

1959

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QUEENSLAND

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# ANNUAL REPORT

OF THE

# DEPARTMENT OF FORESTRY

FOR THE

YEAR 1958-59

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PRESENTED TO PARLIAMENT BY COMMAND

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## TREE BREEDING.



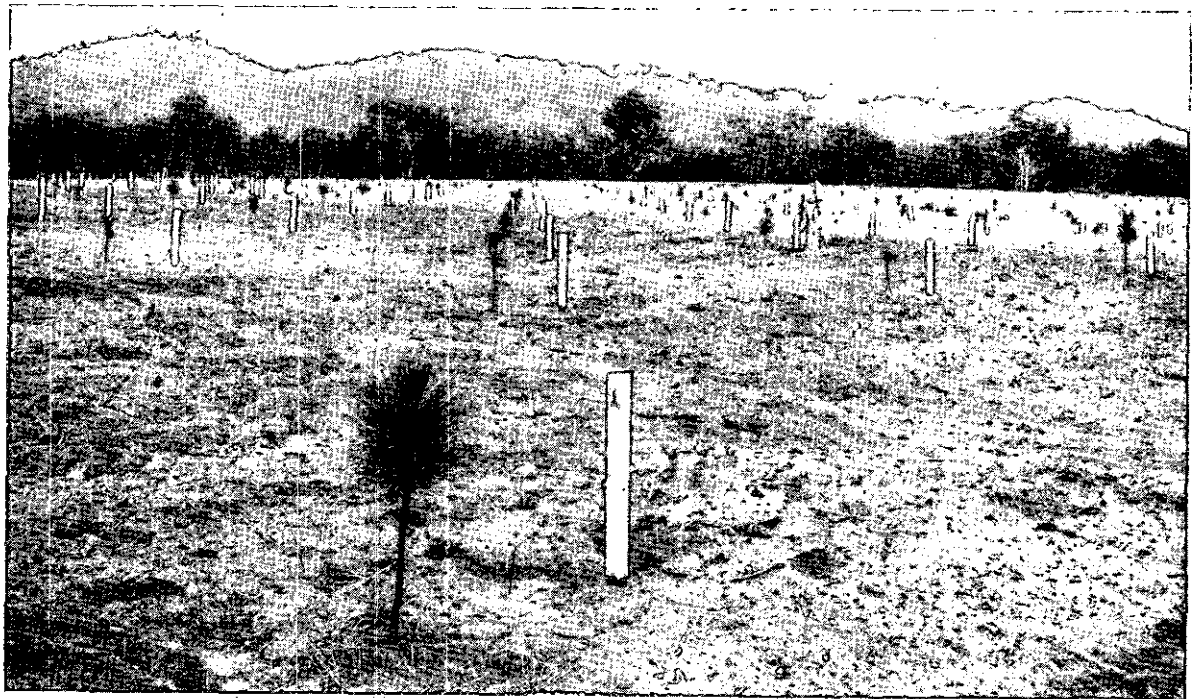
Elite Tree No. G 25.



No. G 8.



No. G 20.



The most recent seed orchard, containing grafts of the best 11 elite trees of Slash Pine as determined by a study of morphological characters and of wood properties. Seeds obtained from this seed orchard will produce trees of better form, more rapid growth and better quality of wood.

DEPARTMENT OF FORESTRY

SALIENT STATISTICS FOR THE YEAR 1958-59

Area of new plantations established .. .. .	4,180 acres									
(Total area planted is 87,990 acres)										
Number of trees planted .. .. .	3,240,000									
Trees sold to the public .. .. .	228,000									
Number of trees in 24 nurseries at 30th June, 1959 .. .. .	6,084,000									
Area of plantations thinned unmerchantably .. .. .	11,897 acres									
Area of plantations thinned merchantably .. .. .	2,750 acres									
Yield of plantation thinnings .. .. .	20,296,000 super. feet									
Area of plantations pruned .. .. .	14,368 acres									
Natural forest given silvicultural treatment .. .. .	24,383 acres									
(Total area treated is 587,609 acres)										
Length of firebreaks and roads constructed .. .. .	120 miles									
Length of firebreaks and roads maintained .. .. .	3,500 miles									
Logging roads constructed .. .. .	89 miles									
Total mill log cut from Crown areas .. .. .	227,678,000 super. feet									
Railway and mining timbers, poles, &c., expressed in super. feet ..	39,782,000 super. feet									
Road subsidies to Shire Councils .. .. .	£22,721									
Staff—										
Salaried Officers .. .. .	344									
Wages men .. .. .	1,615									
Total expenditure .. .. .	£3,177,463									
Expenditure on works .. .. .	£1,878,500									
Gross revenue from timber sales .. .. .	£2,194,871									
State Forests—4 new reserves ; total area increased by .. ..	71,690 acres									
Timber Reserves—1 new reserve ; total area decreased by .. .. (Because of absorption in State Forests)	21,175 acres									
National Parks—1 new reserve ; total area increased by .. ..	818 acres									
Total reservations at 30th June, 1959 ..	<table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td style="font-size: 3em; vertical-align: middle;">{</td> <td>379 State Forests, area ..</td> <td>5,104,923 acres</td> </tr> <tr> <td></td> <td>337 Timber Reserves, area</td> <td>3,027,238 acres</td> </tr> <tr> <td></td> <td>253 National Parks, area ..</td> <td>838,134 acres</td> </tr> </table>	{	379 State Forests, area ..	5,104,923 acres		337 Timber Reserves, area	3,027,238 acres		253 National Parks, area ..	838,134 acres
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	337 Timber Reserves, area	3,027,238 acres								
	253 National Parks, area ..	838,134 acres								

# Report of the Director of Forests for the Year ended 30th June, 1959

## INTRODUCTION

In general terms forestry can be regarded as tree farming, but the crop is of such a nature that, in comparison with other crops, it must be worked on long rotations. For this reason a forester must look well into the future for the harvesting of his crop and must make long distance forecasts.

One of the questions frequently asked is—"Will we need wood in the future?" Many of those who ask this question do not appreciate that much of the material used to substitute sawn timber is made from wood, e.g. building boards, plywood, and fibreboard for containers of various types.

In recent years various authorities throughout the world have made intensive researches into this very question with the object of determining a sound basis for forestry and industry programming. There is general agreement on certain main points—

1. The per capita consumption of sawn timber will decrease;
2. The population will increase at a greater rate than the per capita consumption declines, therefore the overall requirement in sawn timber will increase;
3. The per capita demand for pulpwood will increase;
4. With increasing population the total requirement for pulpwood will show a very marked increase.

The various authorities forecast that in 50 years the minimum overall demand for wood will have increased from 60 per cent. to well over 100 per cent. There is reason to believe that these conclusions will apply equally to Queensland. It is, therefore, necessary to plan for considerably increased annual production from the forests in the future.

It is not generally known that Australia commenced using pulpwood only 20 years ago, and that the present Australian consumption of pulpwood per annum already exceeds the total quantity of mill logs cut each year from the Crown lands in Queensland. Only recently has industry begun to use pulpwood in this State and this use can be expected to increase rapidly.

During the last five years the total cut of mill logs in Queensland has averaged about 425,000,000 superficial feet, of which almost half was obtained from private lands. With the heavy cutting on private lands since the war it is inevitable that the annual quantity from this source will progressively diminish, as these areas are generally being destructively logged and are not being managed for sustained yield. Furthermore, the native Crown hoop and bunya pine stands will have been exhausted within a decade, even at a reduced annual cut.

The industry has existed, to date, mainly on the old mature forests—the growth of centuries, and now has, for the most part, to exist on current increment of the forests. With the removal of the over-mature timber the annual increment of the advance and intermediate stands remaining is quite inadequate to sustain the past rate of cutting—which was mainly of forest capital.

**On a basis of sustained yield management little increase in the annual cut from native Crown Forests can be expected in the near future. There is, therefore, a very real problem in maintaining existing production, quite apart from making provision for the anticipated increasing future demand.**

For a number of years this Department has been giving protection, regeneration and improvement treatment to native hardwood and cypress pine forests, and, recently, to the North Queensland rain forests. To date 587,609 acres have been given such treatment. This will increase greatly the output from these forests, but this increased output will not be effective in the immediate future since naturally regenerated seedlings in the native forests do not provide mill logs for industry under 40 years.

In other words, all the mill logs from native forests on which the sawmilling and ply milling industry will have to depend for the next 40 years are already growing in the form of saplings, poles, or more advanced growth. Nothing can be done to increase this number, but much can be done to protect this asset from destruction by fire, felling and ringbarking. On the

State Forests silvicultural treatment of the timber stands will have the effect of increasing the quantity of timber which will reach marketable size within a period of 40 years above what would otherwise be the case.

The overall rotation from germination in the natural forest to final harvest will vary with species and locality and the silvicultural treatment. It is expected to vary from 60 years with certain coastal hardwoods to 180 years in the case of western spotted gum and narrow-leaved ironbark. The average rotation of all species on State Forests in natural forests is expected to be of the order of 100 years.

**The major problem is how to increase forest capital and forest increment of utilizable material (i.e. annual log cut) at the earliest possible time. The best answer is the establishment of plantations of softwoods.**

As a result of the present method of management of pine plantations, appreciable quantities of timber can be made available at the age of 20 years, and increasing quantities of larger and better logs at subsequent thinnings, with high quality timber at the final harvest at 50 or 60 years of age. Approximately two rotations of pine can be grown in the time taken to provide one average rotation of species in the natural forest, whilst about five times as much marketable timber can be grown per acre per annum in a pine plantation as in the natural forest. The Department has established nearly 85,000 acres of softwood plantation, of which about 60,000 acres have been planted since the war.

**It is essential that reforestation work—both plantations and silvicultural treatment of our natural forests—be continued and expanded if the Department is to properly fulfil its function of assuring the timber supplies of Queensland. The work is both productive and profitable.**

However, unless continually increasing funds are made available there is no alternative to decreasing the annual programme of new reforestation work. This is because—

- (a) Each area that is planted or treated must be maintained. With an increasing area of established plantations the cost of maintenance continually rises, i.e. roads, protection, tending, pruning, &c., must be provided for, with the result that less funds are available for the actual work of planting additional areas. The same comment also applies to work in the natural forests;
- (b) The cost per man year has been continuing to increase; consequently, considerably increased funds are required each year to maintain a fixed programme of new work quite apart from the fact that operations should be increased.

It has not been possible for the Department to maintain its objective of the establishment of a minimum of 5,000 acres of new plantations each year and this year the figure fell to 4,180 acres.

**This is a serious matter from the point of view of the State's future timber supply. The best information available would indicate that the annual planting programme should be increased to 6,000 acres.**

This will require still further funds each year.

As timber is a long term crop long distance planning is essential and this can only be carried out efficiently if funds are assured for a period of years and not determined from year to year.

**The Department's plea is, therefore, for sufficient additional funds on a guaranteed basis for a period of years to—**

- (a) Step up the programme of new reforestation work.
- (b) Meet the increasing maintenance costs entailed in the proper management of the increasing area of plantations and silviculturally treated forest.
- (c) Meet the increasing cost per man year.

**This is essential if the Department is to discharge its fundamental duty to the State and the people of Queensland of an assured timber supply for present and future generations.**

## REFORESTATION

### Management

The Director-General of the Forestry and Timber Bureau, in a recent summing up of Australia's future softwood requirements, reached the conclusion that Queensland should be planting softwoods at a rate of over 6,300 acres per annum.

Over the past five years annual plantings have averaged about 5,000 acres, and this has been achieved only at the expense of work on treatment of the natural forests, particularly hardwoods, on which only 18 per cent. of the Department's reforestation expenditure is being spent.

It is becoming increasingly clear that, even at this sacrifice, the planting rate of 5,000 acres cannot be maintained if the correct cultural practices are to be afforded these areas after planting. Unless additional funds can be secured each year, the only course is to decrease the planting rate.

In 33 years of planting the Department has, so far, planted 85,000 acres towards its goal of 250,000 acres. Even if 5,000 acres per annum can be maintained, and this is not possible without increased funds, it will take over 30 more years before Queensland's self-sufficiency in softwoods can be attained.

The impracticability of carrying on a forestry programme on a more or less fixed annual appropriation has been pointed out previously and must be again stressed. Increasing funds is the only way by which the Department can hope to realise its primary function of ensuring the local production of the timber needs of the State.

Further appreciable progress was made in the quest for the fullest information regarding timber stands on State Forests. Plots were established or remeasured on 8,600 acres of softwood plantations. On the inland hardwood—cypress pine forest type, 220 plots sampling 36,000 acres were established and 2,955 plots, covering 493,000 acres, were remeasured. On the coastal hardwood type, 510 plots (30,000 acres) were installed and 199 plots (18,000 acres) were remeasured. All of the above represent systematic permanent plots. Some 80,000 acres of hardwood forest were sampled on a non-permanent random plot basis.

The cut of plantation thinnings for the year of 20,296,000 super. feet, which is the highest cut yet recorded, brings the total yield from plantations to 162,406,000 super. feet. However, this cut falls short of the rate that is desirable. Consequently, it is gratifying to report that a very active interest in plantation thinnings was in evidence during the last 6 months of the year. In addition, further sales which were under consideration at the end of the year have been the subject of enquiry by prospective purchasers.

### Silviculture

*General.*—Rainfall for the year was close to or slightly above average for all centres. This did not mean, however, that the year was an entirely favourable one for all silvicultural activities. More than 50 per cent. of the year's total rainfall was received during the four summer months of December, January, February and March. The following table illustrates this point:—

Station	Rainfall in Points December–March	Total for Year in Points	Percentage
Yarraman .. .. .	1,721	2,831	60.7
Beerwah... .. .	4,204	5,883	71.4
Bowenia .. .. .	4,495	5,911	76.0
Passchendaele .. .. .	2,500	3,958	63.1
Imbil .. .. .	3,499	4,466	78.3

The good rains of the latter half of last financial year did not continue into the spring and early summer of this year and, although this gave good conditions for scrubfalling and for the burning of felled areas, the dry conditions caused heavy losses in the winter plantings at Pechey and at Passchendaele. Survival in the coastal exotic areas, with the exception of Toolara, was satisfactory. Some trouble was experienced with burning-off fires, particularly in the Gympie district where a complete reversal of expected weather conditions resulted in numerous spot fires in adjoining plantations.

Planting conditions for Hoop Pine were generally favourable and the good follow up rains of December-March ensured excellent survival.

From March until the end of the year rainfalls, except for the month of May, were below average but at all exotic planting centres favourable soil conditions and reasonably hard nursery stock enabled an early start to be made with the winter planting programme.

Details of the year's work are as follows:—(Information for 1957-58 is also given.)

	1957-58	1958-59
	Acres	Acres
Area of natural forest treated .. .. .	15,977	24,383
Area of plantation established .. .. .	4,994	4,180
Area covered in pruning .. .. .	8,507	14,368
Area tended .. .. .	62,630	59,343
Area thinned merchantably .. .. .	3,790	2,750
Area thinned unmerchantably .. .. .	3,384	11,897

A most pleasing feature of the year's work is the increase by 52 per cent. of the area of natural forest treated in 1957-58—it is hoped that this difference will be further increased during the financial year 1959-60. The reduction in the acreage of plantation established has been largely in the plantings of exotic conifers.

#### Plantations

Appendix I. shows, by districts and by species, the areas planted from 1st April, 1958, to 31st March, 1959. The area planted for the period is 4,180.5 acres, made up as follows:—

	Acres
Native Conifers (chiefly Hoop Pine) .. .. .	1,600.1
Exotic Conifers (mainly Slash Pine, <i>Pinus patula</i> , <i>Pinus caribaea</i> and <i>Pinus radiata</i> ) .. .. .	2,496.6
Broadleaved species .. .. .	6.0
Eucalypts .. .. .	77.8
	<hr/>
	4,180.5

The total area of effective plantation, all species, established to 31st March, 1959, is 87,990 acres, comprised of:—

	Acres
Native Conifers .. .. .	44,415
Exotic Conifers .. .. .	39,239
Broadleaved species .. .. .	1,407
Eucalypts .. .. .	2,929
	<hr/>
	87,990

The bulk of the clearing contracts was completed satisfactorily although the area to be cleared on the Kalpowar State Forest had to be reduced by 77 acres as the result of the contractor's inability to complete the full acreage (217 acres) in time. Burning conditions were satisfactory and, although dry weather called for the exercise of care, very little damage resulted from the burning-off fires.

The use of machines for clearing scrub for Hoop Pine plantings was extended, and last year procedure was modified by restricting brushing to a five-chain strip on the surround of the area. At Kalpowar the area was pushed and windrowed without any prior brushing. In all cases satisfactory to excellent burns were secured—with perhaps the windrowed area giving the best burn. The area cleared by machine totalled 642.8 acres, or equivalent to 40 per cent. of the total area cleared for planting with native conifers. Machines are now being used for the clearing of all areas topographically suitable for machine work and without any prior brushing.

Just on 400 acres of land for planting with exotic pines was pushed and windrowed by dozers fitted with pusher bars, and it is only the low prices tendered for clearing with axe and saw that has prevented the wider use of machines in the exotic areas. A satisfactory technique for the burning of windrows has been worked out and it is considered that the savings on planting and subsequent operations will enable a wider margin to be paid for machine work than is at present allowed.

Planting conditions for exotic pines in the winter of 1958 were reasonably good, but drought conditions in the spring and early summer caused heavy losses at Pechey and at Passchendaele. Reference has been made previously to losses at Toolara—soil conditions at this centre were comparable to those at the other coastal centres at Beerburum and Tuan but by mid-September heavy losses had occurred in the winter's plantings at this centre.

An examination of dead and dying plants from the plantations failed to reveal the cause of death, but isolations from soil samples from the Toolara nursery indicated that a very high





**HIGH QUALITY LOBLOLLY PINE (*Pinus taeda*), AGE 23 YEARS.**

Stand Data.—Volume remaining: 48,540 super. feet per acre.

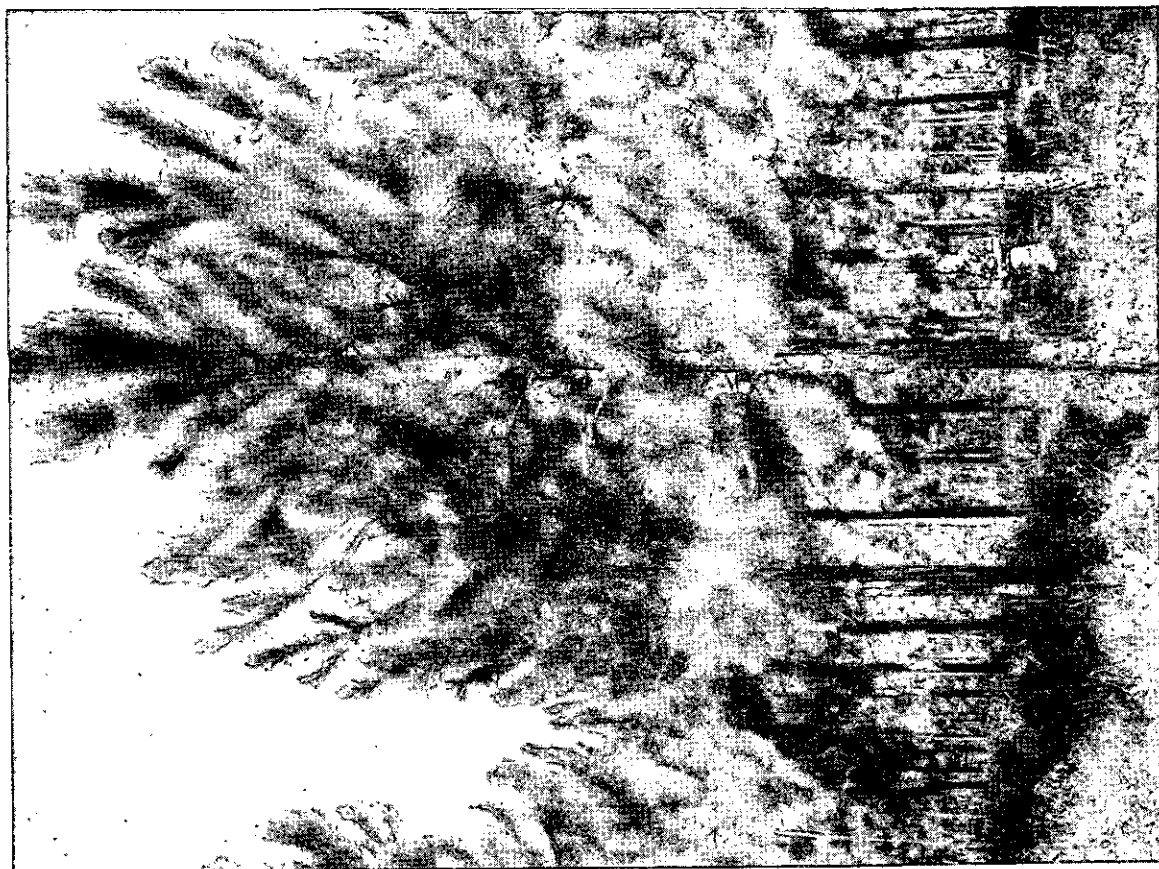
Thinned: 23,840 super. feet per acre.

M.A.I.: 3,140 super. feet per acre.

Average predominant height: 90 feet.

Average girth breast high: 45.8 inches.

Stems per acre: 140.



**SLASH PINE (*Pinus elliottii*) 8 YEARS OLD.**

The result of standard practice of early unmerchantable thinning to 300 per acre and ground pruning.

population of *Phytophthora cinnamomi* was present in the nursery soil. It is possible that plants from the nursery had, therefore, been planted out with a weakened and reduced root system and so were unable to withstand the shock of transplanting from nursery to the field.

Very little refilling has been necessary with the Hoop Pine plantings.

The heavy summer rains resulted in a heavy weed growth on most areas and it is interesting to note that soil disturbance, the result of machine clearing, tends to produce a heavier crop of weeds than areas cleared in the usual way. The aerial spraying of patches of dense wattle in exotic pine plantations has been most successful and another large scale trial covering about 150 acres was completed during the year.

