	..	..	..	390
Other employees .. .. .	..	..	..	..	..	2,190
						<b>2,580</b>