The control of Eucalypt coppice by aerial spraying with selective weedicides in young plantations and by stump treatment in older plantations is still in the experimental stage and results to date are promising.

The area tended for 1958-59 was 59,343 acres, a reduction of 3,287 acres on the area covered in 1957-58.

Pruning in all districts is up to date and details of the areas covered during the year are as follows:—(Figures for 1957-58 are also given.)

	1957-58 Acres	1958-59 Acres
First operation .. .. .	3,513	5,534
Second operation .. .. .	2,602	4,213
Third operation .. .. .	1,433	3,539
Fourth operation .. .. .	959	1,082
	<hr/>	<hr/>
	8,507	14,368

The impact of the larger post-war plantings is reflected in the increase, by 5,861 acres, in the area pruned. An important modification in the pruning prescription for exotic pines was introduced during the year. With the introduction of a second unmerchantable thinning from 400 stems per acre to 300 stems per acre at about age 8 years, all stems 20 feet plus in height are pruned to as high as can be reached from the ground immediately following the second thinning. This eliminates the marking for ground pruning of the 240 stems per acre which were selected under the old prescription.

In addition to normal pruning, 193 acres of plantation were covered for the removal of epicormic shoots and repainting of select stems was carried out over 228 acres.

Unmerchantable thinning to 400 stems per acre was introduced in Hoop Pine plantations during the year. The thinning is carried out at about age 6 years when the stand has an average height of 15 feet and is also applied to stands up to and including the year of first pruning, i.e. 8-9 years of age. This first thinning is applied two years later than with exotic pines for the following reasons:—

1. Hoop Pine is still free growing at age 5-6 years so that a thinning before this age would confer no benefit;
2. Rat damage is usually most severe in stands 2-5 years of age and a recurrence of serious rat attack, as occurred over the period 1951-56, has been kept in mind in drawing up the prescription for unmerchantable thinning.

Following a decrease in the rate of merchantable thinning in the Beerwah-Glasshouse Mountains area it was decided to carry out unmerchantable thinning in some of the older plantations. This was a thinning from below and aimed at the removal of stems up to a certain G.B.H.O.B. dependent on the Predominant Height of the stand. Poorly formed stems above the merchantable limit of 21 in. G.B.H.O.B. were also removed.

The table which follows gives details of the areas covered by unmerchantable thinning:—

District	Exotic Pines Acres	Hoop Pine Acres
Maryborough .. .. .	2,477	..
Brisbane .. .. .	4,004	..
Gympie .. .. .	1,971	323
Mackay .. .. .	898	..
Mary Valley .. .. .	..	476
Warwick .. .. .	60	..
Yarraman .. .. .	418	1,270
	<hr/>	<hr/>
	9,828	2,069

Total area: 11,897 acres—an increase of 8,513 acres on the area thinned last year.

It is again pleasing to report that all Hoop Pine areas were practically free of rat damage.

### Regeneration of Natural Forest

The almost complete absence of a fire season enabled an increased acreage of Cypress Pine to be treated during the year but it was not possible to increase the acreage of hardwood forest treated.

Despite the shortage of trained staff, it was possible to extend the acreage of tropical rain forest which received treatment in North Queensland. No treatment was possible in the natural Hoop Pine stand in South Queensland.

Details of the acreage of various forest types treated for 1958-59 and for the previous year are as follows:—

	1957-58 Acres	1958-59 Acres
Eucalypt forest .. .. .	11,292	11,642
Cypress Pine .. .. .	4,451	11,019
Tropical Rain Forest .. .. .	234	1,722
Natural Hoop Pine .. .. .	—	—
	<hr/>	<hr/>
	15,977	24,383

### Seed Collection and Stocks

(a) *Araucaria cunninghamii*.—No Hoop Pine seed was collected during the year, stock remaining in cold storage from the 1957 collection being adequate for requirements for several years.

The export demand for seed of this species was low compared with that of previous years, and only 34 lb. was disposed of to local, interstate and overseas purchasers.

(b) *Araucaria bidwillii*.—The 1958 seed crop was generally light, but 85 lb. was collected from trees near the Beerwah Nursery to supply export orders.

Seed of this species does not retain viability for long, even in cold storage, and the remainder of the 1957 collection was discarded early in 1959.

A total of 50 lb. 14 oz. was exported, mainly to the United States of America.

(c) *Agathis robusta* and *Agathis palmerstoni*.—Small collections were made from these species on Fraser Island and in North Queensland respectively, but the viability of the seed was very low.

*Agathis robusta* seed from the previous year's collection suffered little decrease in viability after cold storage for 18 months in sealed containers at 17 degrees F., and a quantity shipped overseas as refrigerated cargo gave satisfactory germination.

In contrast, seed kept at room temperature in unsealed containers decreased in L.G.C. from 70 per cent. to 12½ per cent. in 7 months.

Just over 11 lb. of *Agathis robusta* seed was exported.

(d) *Pinus species*.—Collection from Departmental plantations amounted to 576 lb. 13 oz.

Seed of *Pinus elliottii*, which made up the major part of this collection, showed excellent L.G.C. values, in no case below 85 per cent., and one batch (98B) had an L.G.C. of 94 per cent., one of the highest values recorded for any Departmental collection of this species.

There was a strong export demand for *Pinus* seed and just over 529 lb. was disposed of to local, interstate and overseas buyers. *Pinus elliottii* was the main species in demand and it was necessary to limit exports to maintain adequate reserves against Departmental requirements.

The 1960 crop of this species is expected to be a large one, and by making a larger collection of seed than usual it should be possible to meet the Department's requirements and to fill all export orders.

(e) *Eucalyptus species* and *Miscellaneous species*.—A total of 191 lb. was collected by the Department and 86 lb. 4 ozs. was exported, largely as small quantities to numerous private persons.

The total weight of seed of all species exported was 711 lb., to a value of £929, and revenue received during the year from sale of seed was £1,284, which includes payments for some seed exported at the end of the previous financial year.

## SEED MOVEMENTS, 1958-59

Species	Intake						Distribution						Stock 30-6-50 lb. oz.
	Department Collection	Private Sources	Other States	Overseas	Department Nurseries	Brisbane Nursery	Private Persons	Other States	Overseas	Viability Tests			
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.			
<i>Araucaria bidwillii</i>	85 0	..	..	..	..	0 10	..	1 0	49 14	..	..	62 0	
<i>Araucaria cunninghamii</i>	..	..	..	..	4,477 0	..	6 0	12 1	16 0	10 8	..	51,956 0	
<i>Agathis palmerstoni</i>	19 8	..	..	..	..	..	..	..	..	0 12	..	18 12	
<i>Agathis robusta</i>	4 9	..	..	..	..	..	..	3 4	7 14	0 8	..	93 11	
<i>Eucalyptus</i> species	16 2	..	0 14	..	5 10	0 7	11 8	2 9	12 10	0 5	..	141 8	
<i>Pinus caribaea</i>	..	..	..	..	40 7	..	0 4	0 8	0 6	0 2	..	8 10	
<i>Pinus elliotii</i>	411 0	..	..	..	232 10	..	60 0	269 12	149 5	2 4	..	941 0	
<i>Pinus patula</i>	21 8	..	..	..	9 15	..	..	2 1	..	0 9	..	85 0	
<i>Pinus radiata</i>	112 5	..	..	0 4	45 10	..	22 0	..	4 0	0 10	..	142 0	
<i>Pinus taeda</i>	..	..	..	..	3 10	..	..	3 0	8 0	..	..	529 0	
Miscellaneous <i>Pinus</i> species	32 0	..	..	0 14	2 5	0 8	0 4	0 1	9 12	1 4	..	62 1	
Miscellaneous species	174 13	0 12	0 8	4 13	38 14	42 5	33 4	4 10	21 11	2 14	..	906 3	
Totals	876 13	0 12	1 6	5 15	4,856 1	43 14	133 4	298 14	279 8	19 12	..	54,945 13	

### Nurseries

Twenty-six nurseries remained in production during the year but by the end of the financial year 2 Hoop Pine nurseries had been closed down. The 24 nurseries now in production comprise 15 engaged in the production of Hoop Pine planting stock, 7 exotic pine nurseries, 1 Eucalypt nursery and 1 at Rocklea, Brisbane, producing stock of various species for supply to the public.

Stock on hand at 30-6-59 totalled 6,084,000 plants whilst during the year 3,473,000 plants were despatched to plantations, School Forest plots and supplied to the public.

No trouble was experienced with Hoop Pine nurseries and the quality of the stock produced was satisfactory. Following the isolation of *Phytophthora cinnamomi* from the soil of the Toolara exotic pine nursery a disease survey of the exotic pine nurseries in South Queensland was carried out by a pathologist from the Department of Agriculture and Stock. As a result of the survey, consideration is being given to the abandonment of the Toolara nursery and its replacement by a new nursery on a site free from *Phytophthora* infection. A reduction in output from the Passchendaele nursery also appears to be necessary. The nursery at Pechey, a section of which has been subject to flooding for some years, will also have a reduced output until such time as the flooding ceases. Nurseries at Beerburrum, Beerwah and Tuan are satisfactory. The use of cow manure plus superphosphate has corrected the "chlorosis" trouble experienced with *Pinus elliottii* at Passchendaele.

Damping off trouble at Pechey and Passchendaele, apparently caused by *Pythium ultimum*, has been corrected by the use of "Thiotox" as a soil drench.

### Sales of Trees

Sales to the public and to other Government Departments totalled 228,296, a reduction of over 76,000 on the number sold last year. At the 30th June, however, orders for the supply of 305,000 plants to two private companies had still to be filled.

Distribution of sales, by species and by type of planting, was as follows:—

By Species		By Type of Planting	
<i>Pinus elliottii</i>	115,489	School Plots	3,853
<i>Pinus taeda</i>	730	Ornamental, &c.	65,441
<i>Pinus patula</i>	1,534	Government Departments	12,776
<i>Pinus radiata</i>	11,668	Forest formation	146,226
Hoop Pine	39,276		
Miscellaneous	59,599		
	<u>228,296</u>		<u>228,296</u>

Sales of miscellaneous species from Rocklea nursery totalled 47,152, of a cash value of £2,630 6s. 9d. The increased cash value is due not only to increased sales but also to an increase in selling prices.

The value of all sales totalled £6,413 11s. 1d.

### Silvicultural Research

**Staff.**—During the year the number of university trained officers engaged on full-time research was maintained at 11. These are located at the following centres:—North Queensland (3), Mary Valley (1), Beerwah (3), Brisbane Valley (1), Dalby (1), Head Office (2).

In addition, R. Florence, the officer in charge of hardwoods research, continued for the whole period on his scholarship with C.S.I.R.O. and G. Wood left in March for Oxford to pursue his studies under the Russell Grimwade Scholarship.

At the beginning of 1959 the new Research offices at Beerwah were occupied and, with the completion of a spacious glass-house, work on plant nutrition was transferred from Brisbane to Beerwah. For the previous three years this work was carried out at the Queensland University and the help and facilities so provided are gratefully acknowledged.

**Field Work.**—(i.) *North Queensland.* Here the major work is the maintenance of experiments dealing with the silvicultural treatment of the rain forests of that region, and progress has been made in summarising the results obtained over the past ten years since research work was resumed in North Queensland after the war.

Experiments on the preparation of the site for seedfall around parent trees, which had previously embraced Maple (*Flindersia brayleyana*), Silver Ash (*Flindersia bourjotiana*), Red Cedar (*Cedrela australis*) and Northern Silky Oak (*Cardwellia sublimis*), were extended to

include Silkwood (*Flindersia pimenteliana*). Treatments were applied to Silkwood seed trees in forest which had been logged only, forest which had been logged and afforded intensive standard silvicultural treatment (brushing of useless undergrowth, ringbarking of useless trees and species, and thinning of desirable stems), and in un-logged, untreated forest. Treatments around the base of seed trees consisted of brushing only of useless stems, brushing of useless stems plus stacking brush into heaps and control. Seed fall occurred from November, 1958, to January, 1959. Notes were made on the crop intensity on all parent trees and there was a distinct indication that the standard silvicultural treatment completed in 1957 had increased the seed crop. This is shown by the following table for seed trees 48 inches + in G.B.H.:—

Treatment	Percentage of Seed Trees with—			
	Heavy Crop	Light Crop	Poor Crop	Nil
Unlogged, untreated .. .. .	23	41	29	7
Logged only .. .. .	32	38	21	9
Logged and Treated .. .. .	64	36	..	..

The condition of the forest had a marked effect on germination. Grouping treatments—the following were the percentages of milli acres stocked with seedlings from the 1959 seedfall:—

Condition	Unlogged, Untreated	Logged Only	Logged and Treated
Stocked Milli acres .. .. .	Per cent. 100	Per cent. 71	Per cent. 12

There is some evidence that treatment around the parent trees has been effective in increasing the germination but it will be necessary to await observations on survivals to obtain more valuable data. Figures for survivals in April, 1959, expressed on a per acre basis, are:—

Treatment Around Tree	Condition of Forest		
	Unlogged, Untreated	Logged Only	Logged and Treated
Control .. .. .	8,300 per acre	1,400 per acre	144 per acre
Brushed Only .. .. .	12,000 per acre	4,400 per acre	100 per acre
Brushed and Stacked .. .. .	9,500 per acre	4,300 per acre	238 per acre

Results to date would indicate that with *Flindersia pimenteliana* opening of the canopy reduces germination.

(ii.) *Central Coastal Queensland (Bowenia)*. Fertilizer and mounding and draining experiments, chiefly with *Pinus elliottii*, were maintained at this centre. Excellent responses continue to be shown by plots on which drainage has been improved but erratic results have been obtained with broadcast applications of Nauru phosphate at rates up to 4 cwt. per acre. In October, 1958, a series of 12 plots was established as a thinning experiment with *Pinus caribaea* in a stand 4½ years old which had been reduced to 400 per acre by an unmerchantable thinning six months earlier. This experiment will have a Basal Area control with a range designed to cover from 80 to 160 square feet. A further thinning experiment to check on the intensity of first unmerchantable thinning is to be established next year.

The oldest plot of *Pinus caribaea* at this centre is 10 years old and it has given the following growth data:—

Planted 1949 at 8 feet x 8 feet spacing. Thinned unmerchantably at age 6 years to 459 per acre. Average G.B.H.—21.3 inches. Average predominant height—48.5 feet. Basal Area per acre 115.0 square feet. G.B.H. increment 1958-59—1.4 inches. Basal Area increment 1958-59—15.7 square feet.

(iii.) *South Queensland. (a) Tree Breeding—Slash Pine*.—Grafting of trees selected for use in the Tibrogargan seed orchard continued with satisfactory results though the percentage take was slightly down on the previous year's figure of 78 per cent. Planting of this, the second seed orchard for Slash Pine, commenced during the year and should be completed by 1961. Examination of wood qualities of the trees selected for inclusion in the orchard was completed by the Forest Products Division of C.S.I.R.O. and, on the basis of this, four of the parents will be discarded because of excessive spiral grain.



**NATURALLY REGENERATED FOREST OF NARROW-LEAVED IRONBARK (*E. crebra*).**  
11,188 acres of native forests were given regeneration treatment last year, bringing the total area treated to 587,609 acres.



**HOOP PINE (*Araucaria cunninghamii*) PLANTATION, AGE 26 YEARS.**  
Average predominant height, 87 feet. Average girth, breast high, 31.7 inches.  
M.A.I., 1,780 superficial feet per acre.  
4,103 acres of softwood plantation were established during the year, bringing the total to 85,062 acres of which 42,125 acres are hoop pine.

*Caribbean Pine*.—More extensive plantings of this species are now becoming available at Bowenia for selection of elite trees and action is in hand for the appointment of an officer to conduct the preliminary combing of these areas. Already a number of trees have been located whose external characters meet the stringent requirements of elite trees. In view of the excellent growth made by this species throughout the coastal plain, and the poor average stem form it displays, it is likely that it will become the most important exotic species in so far as breeding work is concerned.

*Slash x Caribaea Hybrid*.—After the first year in the field there are strong indications that the hybrid *Elliottii x Caribaea* possesses hybrid vigour. Increment figures for 1958-59 are:—

Site	Average Height Increment—1958-59			
	<i>Elliottii x Caribaea</i> (tubed)	<i>Caribaea</i> (tubed)	<i>Elliottii</i> (open root)	<i>Elliottii</i> (tubed)
Ridge type .. .. .	14.7 inches	11.1 inches	9.1 inches	10.4 inches
Swampy type .. .. .	11.2 inches	7.4 inches	6.2 inches	7.6 inches

Averages are for 5 plots in each type and the hybrid has given increments on both types significantly superior to all others at the 1 per cent. level.

Steps have been taken to repeat the cross and to attempt its reciprocal in April, 1960.

*Pinus radiata*.—With this species the aim is to develop a strain which will prove relatively resistant to *Diplodia*. Remeasurement in 1959 of plots at Pechey for which figures were quoted in last year's report and assessment of plots at Passchendaele involving the same parents gave results consistent with the earlier ones. As a result, a programme of grafting and cross-pollination has been commenced using those parents whose progeny (open-pollinated) had shown up favourably in the percentage of stems free from disease.

*Hoop Pine*.—Work on selection of elite trees is continuing and, at the same time, means of obtaining grafted stock which will show apical dominance and develop as normal trees are being sought. To date two promising lines are being followed. The first involves the decapitation of the parent tree at a point as high as possible. This is followed by the production of a number of leaders by dormant buds in the axils of the leaves. When these are at the right size they are grafted to seedling stocks. Two 27-year-old trees decapitated in January, 1958, have produced 28 leaders for grafting and further leaders should develop. Leaders so produced are invariably thick and not easy to graft but a take of 50 per cent. has been achieved. The second method is by bud grafting using patches of bark from high on the stem. These buds in the axils of the leaves develop into typical leaders and the grafting procedure is relatively easy. With established grafts from five-year-old trees normal elongation of the bud is occurring but from old trees the grafts have only just taken and elongation of the bud is expected in the spring. Branch grafts from high in the crown continue to behave as branches after three years in the field with the use of stakes to keep them upright.

*Kauri Pine*.—Plantations have been combed for elite trees. Despite the fact that *Agathis australis* branch grafts make normal upright development there is no indication after three years that *Agathis robusta* will do the same. Therefore, work with this species is following the same lines as with Hoop Pine. Decapitation is followed by development of numerous leader shoots which may be grafted. Bud grafting has only just been attempted.

Kauri has the ability to produce strong root shoots and it was hoped to use this property with successful air layers. After two years in the nursery the fibrous root system of these plants is still unsuitable for this purpose.

*Maple*.—Use of the glass-house at Atherton has permitted work to proceed on sounder lines for development of a grafting technique with this species. Seasonal trials with scions from old trees covered Terminal Wedge, Side Veneer, Bottle, Inverted T, and Window grafts. Most successful were Terminal Wedge (59 per cent.) and Side Veneer (42 per cent.); the others were almost complete failures and work will continue with these two methods only. A small trial conducted at Beerwah, in April, with scions from 30 and 35-year-old trees gave takes as follows:—

Terminal Wedge .. .. .	100%
Side Veneer .. .. .	93%
T bud .. .. .	Nil
Side Veneer bud .. .. .	60%

(b) *Exotic Pines*.—Experiments on thinning of Slash, Loblolly and Caribbean pine were maintained. The information from the series of experiments established in 1951 with Basal Area



controls supports the conclusions outlined in the 1955-56 report and indicates that maximum Basal Area increment is associated with a standing Basal Area of about 130 square feet at age 14 to 20 years with both Slash and Loblolly pine.

Experiments in the control of coppice in plantations by aerial spraying with 2,4,5-T prior to planting, referred to in the last report, have given satisfactory results, excellent control of most species having been achieved with all treatments, and a more extensive experiment was initiated in June, 1959. This included a 50-acre compartment treated at 4 lb. 2,4,5-T in 6 gallons distillate-water per acre as a cost trial, and a number of smaller plots treated with various quantities of 2,4,5-T and proportions of distillate-water.

Aerial spraying of eucalypt coppice costs about £5 10s. per acre, and the economics of the operation can only be determined in the light of subsequent tending costs. For this reason, it is important that a suitable area be available for cost comparisons as soon as possible. On present knowledge it will be several years before the sprayed area can be expected to show any cost advantage.

In dealing with persistent coppice in older plantations, cut stump treatment has proved most effective, and a large scale trial with this method was initiated during the year. Preliminary results indicate a highly satisfactory kill of all species except Brush Box. Work on the control of this most difficult species is being continued.

Work on tree nutrition during the year was concentrated on clarifying the role of nitrogen in the nutrition of *Pinus taeda* growing on the coastal lowlands at Beerburum. The two most significant findings were:—

- (1) The response to nitrogen fertilisers is controlled by a nitrogen-phosphorus interaction;
- (2) Mycorrhizas can develop satisfactorily on seedlings growing in slightly alkaline soils provided soil nitrate levels are low.

Experiments which illustrate these findings are described below:

*N-P Balance.*—A pot experiment to test the effect of nitrogen, phosphorus sulphur and magnesium on the growth of *Pinus taeda* in a lateritic podzolic soil from Beerburum.

A factorial combination of the following treatments was used:—

N as sodium nitrate, nil, 3 or 6 cwt./acre.

P as sodium dihydrogen phosphate, 0.215, 1.72 or 3.44 cwt./acre.

S as sodium sulphate, nil or 1 cwt./acre.

Mg as magnesium chloride, nil or 1 cwt./acre.

Basal fertiliser:— $\frac{1}{2}$  cwt. potassium carbonate,  $\frac{1}{2}$  cwt. calcium chloride, 7 lb. cupric chloride, 7 lb. zinc chloride, 3 $\frac{1}{2}$  lb. sodium borate,  $\frac{1}{4}$  lb. sodium molybdate per acre.

Sodium nitrate was applied as a split dressing; the 3 cwt./acre application was given as 2 cwt. on 16th October, 1957, and 1 cwt. on 6th January, 1959; the 6 cwt./acre treatment was applied as 2 cwt. on 16th October, 1957, 2 cwt. on 28th November, 1957, and 2 cwt. on 6th January, 1959. Magnesium chloride was applied to the soil on 20th January, 1958, and also as a foliage spray (1 per cent. aqueous solution) on 3rd February, 1958. The basal dressing, sodium sulphate and sodium dihydrogen phosphate were all added on 16th October, 1957. The three rates of application of sodium dihydrogen phosphate are equivalent in phosphorus content to  $\frac{1}{2}$ , 4 and 8 cwt./acre of superphosphate.

The experiment was sown on 26th July, 1957, and harvested on 21st May, 1959. The containers were undrained, 7-inch diameter polyethylene canisters; they had no drainage holes, and 12 plants were grown in each container.

Nitrogen and phosphorus increased the yield, and there was a highly significant N x P interaction. Dry matter produced (shoots plus roots) is shown in Tables 1 and 2; data for shoots only was essentially the same and is not presented.

Sulphur reduced the yield and magnesium increased it, both effects being significant at the 5 per cent level. These results are not discussed further.

TABLE 1

EFFECT OF PHOSPHORUS ON YIELD OF *PINUS TAEDA*  
AT DIFFERENT LEVELS OF NITROGEN

Means of 4 pots in grams dry matter; subscript numerals represent treatments in cwt./acre \*

Rank	Treatment	Yield	Significance
1 .. ..	N <sub>0</sub> P <sub>6</sub>	39.57	No significant difference between 1 and 2 at 5 per cent. level Both 1 and 2 significantly superior to 3 at 1 per cent. level
2 .. ..	N <sub>0</sub> P <sub>4</sub>	39.52	
3 .. ..	N <sub>0</sub> P <sub>1/2</sub>	31.18	
1 .. ..	N <sub>3</sub> P <sub>4</sub>	52.15	No significant difference between 1 and 2 at 5 per cent. level Both 1 and 2 significantly superior to 3 at 1 per cent. level
2 .. ..	N <sub>3</sub> P <sub>6</sub>	48.42	
3 .. ..	N <sub>3</sub> P <sub>1/2</sub>	32.14	
1 .. ..	N <sub>6</sub> P <sub>6</sub>	60.01	No significant difference between 1 and 2 at 5 per cent. level Both 1 and 2 significantly superior to 3 at 1 per cent. level
2 .. ..	N <sub>6</sub> P <sub>4</sub>	59.38	
3 .. ..	N <sub>6</sub> P <sub>1/2</sub>	26.91	

\* Phosphorus levels shown as superphosphate equivalent.

TABLE 2

EFFECT OF NITROGEN ON YIELD OF *PINUS TAEDA*  
AT DIFFERENT LEVELS OF PHOSPHORUS

Means of 4 pots in grams dry matter; subscript numerals represent treatments in cwt./acre \*

Rank	Treatment	Yield	Significance
1 .. ..	N <sub>3</sub> P <sub>1/2</sub>	32.14	No significant difference
2 .. ..	N <sub>0</sub> P <sub>1/2</sub>	31.18	
3 .. ..	N <sub>6</sub> P <sub>1/2</sub>	26.91	
1 .. ..	N <sub>6</sub> P <sub>4</sub>	59.38	At 5 per cent. level 1 > 2 > 3
2 .. ..	N <sub>3</sub> P <sub>4</sub>	52.15	At 1 per cent. level 1 and 2 both > 3
3 .. ..	N <sub>0</sub> P <sub>4</sub>	39.52	
1 .. ..	N <sub>6</sub> P <sub>6</sub>	60.01	At 1 per cent. level 1 > 2 > 3
2 .. ..	N <sub>3</sub> P <sub>6</sub>	48.42	
3 .. ..	N <sub>0</sub> P <sub>6</sub>	39.57	

\* Phosphorus levels shown as superphosphate equivalent.

Although phosphorus increased the yield at all levels of nitrogen, the best yields were obtained in the presence of 6 cwt./acre of sodium nitrate. However, no significant increase in yield was obtained by increasing the level of phosphorus beyond 1.72 cwt./acre sodium dihydrogen phosphate (equivalent in P content of 4 cwt./acre of superphosphate).

There was no response to nitrogen at the lowest level of phosphorus but when phosphorus was present in adequate amount the yield increased as the level of nitrogen increased. It is probable, therefore, that even higher yields would have been obtained by adding more nitrogen. The experiment cannot be interpreted fully until the chemical composition of the dried plant material is known.

This demonstration of a pronounced N x P interaction explains many puzzling results obtained in earlier pot trials. If the effect is shown to exist in the field also, then it may help to explain why pines sometimes fail to respond to phosphorus fertilisers on sites which are deficient in phosphorus according to the fertility index at present in use, viz. total soil phosphate.

*Nitrate and Mycorrhizal Development.*—A pot experiment to test the effect of sodium nitrate and sodium carbonate on the growth of mycorrhizal development of *Pinus taeda* in a lateritic podzolic soil from Beerburum.

The design was a 2 x 2 factorial, with 10 replications laid out in randomised blocks. Seedlings were grown from seed in 8-oz. waxed paper cups. The following treatments were used:—

NaNO<sub>3</sub>, nil or 10 m.l. of N/10 solution per pot.

Na<sub>2</sub>CO<sub>3</sub>, nil or 10 m.l. of N/10 solution per pot.

The experiment was sown on 12th December, 1958. Ten seeds per pot were sown, and the stand thinned to one seedling per pot when germination was complete. Harvesting was carried out on 6th June, 1959. Shoots were cut off just below the cotyledons and placed in an oven to dry. The pots were then broken open and the soil gently shaken from the roots. The soil was spread out to air-dry before being sub-sampled for the measurement of pH, while the roots were washed clean and counted for mycorrhizas, then dried.

Only the main effects were significant: there was no interaction between the two salts for any of the attributes measured. The results are tabulated below:—

EFFECT OF SODIUM NITRATE AND SODIUM CARBONATE ON SOIL pH, AND YIELD AND MYCORRHIZAL DEVELOPMENT OF *PINUS TAEDA*

Means of 20 pots in grams dry matter for yield (shoots plus roots) and percentage of forked short roots for mycorrhizas.

Treatment	Soil pH	Yield (g)	Mycorrhiza* (Per cent.)
Without NaNO <sub>3</sub> .. .. .	6.73	0.23	28.3 (31.8)
With NaNO <sub>3</sub> .. .. .	7.17	0.16	10.3 (16.0)
Without Na <sub>2</sub> CO <sub>3</sub> .. .. .	6.76	0.18	21.4 (25.1)
With Na <sub>2</sub> CO <sub>3</sub> .. .. .	7.14	0.21	17.1 (22.7)
Sig. diff. p 0.05 .. .. .	0.06	0.04	(5.2)
Sig. diff. p 0.01 .. .. .	0.08	0.06	(6.9)

\* Mean arc sin transformations shown in brackets.

The effect of NaNO<sub>3</sub> in increasing soil pH must be due to the removal of its nitrate from the soil because, so long as it remained, there could be no change in pH. Since the pots were undrained it could not have been leached from the soil; therefore it must have been utilized by the seedlings or by micro-organisms. No analyses have yet been made, but it is probable that much of the nitrate was taken up by the plants.

Na<sub>2</sub>CO<sub>3</sub> also increased soil pH, and its effect was sufficient to disperse the humic matter in the soil and produce a dark-brown crust on the surface. The effects of NaNO<sub>3</sub> and Na<sub>2</sub>CO<sub>3</sub> when applied together were additive.

Germination, growth and mycorrhizal development was poor in the presence of NaNO<sub>3</sub>. This confirms previous experience of the effect of this salt on young pine seedlings. Since Na<sub>2</sub>CO<sub>3</sub> increased soil pH but did not depress yield or mycorrhiza development, the effects of NaNO<sub>3</sub> could not have been caused by the sodium ion but must have been due to the nitrate ion. It is not certain why this should depress growth, but N/P imbalance is suspected. The cotyledons and older primary needles on many seedlings treated with NaNO<sub>3</sub> died and younger primary needles turned purple, symptoms which are usually associated with acute phosphorus deficiency.

It is an old observation that mycorrhizas are better developed on trees growing in acid than in neutral or alkaline soils. It has been tacitly assumed that this is so because mycorrhizal fungi prefer acid conditions. However, the present data show that high soil pH is not necessarily associated with reduced mycorrhiza formation; in this experiment the nitrate ion was the cause. In earlier experiments it was shown that ammonium nitrate depressed mycorrhiza formation, especially when lime was added also. In such work it was not possible to differentiate between the effects of increased soil nitrate and increased pH. The evidence now presented supports the belief that the results then obtained were due to nitrification and not to alkalinity per se. Whether the nitrate ion acts directly or indirectly (e.g. by inhibiting uptake of phosphorus) is another matter.

(c) *Hoop and Kauri Pine.*—The healthy growth of Hoop Pine and of Kauri Pine wherever they have been established under an overwood of Slash or Loblolly pine on typical poor coastal soils in the Beerwah area, continued during the year. Results are not yet available from

fertiliser experiments laid down with Hoop Pine in this area. Some of the plots have made satisfactory height growth but, in general, the plantings lack the healthy green appearance of the underplanted trees.

Preliminary action has been taken to revise the Hoop Pine volume tables utilizing the electronic computer (I.B.M. 650) at the Sydney University. Two of the Department's officers are being trained in programme writing and the necessary punching of cards is proceeding.

The maintenance of thinning experiments remains the most important function of the officers stationed at Imbil and Yarraman, and these cover Kauri as well as Hoop Pine. In 1954 there was established at Imbil a series of thinning experiments with Kauri Pine, using both basal area and numerical controls of stocking. Results after five years afford an interesting comparison with those obtained with Hoop Pine and indicate only minor differences in behaviour between these two species. Below are figures for Experiment 334 Imbil located in Compartment 25A, Derrier Logging Area, on R. 135 Brooloo. The experiment was planted in March, 1937, and embraces 12 plots with treatments as follows:—

Plots 1 and 8—Thinned in accordance with current routine.

Plots 4 and 10—Thinned to hold an average Basal Area of 100 square feet.

Plots 9 and 6—Thinned to hold an average Basal Area of 120 square feet.

Plots 3 and 12—Thinned to hold an average Basal Area of 140 square feet.

Plots 7 and 2—Thinned to hold an average Basal Area of 160 square feet.

Plots 5 and 11—Basal Area control as yet undecided.

Thinning in both routine plots and in the first mentioned of each pair with Basal Area control was directed at favouring the 160 select trees per acre by removing their most serious competitors. In the other plots the aim was to retain the prescribed Basal Area in the best stems available considering stem form, vigour and average spacing.

Numbers of stems per acre associated with these treatments have been:—

Plot	Routine		100 Square Feet		120 Square Feet		140 Square Feet		160 Square Feet		Unthinned	
	1	8	4	10	9	6	3	12	7	2	5	11
1954 .. .. .	405	372	320	273	363	325	405	395	499	447	540	510
1956 .. .. .	405	372	268	221	326	281	375	350	499	447	540	510

Basal Area, and Volume Increments for the period 1954-59 have been:—

Treatment	Plot	Basal Area Increments in Square Feet				Average Annual Increment Merchantable Volume to 4 inch d.u.b. in Cubic Feet
		160 Select per Acre	Whole Stand			
			1954-59	1954-59	1957-58	
100 square feet Basal Area .. .. .	10*	22.8	34.7	4.2	7.2	190
	4	20.9	32.6	4.4	7.3	186
120 square feet Basal Area .. .. .	6*	22.3	40.7	5.0	8.0	230
	9	17.6	31.3	3.3	6.9	190
140 square feet Basal Area .. .. .	12*	17.5	40.5	4.9	7.7	225
	3	20.5	42.0	5.8	8.1	240
160 square feet Basal Area .. .. .	2*	17.5	41.7	5.8	8.6	250
	7	15.0	41.2	5.0	7.9	230
Routine .. .. .	1	19.7	38.4	5.3	8.3	224
	8	17.5	32.2	3.0	7.4	190
Unthinned .. .. .	5	16.1	40.9	5.2	6.8	230
	11	17.2	41.6	4.3	8.0	240

\* Plots in which Basal Area is retained in best stems.

The standing Basal Area in the routine plots is approximately 148 square feet and in the unthinned 193 square feet at measure in 1959.

These results do not indicate any advantage to thinning directed at favouring select stems. The increment of the select stems is no better in the plots so thinned nor is the overall increment greater. Since the plots in which the best trees are retained have fewer and bigger stems this experiment suggests that this should be routine practice with Kauri, a species which prunes itself naturally.

Graphs of Basal Area increment against standing Basal Area for each of the years 1956-57, 1957-58, and 1958-59 indicate that the Basal Area which gives maximum Basal Area increment is 150 square feet at age 19-22 years. This is about 15 square feet higher than for Hoop Pine in the Mary Valley and this fact has been recognised in framing routine thinning prescriptions where the numbers retained at first thinning are 350 per acre for Hoop, 380 for Kauri.

(d) *Coastal Hardwoods*.—The seventh annual prescribed burn was carried out in the experiment at R. 958 Gundiah during the year, but only 10 per cent. of the compartment was covered by the fire, as compared with 87 per cent. in the previous year. The unsatisfactory result is attributed to poor grass growth during the dry 1957-58 summer, followed by an unusual growth of grass, which was not completely cured at the time of burning, during the abnormally wet winter.

At R. 57 St. Mary, the combination of burning, logging and silvicultural treatment initially laid down for the experiment has now been completed and this compartment should be fully protected until the next cutting cycle.

Girth increments in the two experiments for 1958-59 as compared with the previous year were:—

Species	G.B.H. Increment—Inches							
	R. 958 Gundiah				R. 57 St. Mary			
	Unburnt		Burnt		Unburnt		Burnt	
	1958-59	1957-58	1958-59	1957-58	1958-59	1957-58	1958-59	1957-58
Spotted Gum ..	0.25	0.25	0.32	0.21	0.63	0.26	0.81	0.33
Grey Ironbark ..	0.35	0.47	0.42	0.48	0.92	0.41	1.02	0.64
Red Ironbark ..	0.56	0.72	0.46	0.48	0.61	0.54	0.95	0.69

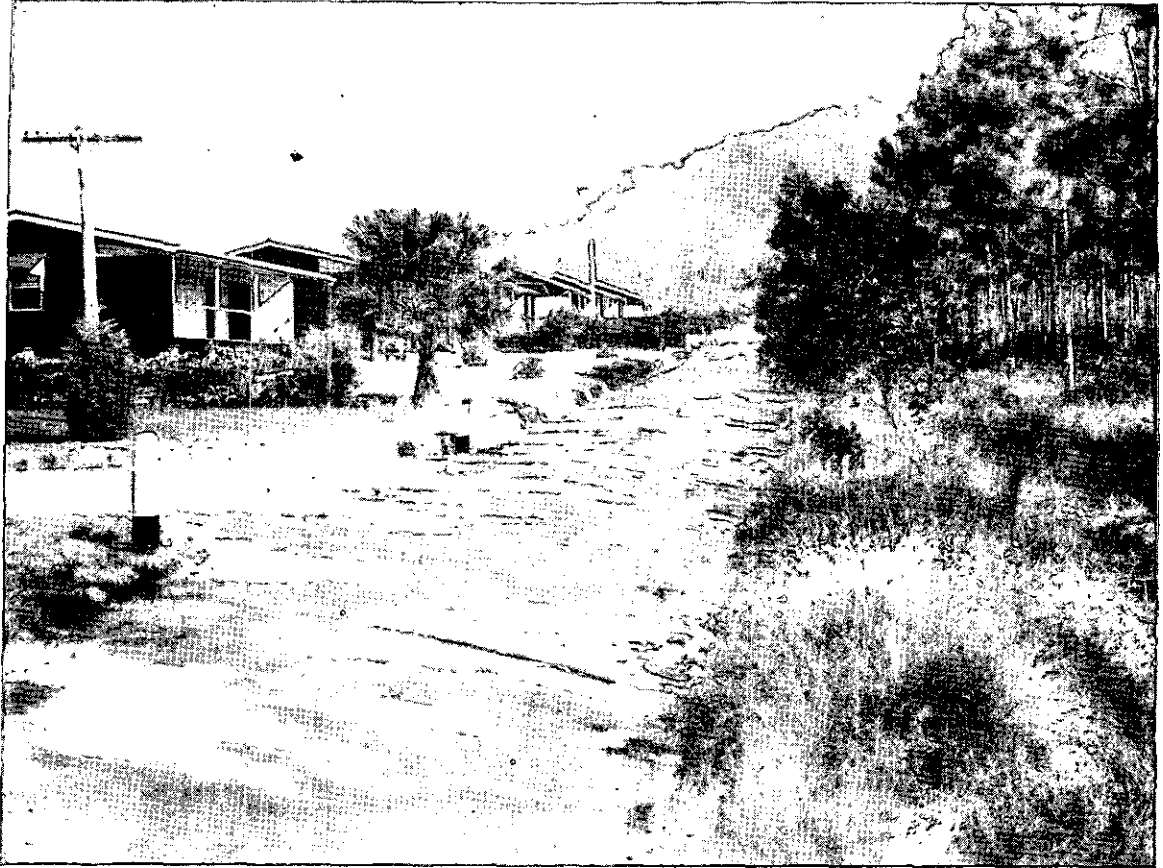
It is evident that the silvicultural treatment at R. 57 has markedly stimulated girth increments. The burnt compartments still maintain their advantage at both centres.

Measurements of girth at 15 feet to check on possible form changes induced by burning have been continued, but they do not indicate that any such changes have occurred during the currency of the experiments.

Survival of regeneration from the 1958 seedfall has been satisfactory even in areas which were covered by the 1958 burn at R. 958. The seedlings now have well developed lignotubers and appear to be firmly established.

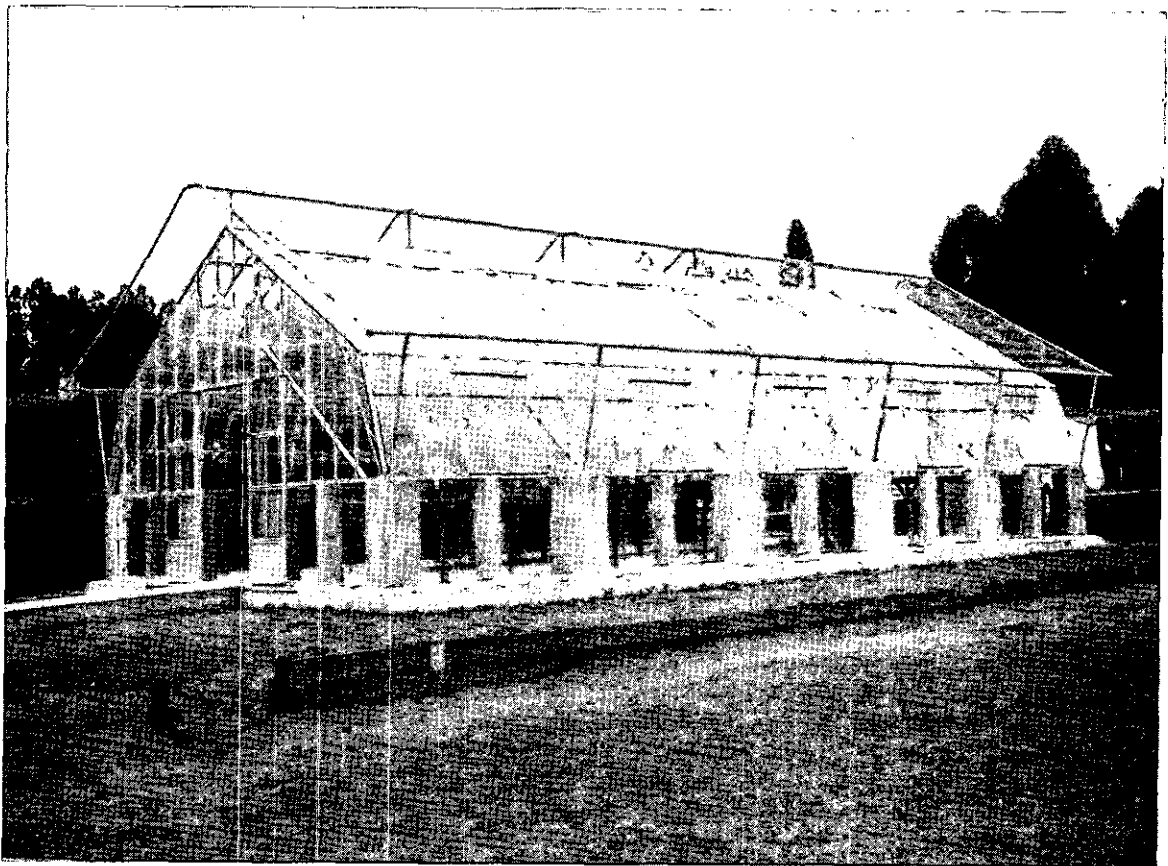
Detailed assessments of weed species in the burnt and unburnt compartments indicate that burning has greatly restricted the spread of lantana, but has stimulated fresh germination of wattle. In the unburnt compartments much of the wattle appears to have reached the end of its natural life and is dying without the development of new seedlings.

Following the success of previous small scale enrichment plantings in high quality hardwood forests, a more extensive experiment was commenced, during the year, in an area of heavily logged Blackbutt forest where seed trees were deficient. Blackbutt, which has proved very suitable for this work, was the only species used for the enrichment planting and the whole operation was carried out in accordance with probable routine practice. Comparison with standard silvicultural treatment in the same area will be made on the basis of results achieved and overall costs.



**BARRACKS TO ACCOMMODATE MEN EMPLOYED ON THE BYFIELD REFORESTATION PROJECT, ROCKHAMPTON DISTRICT.**

Barracks on all State Forests can accommodate 1,500 men.



**NEW PLANT GLASSHOUSE AT BEERWAH RESEARCH STATION, BEING USED FOR PLANT NUTRITION RESEARCH.**



An amount of £106,547 was expended on construction of firebreaks and fire roads, and maintenance of the system cost a further £115,620.

The cost of observation, patrol, detection and firefighting was £35,855. This compares favourably with the expenditure of £128,607 during the much more serious 1957-58 fire season.

The fire season was marked by a series of minor peaks of fire danger, culminating in "Very High" or "Extreme" conditions at the end of October. Winds of Beaufort Force 6 (up to 27 knots) and temperatures of up to 103 degrees F. were recorded at this time.

Conditions then eased to "Low" in January as the result of a series of widespread summer storms, but again built up during February when seasonal rainfall was less than average in many centres.

As a result of the extensive fires in 1957-58, fuel quantities were moderate and this factor undoubtedly assisted to reduce the severity of the fires which did occur.

Once more, approximately two-thirds of the fires which burnt on or near State Forests occurred during the latter half of October and the first half of November. This period is marked by—

- (1) An annual peak of drying of fuel resulting from high temperatures, low humidities, and high winds (west or north west) at the end of the "Dry Season";
- (2) The desire of many landholders (mainly cattle men) to burn off dry grass prior to the summer storms of November and December.

Thirty-one of the fifty recorded fires whose causes were definitely identified resulted from "Burning off," either with or without Permits. "Mop up" or "Blacking out" is largely neglected by landholders.

TABLE "B"  
AREAS BURNT BY FIRES ORIGINATING ON OR ENTERING INTO STATE FORESTS  
(ALL FORESTRY DISTRICTS) ON WHICH THERE IS SOME DEGREE OF PROTECTION

Type of Forest	Degree of Protection		Total Area Burnt
	Intensive	Extensive	
	Acres	Acres	Acres
A. Plantations .. .. .	118	..	118
B. High Quality Forests .. .. .	1,291	2,324	3,615
C. Low Quality Forests .. .. .	1,358	3,425	4,783
Total Area Burnt .. .. .	2,767	5,749	8,516
Burnt Area as Percentage of Acres Protected .. .. .	0.22	1.78	..

Percentage of Protected Area burnt—0.52 per cent. (8,516 acres of 1,652,000 acres protected.)

The overall loss of the protected area (0.52 per cent) should be compared with that of the severe 1957-58 and 1951-52 Fire Seasons which was 3.7 per cent. and 15 per cent. respectively.

Tables "C," "D," and "E," illustrate the pattern of fire occurrence and control (with respect to State Forests).

TABLE "C"  
CAUSES OF FIRES ATTACKED ON OR NEAR STATE FORESTS

Cause	Number of Fires	Percentage of Total
(A) Burning off—with Permit .. .. .	8	11.6
(B) Burning off—without Permit .. .. .	23	33.3
(C) Smokers, tourists, travellers .. .. .	4	5.8
(D) Lightning .. .. .	5	7.2
(E) Trains, Railway burning .. .. .	..	..
(F) Industrial Operations—Mills, Logging .. .. .	4	5.8
(G) Cars, tractors, mechanical equipment .. .. .	..	..
(H) Restarts from previous fires .. .. .	6	8.7
(I) Miscellaneous known causes .. .. .	..	..
(J) Unknown .. .. .	19	27.6
	69	..

The absence of fires caused by Railway Locomotives and workers is a notable feature of this table. Most of the "Cause Unknown" fires were probably in Class "B"—Burning-off without permit (during the October-November period).



TABLE "D"  
SIZE REACHED BY FIRES ORIGINATING ON OR ENTERING FOREST  
RESERVATIONS (ALL FORESTRY DISTRICTS)

Size of Fires	Total	Percentage
Acres		
0-10 .. .. .	32	46.4
11-100 .. .. .	18	26.1
101-1,000 .. .. .	16	23.2
1,001-10,000 .. .. .	3	4.3
10,000 + .. .. .	..	..
	69	..

TABLE "E"  
MONTHLY FIRE OCCURRENCE (ALL FORESTRY DISTRICTS)

Month	Total	Percentage
June .. .. .	..	..
July .. .. .	3	4.3
August .. .. .	4	5.8
September .. .. .	6	8.7
October .. .. .	27	39.1
November .. .. .	17	24.7
December .. .. .	9	13.1
January .. .. .	1	1.4
February .. .. .	..	..
March .. .. .	2	2.9
April .. .. .	..	..
May .. .. .	..	..
	69	..

The system of recording and reporting Fire Weather conditions to the Divisional Office of the Bureau of Meteorology was continued and improved and valuable Fire Weather Forecasts were received and relayed to all Districts except Atherton.

A number of Research Projects conducted by the Bureau are in hand at present. These are devoted to particular aspects of Fire Weather Forecasting and should lead to improvement of the already high standard.

The policy of carrying out prescribed burns under specified conditions on selected hardwood forests has been implemented in a number of Districts and the results of this hazard reduction measure are being examined closely. Costs for initial burns (many on areas which have been completely protected for upwards of twenty years) have been high, but subsequent burning of the reduced hazards should prove cheaper than the maintenance of complete protection as previously practised. The silvicultural effects of this programme are being closely studied.

Loss of a total of 118 acres of plantation (30 acres of which was of poor development) was associated in each of five instances with burning operations carried out by the Department. Four fires were lit by burning material carried aloft by convection columns from "scrub burns" and one was lit as the result of a blow-over from burning operations on an adjacent grassed and timbered fire break.

The fact that plantation clearing burns in Hoop Pine plantation areas are normally lit during the months of October and November does not make the task of control any easier.

This problem is currently being studied by officers of the Bureau of Meteorology who are investigating the correlation of unusual weather factors and fire occurrence and severity.

#### Capital Improvements

The work of improving the accommodation of married men living on the job with their families was extended and further work is envisaged for the coming year.

The completion of a new modern office and cottage for the resident Forester at Beerburrum has enabled headquarters of that sub-district to be transferred there from Beerwah, which, in future, will be largely a research centre. A new research office with laboratory and glasshouse and a new cottage for a research officer were established at Beerwah. It is proposed to add a soils laboratory and a further cottage in 1959-60.

Two modern cottages to house employees at Byfield were also erected. Smaller items of construction included—

Item	No.
Offices .. .. .	2
Married Quarters (permanent) .. .. .	15
Married Quarters (portable) .. .. .	20
Cottages .. .. .	3
Barracks—6 man .. .. .	3
Garage/Workshop/Storeroom .. .. .	6
Fire Lookout Towers .. .. .	4
Glasshouse (Research) .. .. .	1
Culverts and Grids .. .. .	30
Bridges and Crossings .. .. .	19
Telephone Line .. .. .	39 miles

### Expenditure and Labour

The total expenditure for the year on reforestation work was £1,531,422; Appendix H records the details. Major headings involved the following:—

	£
Plantations .. .. .	340,811
Natural Regeneration .. .. .	40,076
Nursery Expenses .. .. .	46,766
Research .. .. .	34,266
Surveys .. .. .	25,133
Protection .. .. .	284,319
Capital Improvements .. .. .	88,487
Tools, Tents, Supervision, &c. .. .. .	305,694
Wet time, Holidays, Leave .. .. .	159,322
Cartage of Rations .. .. .	14,995
Camping Allowance .. .. .	114,713
Pay-roll Tax .. .. .	29,808
Workers' Compensation .. .. .	29,740
Seed Collection and Storage .. .. .	2,351
Miscellaneous .. .. .	14,941
	<u>£1,531,422</u>

The number of wages employees engaged on reforestation work during the year varied from 1,423 in July, 1958, to 1,288 in June, 1959, with an average monthly employment of 1,311.

### Plant

Expenditure for the year on plant was—repairs and maintenance £185,790, purchase of new items £79,518.

There is still a pronounced deficiency in the number of power graders, rotary hoes and some heavier trucks. A census of the main items at 30-6-59 showed:—

	Purchased 1958-59	Number at 30-6-59
Motor Trucks—		
Capacity—		
Under 1 ton .. .. .	15	184
1-2 tons .. .. .	—	7
2 tons .. .. .	5	112
3-4 tons .. .. .	—	5
5 tons .. .. .	6	13
Total .. .. .	<u>26</u>	<u>321</u>
Tractors (D.B.H.P.)—		
(a) Track type—		
Up to 50 h.p. with dozer .. .. .	—	3
Up to 50 h.p. without dozer .. .. .	—	23
50-100 h.p. with dozer .. .. .	3	25
100 h.p. + with dozer .. .. .	—	5
(b) Wheel type (End Loaders, Rotary Hoes, &c.) .. .. .	8	44
Total .. .. .	<u>11</u>	<u>100</u>
Graders—		
Drawn .. .. .	—	24
Powered to 40 h.p. .. .. .	—	9
Powered 40-80 h.p. .. .. .	—	4
Powered 80-100 h.p. .. .. .	—	6
Powered 100 + h.p. .. .. .	1	3
Total .. .. .	<u>1</u>	<u>46</u>
Road Compressors .. .. .	1	12
Rippers .. .. .	—	23
Rotary Hoes .. .. .	8	37
Fire Slip on Tank Type Units (Standard Type) .. .. .	—	72
Fire Tank Units (various types) .. .. .	—	27
Water Tank Trailers (324 gallon) .. .. .	—	40
Road Rollers .. .. .	—	6
Road Scoops .. .. .	—	18
End Loaders .. .. .	—	8

## ACQUISITION OF LAND

During the year 1958-59, an amount of £3,515 1s. 5d. was expended on the acquisition of land for Forestry purposes as follows:—

	£	s.	d.
Purchase of land .. .. .	313	7	9
Compensation paid for Resumptions .. .. .	2,449	7	0
Survey and Real Property Fees .. .. .	434	9	0
Miscellaneous .. .. .	317	17	8
	<u>£3,515</u>	<u>1</u>	<u>5</u>

Two properties, covering an area of 309 acres 1 rood 22 perches, were purchased and four areas totalling 479 acres 1 rood 36 perches were resumed.

## FOREST SURVEYS

Fourteen fully equipped camps operated during the year, while seven smaller camps were continuously occupied with miscellaneous surveys. Of the fourteen equipped camps, six were totally engaged on Forest Inventory surveys.

Total expenditure on survey work amounted to £69,628 16s. 5d., of which £44,496 1s. 1d. was chargeable to Harvesting and Marketing projects and the balance, £25,132 15s. 4d., against Reforestation projects.

As a result, 106,391 acres were assessed; 20,030 acres were subjected to either firebreak, compartment, or soil survey; 79,580 acres were covered by forest inventory survey, entailing the establishment of 741 plots; 3,937 plots were re-measured, whilst 150,009 acres were closely inspected (Class I Survey).

Mileage completed was:—

	Miles	Chains
Theodolite and chain .. .. .	84	15
Compass and chain .. .. .	1,126	77
Strip survey .. .. .	1,363	06
Old boundaries .. .. .	51	29
Road investigation and survey .. .. .	104	45
Re-survey .. .. .	16	47

Briefly, operations in each district were:—

**Atherton.**—Two camps operated throughout the year in North Queensland, whilst a third party of two men commenced compartment and road surveys on R. 185 and R. 1071 Danbulla in April.

The first camp devoted most of its time to access road surveys, summary of which is shown hereunder.

Reserve	Road	Mileage	
		Miles	Chains
350 Niagara .. .. .	Yamini Creek .. .. .	7	60
60 Meunga .. .. .	Alma Gap to Dunns Creek, South Murray Falls	5	22
353 Bankton .. .. .	Davidson River .. .. .	17	03
V.C.L. Lannercost .. .. .	Oak Hills .. .. .	4	55
441 Mount Spec .. .. .	Watt, South Cloudy .. .. .	6	27
756 Alcock .. .. .	" B " road extension .. .. .	2	70
756 Ongera .. .. .	Plateau .. .. .	1	00
909 Hull .. .. .	Nyletta Creek .. .. .	0	30
268 Waterview .. .. .	Boundary .. .. .	2	46

The second camp spent the bulk of its time on R. 1073 Smithfield, with miscellaneous jobs up to a week or so to do minor boundary work, which included re-opening lines on National Parks 226 and 880, State Forest 607 and Timber Reserve 756.

On R. 1073, sixteen miles forty-seven chains were re-traverse of Black Mountain Road to establish corners.

Other mileage of either roads or road trials amounted to 67 miles 4 chains plus 28 miles 14 chains of old boundaries.

**Mackay.**—In the first part of the financial year assessment was finalised on portions 3 and 4, parish of Davy, camp being shifted to portion 1 Goomally. Assessment work was carried out on this portion, together with a further area in the parish of Davy. An inspection was also made of Repulse Creek North with the view to later assessment.

In the Theodore area a second camp completed about 43,000 acres of strip survey, which covered portion 1 Coorada and part of Ghinghinda Holding before shifting to R. 20 Maryvale in the New Year. On this unit, portions 8 and 9 Maryvale were controlled and stripped and other miscellaneous surveys were effected.

A new camp, organised in early January, continued operations in the Coorada area and portions 1 Quakit, 17 Gibbergunyah, 1 and 2 Tuturin and Reserve 1 Tuturin had been dealt with by the end of the report period.

**Maryborough.**—Compass and chain traverses of main internal firebreaks and access roads in new western area of R. 915, parishes of Tahiti and Bidwell, totalled 13 miles 68 chains. Final design for about 1,600 acres plantable into 24 compartments is almost complete on Suttie Logging Area.

Unplantable boundaries on this and Tallegalla Logging Area were soil-checked and surveyed and a further 2,500 acres are ready for compartment subdivision. Other work included the picketing and offsetting of planting access roads, species surveys and the layout of experimental plots.

Miscellaneous surveys, carried out by local district staff, included work on Reserve 8 Doongul, R. 38, R. 47 Woocoo, R. 77, R. 86, R. 102, R. 166 Eurimbula, R. 98 St. Mary, R. 169 St. Agnes, R. 799 Takalvan and R. 832 Cordalba, a total chainage of 112 miles 62 chains being run.

A third camp, organised in July, completed soil survey of the whole of Reserves 779 and 563 Gregory—area 15,130 acres. Thirty-four compartments on part of R. 779, giving a total planting area of 2,605 acres in one compact unit, were surveyed and plantable boundaries traversed. This was also done on R. 563, but no compartments were laid out. Camp closed on 24th December.

By the end of October the Fraser Island Forest Inventory Survey had been completed. Five more detailed yield plots were established, whilst 184 random plots were selected. It was necessary to re-open 20 miles 30 chains of old boundaries. Camp was then shifted to the Sunday Creek forest at Jimna.

Forest Inventory survey of Reserve 832 Cordalba was continued, field operations being completed by 17th November. An area of 29,680 acres was covered and a total of 297 plots established. Camp then shifted to Mapleton (Brisbane District).

**Gympie.**—Four camps operated throughout the year, one in the Gympie sub-district and three in the Mary Valley area.

The Gympie unit completed miscellaneous surveys on R. 124 (Eel, Shacks, Falls Logging Areas), R. 242 (West, Central and Ironwood Logging Areas), R. 392 (East and West Logging Areas) and also at Toolara (R. 1004). This work included scrub breaks, roads, leases, overburns, species, soil types, &c.

A Forest Inventory survey was continued throughout the year by a second camp and 123 hardwood plots were re-measured on R. 393, 234, 627, and 502. In addition, 591 plantation yield plots were dealt with on R. 435, 256, and 274.

The third camp was engaged on the plantation and compartment design on Corby, East Derrier, Cliff, Sawpit, East and West Coonoongibber, and Pullen Logging Areas on R. 135, a plantable area of 2,132 acres being located. A grade line access and protection road between East and West Derrier was run, also a trial grade up the Coonoongibber Valley. Site Index (predominant height) was carried out on compartments 10, 11, 12, 13a, Derrier, plus survey of overburn on Western Logging Area.

A fourth small camp completed miscellaneous surveys including species, write-offs, yield and trial plots, overburns, access roads, on the Mary Valley forests as required.

Theodolite control surveys totalling 28 miles 23 chains on R. 256, 135 and 274 were run and marked at various periods by visiting Ranger.

**Murgon.**—A three-man local camp based at Jimna operated throughout the year in both the Jimna and Kilkivan Sub-districts. Work completed included miscellaneous surveys on R. 137, 207, 792, 554, and 343 in the Jimna area and similar surveys on R. 154, 298, 97, 99, and 220 in Kilkivan. For details see Appendix M.

On 10th November a second camp from Fraser Island commenced Forest Inventory survey of the hardwoods in the Sunday Creek forest—now R. 792, but formerly R. 434, 274, and 480. For each reserve a 1·1 per cent. systematic sample of 1 acre (5 x 2) permanent plots was drawn up at thirty chains interval along strip lines. Plot positions on alternative strips were staggered. Types were booked and aerial photos used to fill in details of typing.

Details of plots established are:—R. 434, 53 plots; R. 274, 97 plots; R. 480, 63 plots. Approximately 195 plots remain to be established.

Theodolite controls totalling 67 miles 36 chains on R. 154, 298, 673, Gallangowan, R. 612 and 138 Manumbar and 480 Kilcoy were run at various periods by visiting ranger.

**Monto.**—A small district two man camp operated throughout the year and the principal work carried out was compartment and firebreak survey on Gorge and South Back Logging Areas, R. 107. Nine compartments were surveyed in South Back, whilst 3 were subdivided in Twenty Mile Logging Area. Survey of external scrub edge on North Back and Barguenquest is proceeding. In addition, scrub-falling surveys in Compartments 1 and 2 Fireclay were completed, overburns, roads, and other miscellaneous district surveys were effected.

**Yarraman.**—The usual programme of district survey work, entailing scrub-falling sub-division, compartment boundaries and scrub firebreaks, new roads and thinning roads were completed—a total of 46 miles 74 chains being run. See Appendix M.

**Brisbane.**—The Beerburrum camp completed new areas for plantations as follows:—R. 766 Beerwah, 50 acres; R. 561 Bribie, 300 acres; R. 700 Toorbul, 700 acres.

Other surveys included boundary, soil, lease, unauthorised operations, &c., throughout the North Coast area.

A further 4 miles 68 chains of theodolite control was run on the Bellthorpe Road (R. 370 Durundur).

The Forest Inventory camp transferred from Bundaberg in November re-measured 186 plots on Reserves 318, 292 Maroochy, and Reserves 445, 572, and 583 Kenilworth. Thirteen plots were located on Reserve 313 Durundur and camp is at present engaged on Reserve 1635 Kholo.

**Warwick.**—Forest inventory on R. 81 Tandan, Beebo, and Bracker was completed by 21st October, when camp shifted to R. 101 Devine. Early in February this camp transferred to the Dalby District. List hereunder sets out details of work completed during the financial year:

Reserve	Number of Plots	Strip Mileage		Intermediate		Compass and Chain	
81 Bracker .. .. .	38	14	12	21	35	6	29
120 Greenup .. .. .	15	8	20	20	48	..	..
132 Texas .. .. .	11	5	13	10	75	..	..
118 Wyemo .. .. .	10	4	34	14	37	5	40
13 Texas .. .. .	14	6	45	27	45	..	..
101 Devine .. .. .	36	16	06	56	26	..	..
48 Umbercollie .. .. .	41	23	54	32	67	8	11
Totals .. .. .	165	78	24	184	13	20	00

**Dalby.**—The Inglewood camp commenced operations on R. 174 Boondandilla, where 31 plots were established and 75 miles of compartment boundary had been run by the end of the report period.

The second camp at Chinchilla completed re-measurement of 1,861 plots in May and was then transferred to R. 302 Goldsmith (Hippong) where 21 plots have been established for a strip chainage of 12 miles 57 chains.

The third camp continued the re-measurement of Inventory plots on Western Creek (R. 154 Vignoles and Brigalow), field work being completed by the Christmas closure. A total of 541 plots and 31 detailed experimental plots were re-measured. Camp shifted to R. 150 Dunmore where 124 plots were re-measured. On 28th May camp transferred to R. 302 Ballon where 418 plots had been dealt with by the end of the report period.

**General.**—Throughout the year investigations on timber stands were completed by officers of the Harvesting and Marketing Branch as opportunity offered. Although this work was not carried out by, or costed to Survey Camps, a list of areas dealt with has been compiled under Class 1 Surveys giving details for future reference.

## NATIONAL PARKS

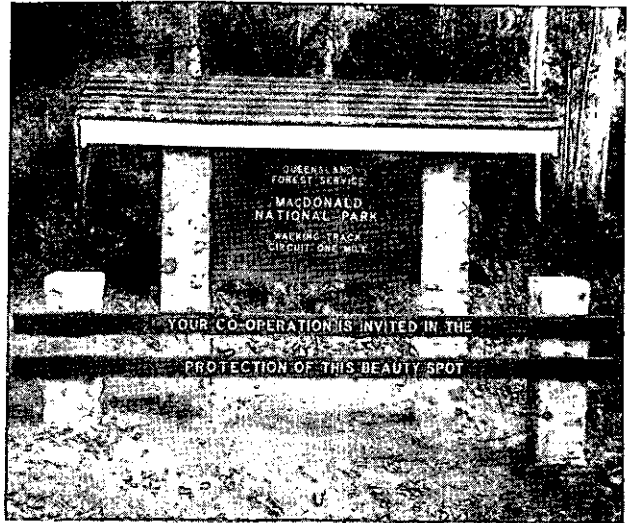
Not the least important work entrusted to the Department of Forestry is the care and management of National Parks.

In these restless and changing times there is a measure of comfort for the nature lover and for the cultured in the unchanging purpose of the National Park system "to conserve the scenery and the natural and historic objects and the wild life therein, and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

**GLIMPSES OF SOME NATIONAL PARK WORK.**



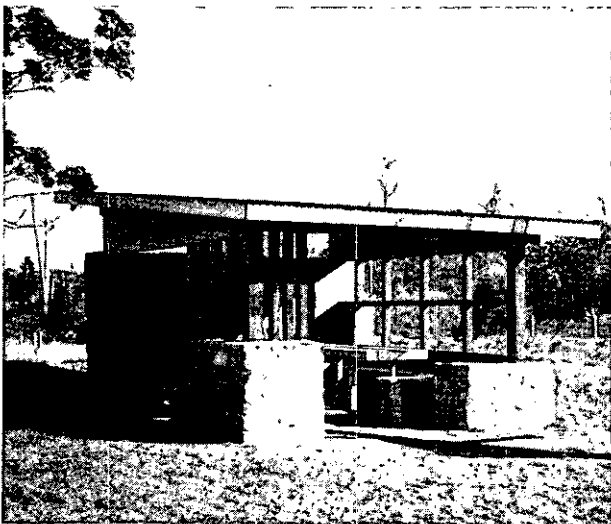
**Lookout over Albert Valley,  
Knoll National Park, Tamborine Mountain.**



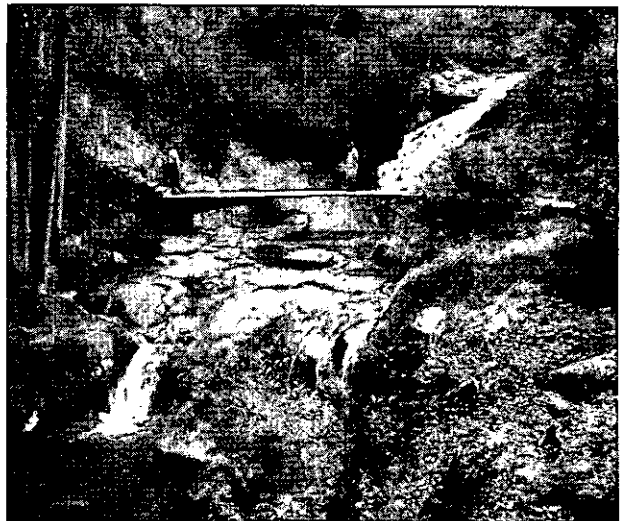
**Typical National Parks sign,  
MacDonald Park, Tamborine Mountain.**



**Example of a graded walking track,  
Ravensbourne National Park.**



**Barbecue shed for picnickers,  
Purlingbrook Falls National Park, Springbrook.**



**Causeway over Picnic Creek,  
Kondalilla National Park, Montville.**

Queensland has followed this National Park concept as closely as possible and any "development" of the parks has been based on the cardinal principle that they must be preserved as far as possible in that simplicity and unspoiled beauty which makes them unique.

In this connection it might be appropriate to quote from "An Appreciation of National Parks" presented by the National Parks Association of New South Wales in 1957, in which it was stated—"Queensland Forestry authorities in their administration of National Parks have shown the way; access by road to the boundaries of parks, excellent graded walking tracks through the otherwise untouched natural environments."

The year 1936-37 saw the first provision made on the Estimates for National Parks work and, with expenditure of £41,147 for the year 1958-59, the total expenditure to 30-6-1959 was £557,073.

Some features of the year's work were—

*Lamington.*—The Moran's Falls track reached a stage where it is now open to visitors. It is one of the most spectacular pieces of work so far undertaken on a National Park. A safety fence permits visitors to view the rugged gorge and picturesque falls in safety and comfort. There are now 90 miles of graded track on this, the chief National Park in Queensland.

*Tamborine Mountain.*—Five chains of formed track were constructed, providing access to Cameron's Falls lookout overlooking Sandy Creek gorge in the Knoll National Park. There are now 11½ miles of graded track on the several National Parks at Tamborine Mountain.

*Springbrook.*—Eleven chains of new track were built on Warrie National Park to overcome drainage problems, whilst extra facilities were provided at Gwongorella picnic ground.

*Bunya Mountains.*—A by-track of three chains was constructed to the picnic place and lookout over the range at Tim Shea plain, bringing total mileage of track system to 15.

*Ravensbourne.*—Rock steps, terraces and track were completed linking the Sandstone Cave with the Palm Grove on Buaraba Creek.

*Hayman Island.*—One hundred and sixty-six chains of new track were constructed, taking in features on the island.

*Lindeman Island.*—One hundred and seventy chains of new track were constructed.

*Lake Barrine.*—Access road was widened and metalled to a width of 24 feet. Parking area was metalled and posts erected around perimeter. Flight of 26 cement steps was constructed to give access from parking area to roadway below.

*Tully Falls.*—Footbridge giving access to Eyrie lookout was entirely rebuilt.

Other work carried out included erection of ornamental entrances, provision of toilet conveniences, erection of direction signs, name-plating of trees, eradication of noxious plants, and provision of picnic ground facilities such as tables and fireplaces. The local Overseer has stated that the provision of tables at Witches Falls entrance has proved very popular and many remarks, complimentary to the Department, have been passed.

The total length of constructed track in all reservations at 30th June, 1959, was 247½ miles.

Ready co-operation in maintaining and improving access roads to National Parks was given by Local Authorities including Beaudesert, Albert, Nanango, Kingaroy, Crow's Nest, Maroochy, and Noosa Shire Councils.

Very good relations were maintained also with the Main Roads Department. A particularly pleasing gesture was that Department's consent to the transfer of an area of about three acres for parking and picnic ground, being part of road widening at Numinbah Natural Bridge.

Sporadic outbreaks of vandalism continue but there has not been a noticeable increase. A penalty of £25 was imposed on an offender who, by the unauthorised use of fire, caused damage to standing timber on Lamington National Park.

The very good work done by Honorary Rangers, by means of organised and private patrols and by personal contact with visitors, to further the policy of preservation and protection is acknowledged.

The National Parks Association is to be complimented on its publication "The National Parks of Queensland," published to mark the 50th year of National Parks in Queensland and the 25th anniversary of the Association's activities in this State.

Public reaction to forestry administration and control of National Parks is very favourable, particularly among interstate visitors. The total number of visitors for the year was approximately 550,000.

The excellent work done by the resident staff, particularly during week-ends, in patrolling and protecting the Parks, is appreciated. The following extract from a letter by a visitor to the Ravensbourne National Park, which appeared in the "Toowoomba Chronicle," is quoted:—

"I have had quite a few trips to the Park in the company of relatives from Sydney and Adelaide, who aptly described it as one of the cleanest reserves they had seen in their travels.

The toilets are always spotless, tables well painted and clean, the paths to the lovely view points are well kept and swings, &c., are enjoyed by the children. Wood is always available alongside the large fire-places ideal for a grill or to boil the billy.

It can honestly be recommended to the public for an enjoyable picnic. In all, the Park is a definite credit to the resident Overseer."

A new National Park of about 740 acres was proclaimed during the year in the parish of Hull, embracing Bicton Hill and part of the Walter Hill Range. This, together with 78 acres added to existing reserves, brought the total area of National Park reservation to 838,134 acres at 30-6-59.

#### HARVESTING AND MARKETING

**General.**—A total of 227,680,000 superficial feet, hoppus measure, of milling timber was felled on Crown forests during the year. This is the highest annual cut of Crown timber in five years and has been exceeded only three times previously.

Compared with the year 1957-58 a net increase of 14,700,000 superficial feet in mill log fellings is shown. A significant increase of 15,000,000 superficial feet in the cut of forest hardwood is recorded. The cut of plantation timbers increased by 1,400,000 superficial feet to 20,296,000 superficial feet, the largest cut achieved so far.

Weather conditions were unfavourable for the logging of naturally grown Hoop and Bunya Pine, and of Cabinet woods, which occur in the higher rainfall areas, and removals of timbers in these two groups fell by approximately 2,000,000 superficial feet in each case.

The volume of Cypress Pine felled for milling increased slightly, despite reports of restricted markets for sawn Cypress.

Increases of 1,000,000 superficial feet in scrub hardwoods and 2,000,000 superficial feet in miscellaneous timbers are shown. Increases in the cut of these groups were previously regarded as indications of buoyancy in the sawn timber trade, as they include the least favoured of the numerous mixed species of the Northern rain forests. However, the log supply position within the State, coupled with the steadily rising demand for mill timber, requires and permits the fullest use of the available resource. To achieve this purpose the removal of all millable trees of species of proven utility, which it is silviculturally sound to remove, is required under Departmental sales procedure.

The prescription for marking of trees for removal, while providing for the fuller utilisation of the various species, also aims, in North Queensland, at improving the representation of Cabinet woods of highest value in the stand and in South Queensland the better hardwoods are favoured. An improvement in the overall quality of the log timber grown for the support of the timber using trades will gradually be achieved.

Sawmillers, in most cases, have co-operated in overcoming prejudices against unfamiliar species, realising the advantages to be gained.

Removals of plantation thinnings were higher than those of any previous year, and at the end of the year very active interest in increasing utilisation was evident, following a lull in operations. Sawmill studies provided indications that the minimum utilisable girth for thinnings of Slash and Loblolly Pine should be increased from 18 inches G.B.H. to 21 inches G.B.H.O.B., and sales policy was altered accordingly.

New price lists gazetted on the 27th February, 1959, provide for altered size classes in these species, and a decrease in depot prices has been effected.



New price lists for Hoop Pine thinnings were gazetted on the same date. Price calculations took into account the difference in values of first and subsequent thinnings of the same girth breast high measurement, and changes in the value relationships of the smaller thinnings and those of larger dimensions.

The depot price of small Hoop Pine thinnings was decreased in all cases, but the value of the larger size classes has increased, as could be expected. The following table gives examples of the movement in prices:—

G.B.H.O.B. Class	Value in Railway Yard. (Per 100 Superficial Feet Hoppus)					
	Amamoor		Benarkin		Gympie	
	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
38 + .. .. .	29	11 (27 10)	28	7 (28 1)	28	8 (28 3)
32-37.9 .. .. .	28	11 (26 10)	27	9 (27 1)	27	9 (27 2)
27-31.9 .. .. .	25	9 (25 3)	25	11 (25 5)	26	1 (25 7)
22-26.9 .. .. .	22	7 (22 7)	22	9 (22 9)	22	11 (22 10)
18-21.9 .. .. .	16	10 (18 10)	17	4 (19 0)	17	1 (19 1)

Superseded prices are shown in parentheses. Thinnings available at Benarkin and Gympie are mainly first thinnings, those at Amamoor are subsequent thinnings.

Thinnings in Radiata Pine are now priced on the basis of utilisation to a 4-inch top diameter; previous basis was 3-inch.

There has been a number of requests for further sales of thinnings and at the end of the year action to offer several sales was current.

During the year a Committee appointed by the Government enquired into the relationship between log prices and sawn timber prices, timber marketing procedures and matters affecting the sawmilling industry. The Committee had not completed its report at the end of the year under review. All of the Department's current proposals for alterations in log prices are suspended meanwhile.

Fellings of timber other than milling timber and fuel wood decreased by 7,000,000 superficial feet.

Supplies of squared constructional timbers and of round bridge timbers, such as girders, piles and sills, were comparatively light. Demand for these classes increased towards the end of the financial year.

The removal of millable timber from the area to be inundated by the Koombaloo Pool was completed during the year, the volume of timber amounting, in all, to nearly 20,000,000 superficial feet. Removals from the Tinaroo Dam Area also have been finalised. Other timber producing areas would be affected if the projected Flaggy Creek Dam and Freshwater Creek Dam were constructed, resulting in the loss of further areas of prime forests in the fertile valleys, and adding to the costs of hauling timber from the surrounding areas by interruption of access.

Gross receipts of £2,194,870 from the sale of timber, &c., are compared with £2,475,152 in 1957-58, when a smaller quantity of milling timber, but a greater quantity of constructional round and squared timber, was harvested. Net proceeds were £1,342,738 and £1,397,220 respectively.

Net proceeds in 1958-59 show the effect of the decrease in cut of the species of higher stumpage value (Cabinet woods and Hoop Pine), which is not completely offset by the counter effect of the increase in the cut of the less valuable species.

Gross receipts are lower for the same reason, and, in addition, because smaller quantities of timber were sold on the basis of stumpage plus delivery costs incurred by the Department, as distinct from sales at stump. In the latter case delivery is not arranged by the Department.

The road construction programme was well maintained to give access to the new timbered areas which will be required to be logged as areas now being operated become cut out of mature timber.

**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)									
1953-54	62,289	5,825	11,117	59,067	259,764	29,315	45,878	6,628	479,883
1954-55	48,894	5,159	14,266	54,334	250,743	26,911	49,588	14,002	463,897
1955-56	39,238	6,235	20,054	48,411	255,023	31,361	58,990	17,829	477,141
1956-57	44,395	3,643	20,029	51,772	269,226	32,500	48,245	13,993	483,803
1957-58	49,517	3,030	19,469	56,744	257,472	26,678	44,785	14,396	472,082
1958-59 (estimated)	42,000	2,200	20,400	58,000	262,000	25,000	47,000	17,000	473,600

**Mill Logs—Crown Lands.**—The following are the annual quantities of mill logs obtained from Crown Lands as from 1949-50:—

	Super ft.		Super ft.
1949-50	202,000,000	1954-55	224,000,000
1950-51	187,000,000	1955-56	223,000,000
1951-52	238,000,000	1956-57	221,000,000
1952-53	206,000,000	1957-58	213,000,000
1953-54	240,000,000	1958-59	228,000,000

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)								
1954-55	44,984	4,799	28,129	76,090	9,455	21,185	25,712	14,111
1955-56	35,540	4,660	22,483	76,249	11,463	24,507	28,896	19,740
1956-57	42,638	2,851	21,701	76,165	8,781	22,374	26,576	20,280
1957-58	43,124	2,730	24,433	68,456	9,142	20,964	25,234	18,917
1958-59	40,808	1,951	24,907	83,284	10,162	19,139	27,131	20,296

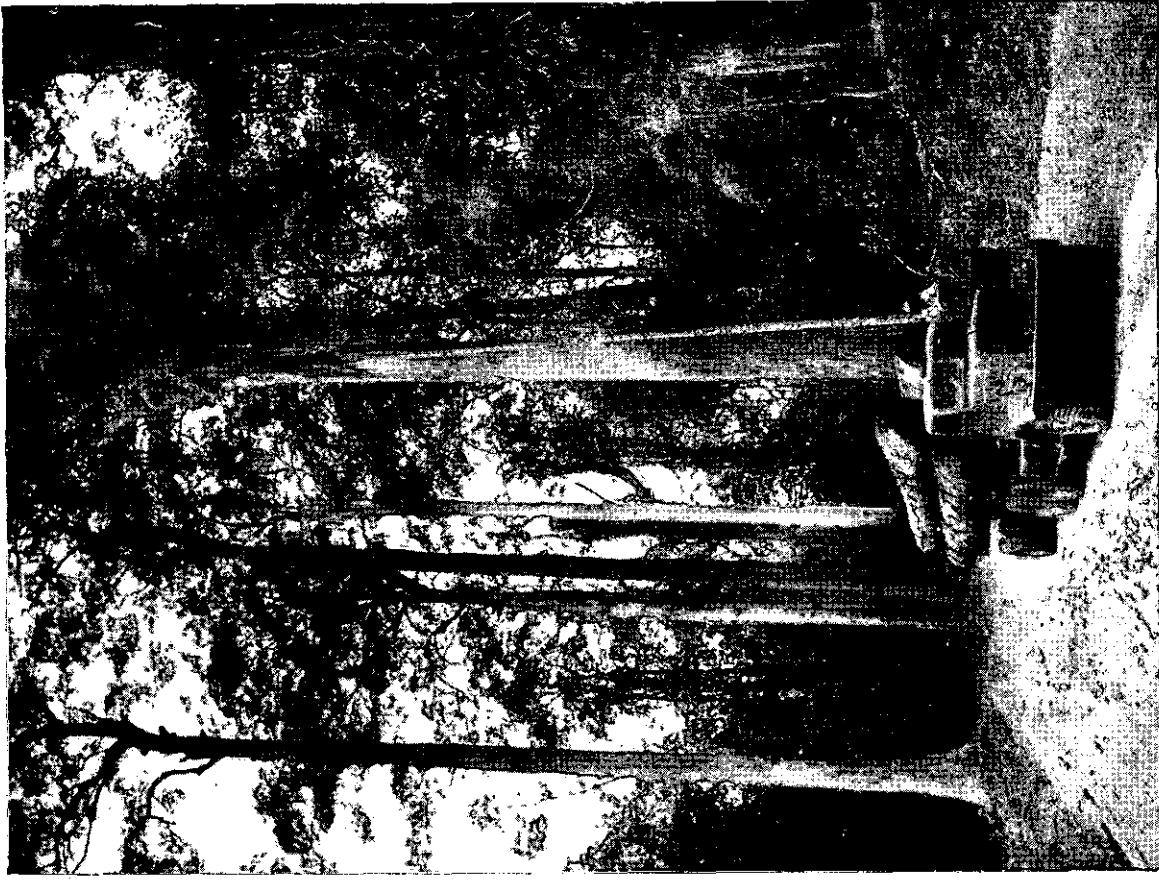
## The Timber Business

(a) Mill Logs—	1957-58	1958-59
Hoop and Bunya Pine ..	43,124,000 super. feet	40,808,000 super. feet
Forest Hardwoods ..	68,456,000 super. feet	83,284,000 super. feet
Scrub Hardwoods ..	9,142,000 super. feet	10,162,000 super. feet
Cypress Pine ..	24,433,000 super. feet	24,907,000 super. feet
Kauri Pine ..	2,730,000 super. feet	1,951,000 super. feet
Cabinet Woods ..	20,897,000 super. feet	19,042,000 super. feet
Miscellaneous Species ..	25,234,000 super. feet	27,131,000 super. feet
Plantation Timbers ..	18,917,000 super. feet	20,298,000 super. feet
Limb Logs, Head Logs, Stumps and Flitches ..	67,000 super. feet	97,000 super. feet
<b>Total Crown Mill Logs ..</b>	<b>213,000,000 super. feet</b>	<b>227,678,000 super. feet</b>

(b) Construction Timbers—		
Headstocks, Transoms, Crossings, Braces, &c. ..	617,020 super. feet	191,203 super. feet
Sleepers ..	930,938 pieces (amended)	890,947 pieces
Girders, Corbels, Piles, Sills, and Girder Logs ..	208,764 lineal feet	81,756 lineal feet
	356,038 super. feet	68,004 super. feet
Poles ..	312,243 lineal feet	320,950 lineal feet
House Blocks ..	104,188 lineal feet	99,040 lineal feet
Mining Timbers ..	431,826 lineal feet	426,059 lineal feet
Mining Timbers ..	30,031 pieces	32,104 pieces
Gross Receipts from Timber Sales, &c. ..	£2,475,152	£2,194,871
Net Revenue ..	£1,397,220	£1,342,738



**FOREST OF BLACKBUTT (*E. pitularis*) BEING MARKED FOR LOGGING IN ACCORDANCE WITH STANDARD RULES (painting done for photographic purposes).**  
Hardwood cut from Crown Forests during the year was 83,300,000 superficial feet.



**EXTRACTION OF TIMBER IN STATE FOREST OVER ACCESS ROAD CONSTRUCTED BY THE DEPARTMENT.**  
During 1958-59 89 miles of access road were constructed and over 2,000 miles maintained.

**Logging.**—During 1958-59 the following quantities were hauled by, and payments made to, contractors to the Department:—

Class	Quantity	Expenditure	
		£	s. d.
<b>South Queensland—</b>			
Hoop and Bunya Pine .. .. .	20,211,212		
Forest Hardwoods .. .. .	27,915		
Scrub Hardwoods .. .. .	126,886		
Miscellaneous .. .. .	124,258		
Cedar .. .. .	57,136		
	20,547,407	190,011	2 8
<b>North Queensland—</b>			
Kauri Pine .. .. .	2,363		
Cabinet Woods .. .. .	1,300,830		
Forest Hardwoods .. .. .	802		
Scrub Hardwoods .. .. .	182,440		
Miscellaneous .. .. .	1,016,034		
Cedar .. .. .	14,162		
	2,516,631	27,591	10 2
<b>Totals .. .. .</b>	<b>23,064,038</b>	<b>217,602</b>	<b>12 10</b>

**Rosewood.**—Old stocks were cleared by a shipment in August, 1958. Further licenses were issued but only a small quantity was received in time for consignment to Hong Kong in June.

Approximately 24 tons were exported for the year.

Stock on hand at 30-6-59—Nil.

**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:—

	£	s.	d.	£	s.	d.	
On 28th July, 1958 .. .. .	13	10	6	to	13	16	6
On 27th October, 1958 .. .. .	13	16	6	to	13	18	6
On 2nd February, 1959 .. .. .	13	18	6	to	14	2	6
On 27th April, 1959 .. .. .	14	2	6	to	14	5	6

**Constructional Timbers—Departmental Contracts.**—A comparison of supply of constructional timbers from Crown lands, 1958-59, with the two previous years is given hereunder:—

Class of Timber	1956-57	1957-58	1958-59
Sleepers .. .. .	680,132 pieces	484,716 pieces	486,752 pieces
Crossings .. .. .	225,325 super. feet	193,444 super. feet	89,203 super. feet
Transoms .. .. .	129,493 super. feet	159,492 super. feet	4,471 super. feet
Bridge timber (round) .. .. .	38,979 lineal feet	17,944 lineal feet	4,971 lineal feet
Bridge timber (square) .. .. .	39,522 super. feet	71,686 super. feet	9,246 super. feet

**Logging Roads—1958-59.**—The Department's road programme for the year constituted 89 miles of construction. Location and working surveys covering 152 miles were carried out.

Expenditure from Forestry votes was as follows:—

	£
New Construction .. .. .	125,947
Maintenance .. .. .	66,869
Subsidies to Shire Councils .. .. .	22,721
Workers' Compensation .. .. .	602
Pay-roll Tax .. .. .	2,254
Surveys .. .. .	3,197
Fares and Freights .. .. .	1,307
	<u>£222,897</u>

## SAWMILLS LICENSING

During the year between 670 and 680 sawmills were in active operation. The number of licenses current decreased over the period. This reduction is mainly attributable to mills closing down following the inevitable cutting out of timber stands and the increased competition for supplies still available.

A number of licenses for sleeper milling purposes, granted for a limited period as a measure of drought relief, also lapsed during the year.

An improvement in the submission of returns has been apparent but the number late in lodgment is sufficient to occasion delay in the compilation of relevant statistics.

The following table sets out the position with regard to sawmills licenses as at 30th June, 1959:—

Number of Licenses as at 30-6-58	Sawmill Classification	New Licenses Issued	Formerly Restricted Now General		Licenses not Renewed			Current Licenses as at 30-6-59	Total 30-6-59
					Refused	Relinquished	Under Consideration		
			Plus	Minus					
778	General Mills ..	2	2	..	20	18	7	737	744
17	Case Mills ..	..	..	..	1	2	..	14	14
74	Sleeper Mills ..	9	..	2	7	24	..	50	50
21	Other Restricted ..	4	..	..	2	1	..	22	22
69	Resaw and dressing	5	..	..	..	1	1	72	73
959		20	2	2	30	46	8	895	903

## OFFENCES

During the year ended 30th June, 1959, officers reported on 195 cases of breaches of Acts and Regulations administered by the Department.

Proceedings were successfully instituted against 29 persons. Of these, 12 were proceeded against for unauthorised removal of flora from National Parks, 9 for unauthorised cutting or removal of timber, 3 for breaches of the Sawmills Licensing Act, 2 for breaches of the Rural Fires Acts, 1 for breach of the Timber Users' Protection Acts, 1 for unauthorised removal of sand and 1 for unlawful possession of firearms on a National Park.

In addition, the Police instituted proceedings against 8 persons (3 for damage to Departmental property and 5 for either unlawful possession of firearms on a State Forest or breaches of the Fauna Conservation Act); the Department of Main Roads against 2 persons (one for unauthorised ringbarking and one for unauthorised cutting of timber on a Main Road) and the Department of Agriculture and Stock against 1 person for breach of the Native Plants' Protection Act.

In 73 cases of unauthorised timber operations where it was considered offences did not warrant proceedings, the value of the timber was collected and warnings issued. In 24 other cases not involving payment of timber royalty, warnings were issued.

In 14 cases of unauthorised ringbarking, appropriate action was taken.

During the year 6 cases of breaches of the Sawmills Licensing Act were investigated. Prosecution action was taken against 3 offenders and fines totalling £36 imposed. Warnings were issued in other cases.

As a result of action taken in all cases, an amount of £3,676 was recovered by the Crown in timber revenue.

The number of complaints from householders under the Timber Users' Protection Act in respect of the use of lyctus susceptible timber again showed a decrease on the previous year's figures, 35 cases being investigated by officers of the Department as against 43 cases in the previous year and 58 for the year 1956-57.

The Department continued its policy of endeavouring to get the builder to remedy the position and in 12 of the complaints investigated the defects have been attended to without the necessity of prosecution.

In one case it was necessary to take proceedings and a fine of £10 was imposed.

In 7 cases it was found that complaints were either of a minor nature, out of time for action to be taken, or not within the scope of the Act. The remaining cases are receiving attention.

## FORESTS PRODUCTS RESEARCH

The forest resource of this State has produced, and can continue to produce, great wealth. If this potential is to be realised to the full, there must be a vigorous and fundamental approach to the many problems associated with the conversion of the resource into not merely usable products, but products of the highest quality considering the purposes for which they will be used.

The results of Forest Products Research are of vital concern to the grower (whether Government or private enterprise), to the conversion industry, and to the community.

Concern has been expressed on numerous occasions about the inroads made by other materials into the traditional markets of wood. This would not, and should not, happen if the results of research available to industry now were applied by it in securing efficient control of its operations and quality of its product.

Not only can timber maintain its position but, by use of research, it can oust competitive materials for many forms of construction. This is very evident in overseas developments where the application of research knowledge and engineering principles to building construction has increased market opportunities and effected marked economies over alternative materials.

A primary task facing research is a vigorous programme of extension of its knowledge into practical productive use.

Facilities for this research have become a critical factor. Laboratory accommodation, in particular, is an urgent necessity.

Construction of the new Experimental Yard and Workshops at the Salisbury depot has been commenced and earthworks are in an advanced stage.

### I. Engineering and Economics

Resulting from appointment of Engineering Staff during the year, significant increase in extension and design work in sawmilling engineering was possible. Seventy-eight sawmills were contacted, 27 in North Queensland, and advice given on sawing and design problems. Resulting from this extension service, drawings and design of mill layouts, conveyors and automatic devices were prepared for individual mills. Design of an air-operated automatic waste docking saw and ancillary conveyor system was undertaken and working drawings prepared. This is available for general distribution to industry.

Enquiries for waste disposal systems were frequent and 7 designs for McCashney incinerators and ancillary pneumatic systems were prepared.

Attention was given to design of timber members in engineering structures. Portal frames for 20-foot span were designed for use in the projected laboratory at the Forest Research Station, Beerwah. Construction of these frames with sawn material from Slash Pine plantations was commenced.

The building has been designed to serve as a field trial of several preservation treatments of external cladding and joinery made from this material.

Studies in sawmill economics were continued:—

- (a) To provide information on values of the standing tree and hence appraisal of silvicultural practice. This information is basic to the Department's procedures, particularly in plantation management;
- (b) To determine the bases for Crown log prices in the various market zones of the State.

The following mill studies were carried out:—

Hoop Pine.—Recovery and production rates were obtained for this species in the Mackay district for determination of log prices.

Southern Queensland Hardwoods.—Two studies for check of log price basis for these species.

*P. radiata*.—Experimental study of recovery by grades for pruned and unpruned stems.

*P. elliotii*.—Experimental study covering investigation of the effect of sweep on recovery.

Using graphical models the effect of sweep on green-off-saw recovery was determined. Sweep up to 4 inches in 10 feet in the study logs had no significant effect on green-off-saw recovery. The effect on recovery by grade is yet to be determined.

North Queensland Species.—Pilot studies of recovery from two species, Peach Cedar (*Trema orientalis*) and Red Touriga (*Calophyllum costatum*), indicated that substantial losses in recovery occurred during seasoning to the point of unprofitability. Both were deleted from the list of compulsory species pending further investigation.

Brush Box (*Tristania conferta*).—Study of losses between green-off-saw stage and seasoned dressed products was undertaken. The loss in seasoning and dressing approximates 10 per cent. of green-off-saw volume. Insufficient attention to backsawing patterns in the original sawing and careless docking of green boards can materially increase this loss despite efficient seasoning practice.

## II. Seasoning

Provision of a moisture content testing service to consumers generally was continued during the year.

Seven hundred and sixty individual samples were submitted for compliance of parcels with specified moisture content and the requirements of "The Timber Users' Protection Acts, 1949 to 1955." The results of the tests are set out in the following table (1957-58 figures are shown in parentheses):—

Moisture Content Range	Percentage of Total Number of Samples	
	Flooring	Weatherboard
Below 10 per cent. .. .. .	4.0 (5.0)	Nil (1.5)
10-15 per cent. .. .. .	59.0 (60.0)	60.0 (65.1)
Above 15 per cent. .. .. .	37.0 (35.0)	40.0 (33.4)

These results indicate that there has been no real improvement in the standard of seasoning by the timber industry. Plans and specifications were prepared for five new kiln drying and seasoning yard layouts given to another five mills.

It is evident that intensified extension work in seasoning practice is required.

Observations on air drying rates and shrinkage of lesser known North Queensland timbers were continued at Atherton, using a model stack technique.

There has been little difference in rate of drying between stacks in the open and under cover.

Drying rate from green-off-saw to approximately 20 per cent. moisture content of 6 to 10 weeks are common to all species so far tested, except for dense hardwoods such as Rose Gum (*E. grandis*) and Brown Penda (*Xanthostemon chrysanthus*), where moisture content was still well above 20 per cent. after 16 weeks.

Observations of equilibrium moisture content, as part of an Australia wide survey, were continued at Salisbury depot.

## III. Timber Physics

Studies on the relation of growth conditions to physical properties of plantation grown conifers have continued.

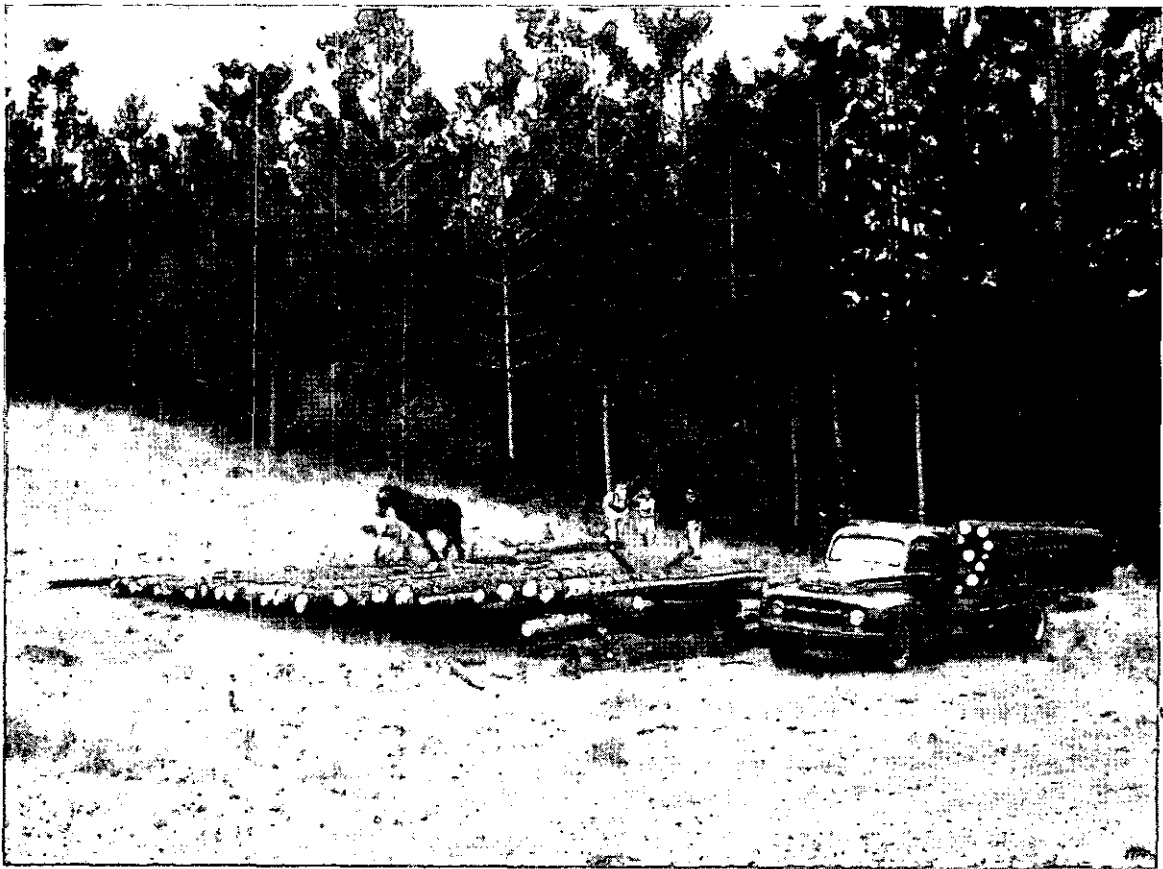
**Hoop Pine** (*Araucaria cunninghamii*).—Investigation of physical properties indicates that there is a significant difference between trees with respect to most of the physical properties studied, and it has been found that taper sawing produces less distortion in sawn material than sawing parallel to the pith.

The effect of internode length on spiral grain has been investigated in 44 trees from a 22-year-old plantation. Each stem was sampled at the centre of a node approximately 10 feet from the tip. Spiral grain was measured to the nearest 0.5 degree. Extensive analysis of the results showed that the properties are independent.



**SALVAGING RAILWAY SLEEPERS FROM REJECT MILL LOGS.**

The equivalent of 39,800,000 superficial feet of logs were cut from Crown Forests in 1958-59 for production of round and squared timbers.



**EXTRACTION OF THINNINGS FROM HOOP PINE PLANTATION.**

During the year 20,300,000 superficial feet of plantation thinnings were utilised.



**Slash Pine** (*Pinus elliotii* var. *elliotii*) and **Loblolly Pine** (*Pinus taeda*).—Tangential and radial shrinkages of small samples (basal discs) were measured on five stems of each species. Preliminary results indicate that both shrinkages increase (approximately linearly) from pith to about 4 inches from pith, average range being:—

Shrinkage	At Pith	4 inches from Pith
	Per cent.	Per cent.
Tangential .. .. .	5	8.25
Radial .. .. .	2	6.5

Mathematical models were used to investigate the cause of cupping of back sawn boards from these trees. The indications are that cupping is probably a function of  $t-r$ , and  $R$  where

$t$  = tangential shrinkage

$r$  = radial shrinkage

$R$  = radius of mean growth ring in board.

**Honduras Pine** (*P. caribaea*).—The possibility of a geographic effect on basic density was further examined by testing of trees from North Queensland in addition to those already tested from Beerwah and Bowenia. No significant difference in basic density was noted. Further sampling from all localities is needed.

**North Queensland Kauri Pine** (*Agathis palmerstoni*).—Measurements of basic density and shrinkage of 10 stems at 10 feet intervals up the stem have not indicated any significant variation in basic density from pith to bark. However, the difference in mean basic density between trees and between various heights within trees is significant. Further analysis is proceeding.

#### IV. Wood Anatomy and Utilisation

(1) **Utilisation.**—The demand for information on identification, use, preservation, &c., continued. Over 800 major enquiries were dealt with, whilst over 2,300 identifications were made.

In addition, lectures covering identification, utilisation and preservation were prepared and delivered to Trainee Engineers, P.M.G. Department, and Senior Supervisors and Pole Inspectors of the Southern Electric Authority and Brisbane City Council.

Assistance was given to the Standards Association of Australia in revision of Standard Specifications for—

- (a) Eastern Australian Hardwoods—
  - (1) Milled Flooring, Lining, Weatherboards and Mouldings;
  - (2) Rough Sawn;
- (b) Eastern Australian Brushwoods;
- (c) Railway Sleepers and Crossing timbers.

Pamphlet No. 3 "Queensland Timbers for Joinery" was issued and revision of Pamphlets Nos. 1 and 2 "Queensland Building Timbers and their Uses" completed.

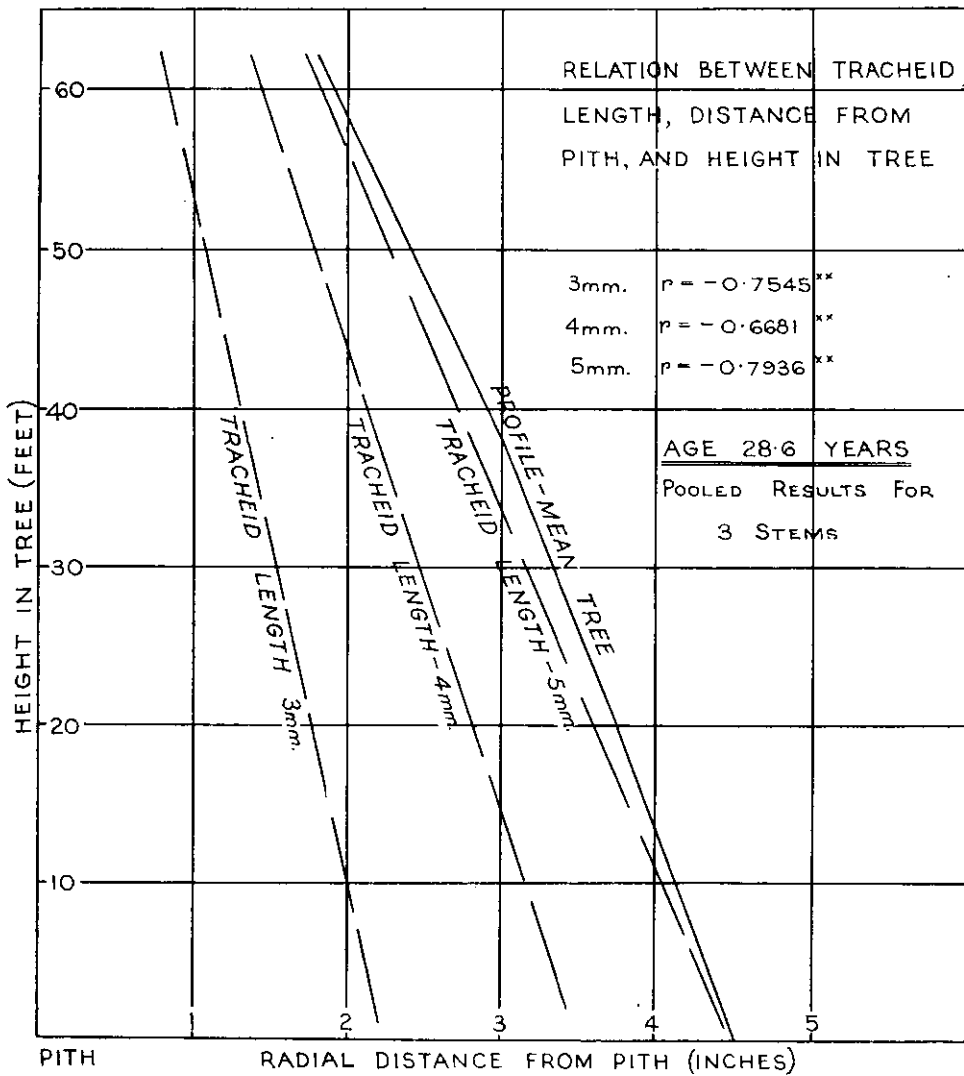
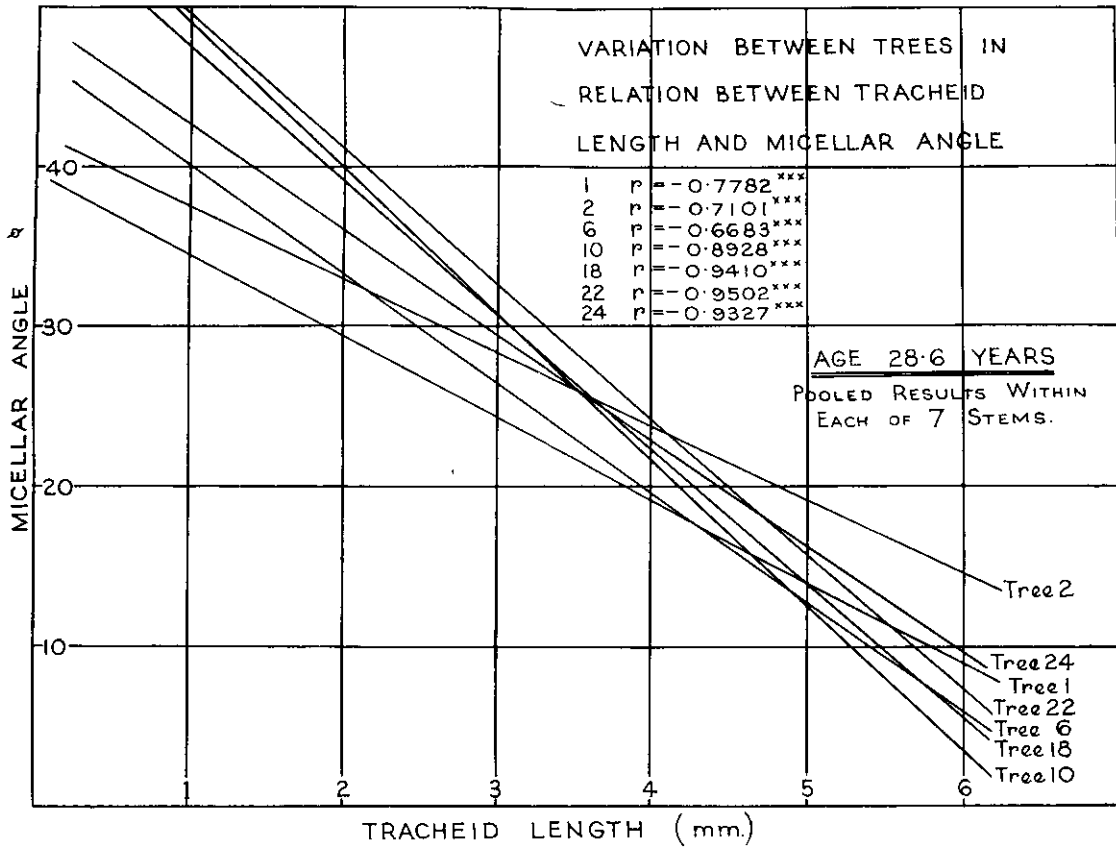
Resulting from an architectural trend to low brick base foundations and the use of concrete raft type ground level floors in domestic construction, there has been an increase in the incidence of fungal and termite attack of foundation timbers.

This has resulted from inadequate cross ventilation under suspended wooden floors, and lack of precautionary soil poisoning treatments under concrete raft floors.

These forms of construction demand far more care in the provision of preventive measures than the traditional and well tried pier foundation.

Climatic conditions in Queensland are particularly favourable to attack by insects and fungi. Prevention is far less costly than subsequent repair of damage.

Close liaison was maintained with Division of Forest Products, C.S.I.R.O., Government Botanist, other Government Departments and Trade Associations.



Graphs illustrating some of the results of an investigation into the variations and relationships of certain anatomical features in plantation-grown Hoop Pine (*Araucaria cunninghamii* Ait.).

## (2) Wood Anatomy

(a) **Hoop Pine** (*Araucaria cunninghamii*) **Structure in relation to growth.**—The investigation into the relationships of tracheid length and micellar angle in 28-year old plantation grown Hoop Pine has been completed and results are being prepared for publication. Briefly, the results may be summarised as follows:—

(1) Compression wood formation results in either a reduction in average tracheid length or a reduction in the rate of increase in average length along a radius; there is either an increase in micellar angle or a reduction in the rate of decrease in angle along a radius.

(2) A markedly greater effect of compression wood in increasing micellar angle than in reducing tracheid length suggests that other factors operate to influence the relationship between length and angle.

(3) There are significant differences between trees in:—

(a) Initial tracheid length (at pith) and tracheid length at age 28 years and the rate of increase in tracheid length from pith outwards.

(b) Micellar angle and the rate of decrease in micellar angle from pith outwards.

No significant difference was found between trees in initial micellar angle.

(4) No significant correlation could be found between initial and age 28 years values for tracheid length and micellar angle.

(5) There are strong indications that for normal wood in a particular stem, age, and not distance from pith, is the factor responsible for increase to maximum tracheid length at a particular level.

(6) There is an observed general tendency for tracheid length to increase with height in the tree at a given distance from the pith.

(7) Longitudinal shrinkage and micellar angle are correlated but the degree of correlation is low. Distance from pith seems to improve the degree of correlation but spiral grain and/or height in tree does not.

(8) There is no relationship between tracheid length and basic density.

(9) Top logs may be equivalent in value or superior to butt logs for pulp and paper products, at least insofar as desirable qualities of higher than average tracheid length and lower than average micellar angle are concerned.

These results show that in tree breeding work the final selection of parent trees should be determined by an assessment of desirable wood characteristics such as:—

- (i.) High average tracheid length;
- (ii.) Uniform (preferably low) micellar angle;
- (iii.) Low incidence of spiral grain;
- (iv.) Basic density reasonably uniform, within a range determined by the intended end use.
- (v.) Uniform (preferably low) longitudinal shrinkage.

(b) **Slash Pine** (*P. elliotii* var. *elliotii*).—The study of the effect of rate of growth, in height and diameter, on tracheid length, micellar angle, cell lumen diameter and cell wall thickness in Slash Pine (*Pinus elliotii* var. *elliotii*) has continued, using one year old selfed stock. Similar stock has been planted in the field for observations at later stages.

(c) **Honduras Pine** (*P. caribaea*).—Wood samples have been obtained from select stems at Banyabba, New South Wales, from which scions were taken for grafting experiments at Beerwah. These will be analysed for tracheid length, micellar angle, spiral grain, percentage latewood, basic density, longitudinal shrinkage.

The X-ray diffraction apparatus for micellar angle measurement and the projection microscope for cell dimension measurement and other anatomical studies were installed during the year and are valuable additions to wood structure research equipment.

## V. Chemistry Preservation and Plywood

Activities have been adversely affected by lack of sufficient laboratory accommodation. Space for new accommodation has been allotted but construction and equipment of the new laboratory has not yet been commenced. The provision of these facilities is a matter of urgency if the laboratory is to fulfil its proper function.

Despite the handicaps of the present situations the following analytical determinations were made:—

Preservation .. .. .	271
Plywood (S.A.A. specification tests) .. .. .	400
Soil and Plant analysis .. .. .	1,110
Moisture Content .. .. .	3,800

During the year the Division of Forest Products, C.S.I.R.O., generously provided special training for an officer of the Branch in Preservation, Seasoning, Veneer and Plywood.

**1. Preservation.**—The number of plants for preservation against lyctus approved under the provisions of "*The Timber Users' Protection Acts, 1949 to 1955*," is now 91. Following check of operations, modifications have been made in control requirements for plant treating veneer with approved preservatives.

The fumigation programme for control of the European House Borer in houses and other buildings built from imported softwoods was satisfactorily completed within the contract period. Check inspections have revealed a completely satisfactory kill. Further inspections have been undertaken to locate susceptible material which has drifted, usually in small quantities, outside the projects which have been fumigated.

Control measures suitable for application to these small parcels are under consideration.

Chemical analysis of samples from power station cooling towers treated by a proprietary preservative was undertaken in co-operation with Division of Forest Products, C.S.I.R.O.

Routine inspections of test stakes treated with various oilborne preservatives and established in field exposure sites in 1954 were continued.

Observations were maintained on track service trials of rail sleepers treated with creosote and oil mixtures by open tank methods. These trials were laid down in 1950 and, of 644 sleepers installed, total failures to date are 127. These are mainly untreated control sleepers of various species of low natural durability. The creosote treated material has given satisfactory results to date even though absorptions were low.

**2. Plywood and Veneer.**—A survey of commercial production of plywood from South Queensland mills was undertaken to examine conformity with S.A.A. Standard Specifications for plywood. The results were made available to the Queensland Plywood Board and individual mills concerned. Broadly, they indicated an urgent need for quality control of production. Commercial production of waterproof grades of plywood treated with a general purpose waterborne preservative has been commenced.

Experimental work has been severely limited by lack of adequate laboratory accommodation.

**3. "The Timber Users' Protection Acts, 1949 to 1955."**—35 complaints of breaches of this Act were investigated. A further 360 inspections of buildings under construction, timber yards and joinery factories were made as a preventative measure.

Improvements in the elimination of the use of lyctus susceptible material were noted, but while complaints continue to be received there is need for continuance of the provisions of the Act.

## VI. Biometrics

Statistical analysis of experimental results for all branches of the Department was continued. Forest Inventory survey data was handled by Powers-Samas punch card equipment, which permits rapid tabulation of stand data.

Other statistical tasks were also handled by this method and a total of 59,618 cards was punched.

Investigation of the application of digital computer techniques to computation of volume tables and other experimental data was undertaken and arrangements made for computation of trial problems by an I.B.M. 650 computer.

### **VII. Experimental Yard**

This yard functioned at its present location during the year. Plans and specifications for its removal to a new site at the Department's Salisbury Depot were completed and foundation excavation for the necessary buildings was commenced.

Stocks of North Queensland species for use in experimental projects were replenished during the year. A total of 872 super. feet was sold from sawn timber stocks resulting from experimental sawing projects.

38,000 super. feet was kiln dried and 14,000 super. feet resawn and dressed for the Department of Public Works. The charges for this work are a substantial offset to operating costs of the Yard.

### **STAFF**

At 30th June, 1959, there were 344 salaried officers on the staff, 16 more than at the same time in 1958. The number of wages men decreased from 1,774 to 1,615.

Thirty-one officers left the Department during the year, including seven officers who retired after long and meritorious service, namely:

Messrs.

- F. C. Epps (who, in his 45 years' service, rose to the rank of Senior Inspector),
- W. F. H. Franke (Senior Forest Ranger, 40 years' service),
- E. W. N. Lister (Senior Forest Ranger, 38 years' service),
- C. R. Buchanan (Forest Ranger, Division I., 38 years' service),
- A. E. Eyres (Forest Ranger, Division II., 31 years' service),
- L. A. Boyce (Forest Ranger, Division II., 24 years' service).
- C. W. Wilson (24 years' service, mainly in Head Office).

We wish these officers many years of health and happiness.

### **ACKNOWLEDGMENT**

Continued work at high pressure during the year found a ready and loyal response on the part of the staff, for which I express my appreciation.

V. GRENNING,  
Director of Forests.

## Appendices

## APPENDIX A

## Return of Timber, Etc., Removed from Crown Lands during the Year ended 30th June, 1959.

Species	Quantity	
	Super. feet	Super. feet
<b>Milling Timber—</b>		
<b>Hoop and Bunya Pine—</b>		
Ply .. .. .	3,647,390	
Logs .. .. .	20,202,467	
Tops .. .. .	16,958,473	
		40,808,330
Kauri Pine .. .. .	1,951,004	
Cypress Pine .. .. .	24,907,304	
Forest Hardwoods .. .. .	83,283,651	
Scrub Hardwoods .. .. .	10,162,220	
Cabinet Woods .. .. .	19,042,341	
Miscellaneous Species .. .. .	27,130,278	
Limb Logs, Head Logs, Stumps and Flitches .. .. .	96,677	
		166,573,475
<b>Plantation Thinnings—</b>		
Hoop Pine .. .. .	15,113,016	
Bunya Pine .. .. .	141,246	
Kauri Pine .. .. .	257,434	
Slash Pine .. .. .	2,601,563	
Loblolly Pine .. .. .	1,201,386	
Silky Oak .. .. .	89,984	
<i>Pinus radiata</i> .. .. .	20,834	
<i>Pinus patula</i> .. .. .	734,720	
Other Species .. .. .	136,204	
		20,296,387
		227,678,192

Other Classes—	Expressed as	
	Superficial feet (Hoppus) Log Measure	
Sleepers Hewn .. .. .	1,759 pieces	66,842
Sleepers Sawn—5 ft. .. .. .	211,582 pieces	5,924,296
Sleepers Sawn—7 ft. .. .. .	293,949 pieces	11,170,062
Sleeper Blocks (as sleepers contained) .. .. .	383,657 pieces	13,811,652
Sleeper Edgings .. .. .	100 pieces	1,000
Transoms, Crossings, Headstocks, Longitudinals .. .. .	191,203 superficial feet	305,924
Girders, Corbels, Piles, Sills, Kerb Logs .. .. .	81,756 lineal feet	1,471,608
Girder Logs .. .. .	68,004 superficial feet	68,004
Poles .. .. .	320,950 lineal feet	2,246,650
House Blocks, Round Posts .. .. .	99,040 lineal feet	594,240
Fencing Material—Split .. .. .	287,853 pieces	2,590,677
Fencing Material—Round .. .. .	212,337 lineal feet	530,842
Mining Timber—Split .. .. .	32,104 pieces	128,416
Mining Timber—Round .. .. .	426,059 lineal feet	852,118
Stakes .. .. .	2,308 pieces	18,464
Miscellaneous Sawn Timber (offcuts) .. .. .	508 superficial feet	812
Fender Chocks .. .. .	648 superficial feet	810
		39,782,417
Fuel .. .. .	53,116 tons	
Charcoal .. .. .	3,544 bags	
Trees and Plants (Number) .. .. .	233,856	
Sand, Gravel, Soil, &c. .. .. .	207,081 cubic yards	
Rosewood .. .. .	24 tons	
Lawyer Cane .. .. .	51 tons	
Staghorns and Ferns .. .. .	166 pieces	
Peat .. .. .	83 bags	
Mulga Wood .. .. .	10 tons	

## APPENDIX B

## Annual Cut—Pine—Financial Year ended 30th June, 1959.

Forestry District	Ply	Logs	Tops	Total
	Super. feet	Super. feet	Super. feet	Super. feet
Atherton .. .. .	..	81,980	85,881	167,861
Brisbane .. .. .	31,492	402,150	300,719	734,361
Gympie .. .. .	44,987	1,293,031	948,258	2,286,276
Mackay .. .. .	..	349,407	326,925	676,332
Maryborough .. .. .	535,306	3,043,675	2,609,525	6,188,506
Monto .. .. .	562,054	1,765,446	1,609,591	3,937,091
Murgon .. .. .	508,729	4,886,763	3,726,533	9,122,025
Warwick .. .. .	..	530,845	472,955	1,003,800
Yarraman .. .. .	1,964,822	7,849,170	6,878,086	16,692,078
<b>Total .. .. .</b>	<b>3,647,390</b>	<b>20,202,467</b>	<b>16,958,473</b>	<b>40,808,330</b>

## APPENDIX C

## Total Receipts, Department of Forestry, for the year ended 30th June, 1959.

DISTRICTS	TOTALS	
	£	s. d.
Group 1—South Queensland (Beerwah, Brisbane, Bundaberg, Gayndah, Gympie, Imbil, Maryborough, Monto, Murgon, Pechey, Yarraman) .. .. .	1,248,990	1 9
Group 2—North Queensland (Atherton, Herberton, Cooktown, Port Douglas, Cairns, Innisfail, Ingham, Charters Towers, Ravenswood, Hughenden, Townsville) ..	502,281	17 9
Group 3—Dalby, Roma, Tarcom, Charleville, Quilpie, Mitchell .. .. .	106,115	11 9
Group 4—Warwick, Goondiwindi, Inglewood, St. George, Stanthorpe, Cunnamulla .. ..	87,464	11 6
Group 5—Mackay, Rockhampton, Clermont, Bowen, Proserpine, Emerald, Springsure, Theodore .. .. .	34,861	5 6
Group 6—Barcaldine, Blackall, Jundah, Longreach, Murrumbidgee, Stonchenge, Winton, Aramac, Isisford, Jericho .. .. .	1,390	19 5
Group 7—Cloncurry, Boulia, Kynuna, Mackinlay, Richmond .. .. .	466	16 10
Group 8—Burketown, Coen, Croydon, Georgetown, Normanton, Thursday Island .. ..	1	15 0
	£1,981,572	19 6
Receipts—Forestry and Lumbering .. .. .	188,742	1 0
Sale of Plants, Material, etc. .. .. .	17,981	0 4
Licenses† (See note after Appendix D) .. .. .	2,866	0 4
Rents and Grazing Dues .. .. .	8,515	15 10
	£2,199,677	17 0
Less Treasury Refunds .. .. .	4,807	0 11
	£2,194,870	16 1
* Plant Hire—		
Charged Loan Fund Projects .. .. .	£ 155,317	s. d. 6 2
Trust Fund Projects .. .. .	70,781	7 9
Revenue Fund Projects .. .. .	539	9 3
Remitted to Treasury .. .. .	226,638	3 2
	£2,421,508	19 3

\*This is the first year that plant hire charges to the various jobs have been credited in this way. In previous years these charges remained in the plant account, part of which was used for maintenance of plant and part for purchase of new plant.

Under direction from the Treasury, under date 18th September, 1958, the previous basis was discontinued. Special allotments were made from trust funds for maintenance of plant and from loan funds for purchase of plant. Plant hire charges are now credited to general receipts and from there transferred to the loan fund.

## APPENDIX D

## Proceeds of Sales of Timber, Etc., for the Period 1st July, 1955, to 30th June, 1959.

Groups*	1955-56**		1956-57**		1957-58		1958-59	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Group 1 .. .. .	..	..	..	..	1,330,952	16 4	1,248,990	1 9
Group 2 .. .. .	..	..	..	..	468,216	14 3	502,281	17 9
Group 3 .. .. .	..	..	..	..	118,414	15 6	106,115	11 9
Group 4 .. .. .	..	..	..	..	101,053	9 5	87,464	11 6
Group 5 .. .. .	..	..	..	..	35,773	18 2	34,861	5 6
Group 6 .. .. .	..	..	..	..	4,281	4 4	1,390	19 5
Group 7 .. .. .	..	..	..	..	532	6 7	466	16 10
Group 8 .. .. .	..	..	..	..	..	..	1	15 0
Receipts—Forestry and Lumbering .. .. .	1,603,476	13 9	2,083,883	0 6	2,059,225	4 7	1,981,572	19 6
Sale of Plants, Material, etc. .. .. .	20,225	16 9	15,057	18 3	22,899	12 8	17,981	0 4
Licenses† .. .. .	2,390	7 11	2,785	17 5	2,827	8 2	2,866	0 4
Rents and Grazing Dues .. .. .	7,275	2 10	7,849	14 10	8,951	16 10	8,515	15 10
	1,870,570	19 9	2,429,895	16 7	2,477,596	19 3	2,199,677	17 0
Less Treasury Refunds .. .. .	4,134	5 8	3,819	0 4	2,444	10 9	4,807	0 11
Total .. .. .	1,866,436	14 1	2,426,076	16 3	2,475,152	8 6	2,194,870	16 1

\* For districts within the groups see Appendix C.

\*\* Districts previously shown in sixteen groups.

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

## APPENDIX E

The following Schedule illustrates the market price of logs during the year 1st July, 1958, to 30th June, 1959.

Species—Standard Trade Names (Botanical names in Brackets)	Log Class	Delivery F.O.R.	Price per 100 super. ft. (Hoppus measure)	
			As at 1-7-58	As at 1-3-59
			<i>s. d.</i>	<i>s. d.</i>
Red Tulip Oak ( <i>Argyrodendron peralatum</i> )	8 ft. plus	Cairns	41 10	41 10
		Townsville	41 10	41 10
Red Cedar ( <i>Cedrela toona</i> )	8 ft. plus	Cairns	71 10	71 10
	6 ft. plus	Brisbane	77 7	77 7
North Queensland Kauri Pine ( <i>Agathis palmerstoni</i> )	8 ft. plus	Cairns	61 10	61 10
		Townsville	61 10	61 10
Queensland Walnut ( <i>Endiandra palmerstoni</i> )	8 ft. to 8 ft. 11 ins.	Cairns	52 9	52 9
		Townsville	52 9	52 9
Northern Silky Oak ( <i>Cardwellia sublimis</i> )	8 ft. plus	Cairns	61 10	61 10
		Townsville	61 10	61 10
Queensland Maple ( <i>Flindersia brayleyana</i> )	8 ft. to 8 ft. 11 in.	Cairns	66 10	66 10
		Townsville	66 10	66 10
Black Pine ( <i>Podocarpus amara</i> )	8 ft. plus	Cairns	51 10	51 10
		Townsville	51 10	51 10
Silver Silkwood ( <i>Flindersia acuminata</i> )	8 ft. plus	Cairns	61 10	61 10
		Townsville	61 10	61 10
White Beech ( <i>Gmelina leichhardtii</i> ) ( <i>Gmelina fasciculiflora</i> )	8 ft. plus	Cairns	61 10	61 10
	6 ft. plus	Townsville	61 10	61 10
		Brisbane	62 7	62 7
Hickory Ash ( <i>Flindersia affaiana</i> )	8 ft. plus	Cairns	51 10	51 10
Northern Silver Ash ( <i>Flindersia pubescens</i> )	8 ft. plus	Cairns	61 10	61 10
		Townsville	61 10	61 10
Queensland Silver Ash ( <i>Flindersia bourjotiana</i> )	8 ft. plus	Cairns	61 10	61 10
		Townsville	61 10	61 10
Bolly Silkwood ( <i>Cryptocarya oblata</i> )	8 ft. plus	Cairns	41 10	41 10
		Townsville	41 10	41 10
Satin Sycamore ( <i>Ceratopetalum succirubrum</i> )	8 ft. plus	Cairns	41 10	41 10
		Townsville	41 10	41 10
Yellow Walnut ( <i>Beilschmiedia bancroftii</i> )	8 ft. plus	Cairns	41 10	41 10
		Townsville	41 10	41 10
Hardwoods	6 ft. plus	Brisbane	40 8	40 8
		Warwick	33 10	33 10
Hardwoods	6 ft. plus	Maryborough	34 6	34 6
		Bundaberg	34 6	34 6
Hardwoods	6 ft. plus	Rockhampton	42 0	42 0
Hardwoods	6 ft. to 6 ft. 11 in.	Townsville	39 4	39 4
Hardwoods	6 ft. plus	Mackay	39 11	39 11
Hoop Pine Ply	7 ft. plus	Brisbane	104 4	104 4
Hoop Pine "A" Quality Logs	7 ft. plus	Brisbane	88 8	88 8
Bunya Pine Logs	7 ft. plus	Brisbane	87 2	87 2
Hoop Pine "C" Quality Logs	7 ft. plus	Brisbane	55 2	55 2
Hoop Pine "D" Quality Logs	7 ft. plus	Brisbane	44 6	44 6
Bunya Pine Tops	7 ft. plus	Brisbane	44 6	44 6
Cypress Pine—1st Class	28 in. plus	Brisbane	42 5	42 5
		Gympie, Maryborough	39 5	39 5
		Goondiwindi	40 11	40 11
Mackay Scrubwoods—				
Group 1 (White Eungella Satinash)	6 ft. plus	Mackay	43 2	43 2
South Queensland Scrubwoods*—				
Case and Building Timbers Group (a)	6 ft. plus	Brisbane	37 10	37 10
Common Cabinetwoods Group (b)	6 ft. plus	Brisbane	39 9	39 9
Special Purpose Timbers Group (c)	6 ft. plus	Brisbane	41 8	41 8
Plantation Timbers—				
		G.B.H.O.B.		
Hoop Pine	38 in.	Imbil	27 8	29 9
Slash Pine	38 in.	Beerwah	28 0	
Slash Pine	40 in.	Beerwah		27 10

\* The following are the most common species included in the respective groups:—

## (a) Case and Building Timbers Group—

Southern Satinash (Red Apple) (*Eugenia brachyandra*)  
Rose Satinash (Watergum) (*Eugenia francisii*)  
Mararie (Marara) (*Pseudoweinmannia lachnocarpa*)  
Pink, Poplar (Blush Cudgerie) (Maiden's Blush)  
(*Euroschinus falcatus*)

Brown Tulip Oak (Crowsfoot Elm) (*Argyrodendron trifoliolatum*)  
Rose Walnut (Domatia Tree) (*Endiandra discolor*)  
Blush Walnut (Hard Bolly Gum) (*Beilschmiedia obtusifolia*)

## (b) Common Cabinetwoods Group—

Brown Alder (Roseleaf Marara) (*Ackama paniculata*)  
Brush Mahogany (Red Carrobean) (*Geissois benthamii*)  
Rose Mahogany (Rosewood) (*Dysoxylum fraserianum*)

Miva Mahogany (Red Bean) (*Dysoxylum muelleri*)  
Blush Alder (Blush Carrobean) (*Sloanea australis*)  
Bollywood (Bolly Gum) (Brown Beech) (*Litsea reticulata*)

## (c) Special Purpose Timbers Group—

Crow's Ash (*Flindersia australis*)  
Yellowwood (*Flindersia xanthoxyla*)

Southern Silver Ash (Bumpy Ash) (*Flindersia schottiana*)  
Yellow Boxwood (*Planchonella pohlmannaiana*)



## APPENDIX F

**Constructional Timber supplied during Financial Year 1958-59 under Forestry and Lumbering Operations.**

Class of Timber	Quantity	Sales Value		
		£	s.	d.
Sawn Crossings .. .. .	46,196 superficial feet	1,978	14	6
Hewn Crossings .. .. .	43,007 superficial feet	1,841	12	8
Headstocks, Longitudinals and Braces .. .. .	9,246 superficial feet	635	11	1
Hewn Transoms .. .. .	4,471 superficial feet	198	11	1
Fender Chocks .. .. .	648 superficial feet	51	0	7
Girders—Dressed .. .. .	3,357 lineal feet	2,940	6	5
Piles .. .. .	1,257 lineal feet	1,025	5	5
Sills .. .. .	357 lineal feet	98	14	7
House Blocks .. .. .	2,393 lineal feet	450	7	2
Split Posts and Rails .. .. .	42,524 pieces	7,053	18	7
Hewn Sleepers .. .. .	1,759 pieces	1,177	1	11
Sawn Sleepers .. .. .	101,336 pieces	68,500	11	4
Sleeper Blocks (as sleepers contained) .. .. .	383,657 pieces	141,360	9	2
<b>Total</b> .. .. .	<b>..</b>	<b>£227,312</b>	<b>4</b>	<b>6</b>

## APPENDIX G

**Comparative Statement of Expenditure for Years 1957-58 and 1958-59.**

	1957-58	1958-59
	£	£
<b>Revenue—</b>		
Salaries .. .. .	303,092	345,026
Travelling Expenses and Incidentals .. .. .	38,890	35,627
Fares, Printing, Stores, etc. .. .. .	5,012	4,973
Cash Equivalent Extended Leave .. .. .	1,856	2,460
Timber Industry Milling and Log Marketing Inquiry Committee .. .. .	..	1,779
National Parks .. .. .	45,813	41,147
<b>Loan—</b>		
Reforestation .. .. .	1,253,565	1,493,251
Acquisition of Land for Forestry Purposes .. .. .	4,246	3,515
Access Roads .. .. .	70,000	132,244
Purchase of Plant .. .. .	47,907	79,518
<b>Trust—</b>		
Hardwood Supplies to Railway Department and Others .. .. .	267,420	215,452
Harvesting and Marketing Timber .. .. .	502,946	507,856
Access Roads—Maintenance and Subsidies .. .. .	63,179	90,653
Maintenance of Capital Improvements .. .. .	39,400	38,172
Minor Protection .. .. .	151,575	(a)
Construction of Access Roads .. .. .	53,412	(a)
Maintenance of Plant .. .. .	(a)	185,790
<b>Total</b> .. .. .	<b>£ 2,848,313</b>	<b>3,177,463</b>

(a) Included under Loan.

APPENDIX H  
Summary of Reforestation Expenditure, 1958-59.

Reserves	Reforestation				Surveys	Protection, Firefighting, &c.	Maintenance of Capital Improvements	New Construction of Nurseries, Buildings, &c.	Overhead Expenses				Pay-roll Tax	Reserve Total
	Plantations	Natural Regeneration	Nursery Working and Maintenance	Forest Experiment					Stores, Fodder, Supervision, &c.	Holidays, Wet Time, &c.	Cartage of Rations, &c.	Camping Allowance		
Reserve 69	..	105 9 11	..	..	971 1 10	60 14 8	.. 16 0	259 15 7	208 6 8	27 9 1	84 17 6	..	1,627 17 4	
Reserve 215	..	616 18 10	..	..	520 13 5	71 16 5	18 19 0	357 0 3	195 17 5	88 7 8	..	..	1,847 19 10	
Reserve 309	..	60 10 3	..	..	2,982 6 5	182 11 8	..	1,214 4 7	1,078 10 5	..	..	..	5,824 14 2	
Reserve 359	..	..	..	..	..	..	..	..	..	..	..	..	1,005 0 1	
Reserve 494	..	..	..	..	647 7 9	34 4 8	..	306 10 5	110 15 5	90 3 9	..	..	1,300 13 7	
Reserve 571	..	206 2 2	..	..	1,705 7 3	234 3 0	..	774 18 8	580 10 0	12 16 0	111 12 0	..	3,708 6 7	
Reserve 593	..	..	..	..	1,439 8 1	..	..	244 16 2	92 9 6	3 3 10	..	..	1,080 5 6	
Reserve 667	..	300 17 4	..	..	1,339 0 2	..	..	169 15 5	47 17 2	..	..	..	627 9 0	
Reserve 702	..	..	..	..	1,332 14 11	320 4 1	2 5 0	689 15 2	294 13 7	6 0 4	239 4 0	..	2,571 16 5	
Reserve 727	..	51 6 3	..	..	232 14 11	..	..	93 12 7	93 2 5	..	2 16 0	..	496 14 5	
Reserve 759	..	..	..	..	38 10 4	..	..	2 12 10	..	..	..	..	96 10 2	
Reserve 1355	..	..	..	..	14 15 0	..	..	..	..	..	..	..	172 0 2	
Reserve 1378	..	..	..	..	1,416 5 7	..	9 17 8	93 12 0	196 17 5	1 11 11	..	..	1,570 0 17	
Reserve 1528	..	..	..	..	510 3 0	..	..	231 2 6	14 5	..	..	..	1,027 4 10	
Reserve 1635	..	501 19 2	..	..	324 15 2	..	..	607 4 10	46 13 1	6 0 1	14 8 0	..	1,037 4 10	
Administration	..	..	..	..	2,227 2 0	..	..	..	..	..	..	..	2,227 2 0	
Firefighting and Patrol	..	..	..	..	..	..	..	..	..	..	..	..	..	
Co-operating and Burning	..	..	..	..	21 12 9	..	..	..	..	..	..	..	21 12 9	
Experiments	..	..	..	..	..	..	..	..	..	..	..	..	..	
Drum Account	..	..	..	..	..	..	..	121 9 0	..	..	..	..	121 9 0	
	1,189 17 11	1,843 4 1	..	4 15 3	13,688 3 3	873 13 8	31 17 8	5,288 14 10	2,940 17 9	235 12 8	877 1 0	..	26,923 13 1	
Reserve 370	..	498 10 10	..	..	2,036 3 1	54 16 4	124 6 8	884 13 1	750 10 8	24 0 0	554 18 0	..	4,910 18 9	
Reserve 637	..	..	..	..	347 17 5	330 13 3	197 16 3	1,862 3 8	1,610 10 1	242 12 7	1,211 0 0	..	10,755 12 0	
Reserve 753	..	..	..	..	235 5 0	..	..	1,331 8 11	33 14 4	..	71 8 0	..	7,772 8 5	
Reserve 893	..	115 10 0	..	..	2,473 1 7	460 6 10	772 18 10	404 15 1	840 0 11	244 3 5	517 9 6	..	7,212 17 4	
Administration	..	..	..	..	797 4 10	..	..	57 4 0	..	..	..	..	57 4 0	
Firefighting and Patrol	..	..	..	..	80 3 9	..	..	..	..	..	..	..	727 4 10	
Co-operative Burning	..	..	..	..	..	..	..	..	..	..	..	..	90 3 9	
Experiments	..	..	..	..	..	..	..	..	..	..	..	..	76 16 7	
	6,065 6 4	614 0 10	..	76 16 7	5,909 16 5	845 16 5	1,093 1 9	3,803 4 9	3,249 5 0	510 16 0	2,357 15 6	..	24,603 5 8	

BRISBANE WORKING PLAN AREA

KILCOY WORKING PLAN AREA

APPENDIX H—continued

Reserves	Reforestation				Surveys	Protection, Firefighting, &c.	Maintenance of Capital Improvements	New Construction of Nurseries, Buildings, &c.	Overhead Expenses				Pay-roll Tax	Reserve Total			
	Plantations	Natural Regeneration	Nursery Working and Maintenance	Forest Experiment					Stores, Fodder, Supervision, &c.	Holidays, Wet Time, &c.	Cartage of Rations, &c.	Camping Allowance			£	s.	d.
Reserve 60	62 0 0				10 18 6	1,219 8 5	44 2 4		328 3 2					1,850 15 7			
Reserve 108						712 10 11	3 9 3		184 3 0					874 5 4			
Reserve 173	55 0 3				2,089 17 10	2,089 17 10	23 0 3	114 10 9	352 12 1	431 17 4	6 10 4	63 0 6		3,636 9 4			
Reserve 249/583					2 16 4	342 2 8	1 0 3		29 4 2	60 8 8		43 12 0		495 12 1			
Reserve 813					6 19 10	399 11 5	13 17 8		35 6 0	61 15 8	15 10	43 12 0		574 18 11			
Reserve 818	196 19 0					2,843 3 4	767 13 1	81 13 8	1,519 13 8	997 16 8	127 13 8	561 16 8		7,180 1 2			
Reserve 851/368/689						180 1 9	168 13 8		50 2 5	80 2 5		17 5 6		3,126 5 7			
Reserve 445					424 9 10	1,792 17 4	314 16 0	1,583 4 6	556 18 2	1,636 17 2		1,510 16 0		20,148 7 10			
Reserve 561	2,442 19 0		2,386 2 8		134 19 10	5,500 3 1	314 16 0	1,583 4 6	4,343 18 4	1,636 17 2		1,510 16 0		16,379 4 3			
Reserve 589	6,215 13 3				856 8 11	3,261 0 0	171 16 6	2,225 7 4	2,371 10 6	2,563 1 0		3,667 19 6		58,462 5 1			
Reserve 611	16,042 5 10		2,070 2 10		114 8 4	11,588 11 9	984 15 3	2,225 7 4	15,373 0 7	2,468 12 11		2,385 7 0		29,168 2 1			
Reserve 688	14,542 11 0				393 7 6	3,778 2 2	111 7 6	1,391 16 9	4,039 2 4	2,866 6 9		106 0 0		490 11 10			
Reserve 700					86 11 11	206 14 2	31 9 4		287 0 6	23 13 11				1,569 19 10			
Reserve 766														31 8 4			
Reserve 877														3,200 2 0			
Pay-roll Tax																	
Administration																	
Firefighting and Patrol																	
Experiments					39 10 9	6,012 2 3			1,274 3 0								
Miscellaneous Surveys																	
	40,180 10 4	313 19 3	4,456 5 6	15,585 12 9	2,070 11 9	39,946 7 1	2,636 0 3	5,593 12 2	31,461 17 8	15,179 4 7	135 13 4	9,519 13 2	3,200 2 0	170,279 18 10			

NORTH COAST WORKING PLAN AREA

DALBY WORKING PLAN AREA

Reserve 4						2,247 11 4	141 3 4		1,846 6 0	542 19 8	453 8 5	539 7 0		5,394 8 1
Reserve 21						5,386 8 0	310 17 6	2,062 12 3	39 3 11	2,478 15 9	853 6 2	2,267 17 6		22,966 16 11
Reserve 73	4,779 3 6					1,961 6 8	63 16 10	675 1 6	1,144 13 0	490 8 9	258 9 1	442 8 0		5,499 5 9
Reserve 88/106	457 1 11					897 8 6	174 15 10	777 1 5	1,285 5 0	489 17 9	266 9 7	358 18 6		3,999 6 0
Reserve 93	449 9 5					525 19 9		115 4 4	175 18 3	12 5 0	37 10 8	88 18 6		1,953 16 6
Reserve 124						810 8 6		218 17 2	219 19 10	158 14 2	26 17 11	222 12 0		1,666 9 7
Reserve 144						4,003 10 5	229 10 7	420 11 5	2,325 3 0	796 0 4	98 10 0	950 8 0		9,079 19 2
Reserve 150	255 7 5				19 9 11	5,475 8 8	331 3 10	104 7 11	4,624 6 4	2,571 13 9	704 17 3	2,292 7 0		19,420 11 10
Reserve 154	3,206 17 2					4,633 13 0	254 16 10	154 18 9	1,984 7 11	692 16 9	259 9 8	946 12 5		9,232 4 11
Reserve 155	325 9 7					8,788 19 7	36 12 0	17 5 8	111 19 8	188 9 6	13 8 0	1,941 4 0		18,333 13 5
Reserve 161						8,795 15 1	286 11 10	110 11 0	5,131 12 10	1,363 13 7	864 2 10	1,941 4 0		20,582 3 10
Reserve 302 (Walton)	40 4 0					6,433 1 9	553 10 9	679 1 9	5,261 7 4	2,186 8 3	979 17 7	2,167 13 0		2,762 7 1
Reserve 302 (Malcolm)	2,920 14 5					1,255 6 7		303 18 6	418 15 6	324 5 3	134 6 0	311 8 0		2,348 6 0
Pay-roll Tax					14 7 3									
Administration														
Firefighting and Patrol														
Co-operative Burning														
Experiments														
Miscellaneous Surveys					15 11 3									
Drum Account														
	12,047 19 9				49 8 5	46,214 13 5	2,889 17 4	4,939 11 8	30,674 11 4	12,196 9 0	4,931 2 2	12,615 8 11	2,348 6 0	129,571 9 8



APPENDIX H—continued

Reserves	Reforestation				Surveys	Protection, Firefighting, &c.	Maintenance of Capital Improvements	New Construction of Nurseries, Buildings, &c.	Overhead Expenses				Pay-roll Tax	Reserve Total
	Plantations	Natural Regeneration	Nursery Working and Maintenance	Forest Experiment					Stores, Fodder, Supervision, &c.	Holidays, Wet Time, &c.	Cartage of Rations, &c.	Camping Allowance		
Reserve 117	..	..	..	..	..	..	..	..	18 16 8	481 5 5	14 6	72 15 6	..	59 18 10
Reserve 127	..	..	..	..	40 7 8	..	..	147 10 8	..	..	25 10 10	..	..	1,129 10 9
Pay-roll Tax	..	335 8 11	..	..	66 19 5	..	..	19 18 4	..	..	..	10 6 7	..	1,199 6 7
Administration	..	..	..	..	..	..	..	..	..	..	..	..	..	19 18 4
Firefighting and Patrol	..	..	..	..	81 4 2	..	..	..	..	..	..	..	..	31 4 2
Co-operative Burning	..	..	..	..	11 0 2	..	..	..	..	..	..	..	..	11 0 2
Experiments	..	..	..	3 3 4	..	..	..	..	..	..	..	..	..	3 3 4
	..	335 8 11	..	3 3 4	149 11 5	..	..	186 5 8	481 5 5	20 5 4	72 15 6	19 6 7	..	1,274 2 2
CLERMONT WORKING PLAN AREA														
Reserve 20	12,785 16 7	..	2,048 3 7	..	395 7 10	7,469 2 1	246 3 1	3,461 17 6	5,048 8 3	3,260 11 10	889 11 11	2,973 1 0	741 17 7	38,078 3 8
Pay-roll Tax	..	..	..	..	..	..	..	..	65 9 2	..	..	..	..	741 17 7
Administration	..	..	..	..	..	..	..	..	..	..	..	..	..	65 9 2
Firefighting and Patrol	..	..	..	..	459 4 10	..	..	..	..	..	..	..	..	459 4 10
Co-operative Burning	..	..	..	..	66 6 4	..	..	..	..	..	..	..	..	66 6 4
Experiments	..	..	..	208 17 7	..	..	..	..	..	..	..	..	..	208 17 7
	12,785 16 7	..	2,048 3 7	208 17 7	395 7 10	7,994 13 3	246 3 1	3,461 17 6	5,113 17 5	3,260 11 10	889 11 11	2,973 1 0	741 17 7	39,819 19 2
ROCKHAMPTON WORKING PLAN AREA														
Reserve 28	..	2,929 6 2	974 14 3	..	7 0 5	1,800 10 6	348 10 7	41 7 8	2,160 1 1	857 16 11	322 17 10	839 7 6	..	8,206 18 8
Reserve 67	572 8 10	..	..	..	..	375 5 8	370 19 7	87 11 3	739 3 6	650 10 11	256 10 7	499 12 1	..	4,520 16 8
Reserve 81	..	..	..	..	..	..	24 6 2	..	..	..	..	..	..	24 6 2
Reserve 95	12,871 1 0	..	2,822 17 3	..	1,159 5 3	2,911 12 8	1,900 14 2	858 8 5	7,579 2 11	4,477 13 9	..	3,871 9 6	1,028 3 11	37,952 4 11
Pay-roll Tax	..	..	..	..	..	..	..	..	813 14 5	..	..	..	..	1,028 3 11
Administration	..	..	..	..	..	..	..	..	..	..	..	..	..	813 14 5
Firefighting and Patrol	..	..	..	..	1,621 5 2	..	..	..	..	..	..	..	..	1,621 5 2
Co-operative Burning	..	..	..	..	98 3 9	..	..	..	..	..	..	..	..	98 3 9
Experiments	..	..	..	140 8 5	..	..	..	..	..	..	..	..	..	140 8 5
Drum Account	..	..	..	..	..	..	..	..	Cr. 6 0 0	..	..	..	..	Cr. 6 0 0
	13,443 9 10	2,929 6 2	3,797 11 6	140 8 5	1,166 5 8	6,306 17 9	2,644 10 6	867 7 4	11,286 1 11	5,986 1 7	573 8 5	4,770 9 1	1,028 3 11	54,400 2 1
MANY PEAKS WORKING PLAN AREA														



APPENDIX H—continued

Reserves	Reforestation				Surveys	Protection, Firefighting, &c	Maintenance of Capital Improvements	New Construction of Nurseries, Buildings, &c	Overhead Expenses				Pay-roll Tax	Reserve Total			
	Plantations	Natural Regeneration	Nursery Working and Maintenance	Forest Experiment					Stores, Fodder, Supervision, &c	Holidays, Wet Time, &c	Cartage of Rations, &c	Camping Allowance			£	s.	d.
Reserve 12/24 ..	1,503 12 11				1,328 1 5	68 15 0	7 8 1	1,144 3 8	588 17 1	123 7 0	403 12 6		5,167 17 8				
Reserve 29 ..					3 0 5								3 0 5				
Reserve 67 ..					2 11 2								2 11 2				
Reserve 74 ..					24 18 4								24 18 4				
Reserve 97/99 ..	4,589 11 5				580 2 11	21 15 3	112 0 6	1,930 9 11	1,422 12 11	209 15 0	1,106 3 6		10,131 2 8				
Reserve 120 ..						3 0 4							3 0 4				
Reserve 137 ..						2 10 0							2 10 0				
Reserve 138 ..						69 12 1		305 19 2	89 14 2		186 15 6		1,673 8 9				
Reserve 164 ..			487 7 0		271 13 5		724 0 4	3,163 11 5	3,057 1 10	134 8 0	2,303 7 6		19,704 1 1				
Reserve 184 ..					968 2 11		58 4 5	1,023 3 5	876 7 4	149 9 10	472 13 6		5,358 14 1				
Reserve 220 ..					513 4 8		36 4 5	1,023 3 5	190 2 0	177 10 0	129 5 0		1,322 19 5				
Reserve 221 ..					233 18 1		633 11 2	1,023 3 5	6,498 5 3	385 18 9	5,717 10 0		43,098 14 10				
Reserve 238 ..	14,180 9 9	337 15 3			2,138 6 7	838 13 10		10,058 13 2	27 0 0				176 18 0				
Reserve 355 ..					84 13 11		10 18 6	12 14 10	8 9 3	48 10 0	16 16 0		82 14 6				
Reserve 424 ..					95 7 8		33 8 10	67 0 5	125 13 11	228 18 6	211 17 0		2,218 19 6				
Reserve 427 ..					67 0 5	61 6 1							3 9 0				
Reserve 502 ..					3 9 0								1,949 2 5				
Pay-roll Tax ..								861 8 5					1,861 8 5				
Administration ..													1,276 5 10				
Firefighting and Patrol ..					1,276 5 10								1,276 5 10				
Experiments ..													31 10 10				
Miscellaneous Surveys ..													1 11 8				
Drum Account ..								Cr. 70 3 6					Cr. 70 3 6				
	30,535 9 3	1,841 8 2	3,943 13 8	31 10 10	1,183 2 0	7,420 16 9	1,136 19 11	18,638 0 11	12,684 10 8	1,457 17 1	10,548 0 6	1,949 2 5	92,976 15 5				

KILKIVAN WORKING PLAN AREA													
Reserve 00 ..	2,601 8 3				7 0 4	135 17 2	92 6 3	769 15 11	1,029 1 1	1,345 7 3	243 17 5	685 0 6	6,049 18 3
Reserve 165 ..					569 0 10	351 15 3	169 9 9	45 3 9	2,323 19 6	1,348 8 8	308 15 0	924 5 6	12,641 1 0
Reserve 181 ..						108 14 10			76 15 1		8 14 2		230 15 8
Reserve 208 ..													106 3 7
Reserve 268 ..													5,202 2 6
Reserve 310 ..	1,909 17 2				7 10 7	197 12 1	25 5 8	106 1 5	1,283 10 8	929 19 2	44 10 0	788 18 4	1,278 2 2
Reserve 344 ..						386 3 7	8 4 4	54 16 7	36 0 6	134 1 8	85 11 9		1,287 11 11
Reserve 438 ..	213 11 4							130 2 6	273 7 0	190 3 5			8 2 5
Reserve 446 ..								2 7 3	103 12 5	96 11 10	11 4 0		407 5 4
Reserve 466 ..									482 15 7	948 10 11	352 10 6		8,760 1 2
Reserve 1073 ..	2,215 13 2				4,659 14 0	86 6 6			1,643 7 9				1,643 7 9
Pay-roll Tax ..													818 17 3
Administration ..													1,891 2 1
Firefighting and Patrol ..													20 13 11
Co-operative Burning ..													3,374 4 5
Experiments ..									40 9 0				40 9 0
Drum Account ..													41,188 12 7
	3,709 3 11	7,686 7 0	1,539 13 10	3,374 4 5	5,243 14 9	1,821 13 3	225 6 0	1,108 9 5	7,290 5 2	4,859 1 3	840 9 6	2,712 6 10	41,188 12 7

NORTH QUEENSLAND WORKING PLAN AREA													
Reserve 00 ..	2,601 8 3				7 0 4	135 17 2	92 6 3	769 15 11	1,029 1 1	1,345 7 3	243 17 5	685 0 6	6,049 18 3
Reserve 165 ..					569 0 10	351 15 3	169 9 9	45 3 9	2,323 19 6	1,348 8 8	308 15 0	924 5 6	12,641 1 0
Reserve 181 ..						108 14 10			76 15 1		8 14 2		230 15 8
Reserve 208 ..													106 3 7
Reserve 268 ..													5,202 2 6
Reserve 310 ..	1,909 17 2				7 10 7	197 12 1	25 5 8	106 1 5	1,283 10 8	929 19 2	44 10 0	788 18 4	1,278 2 2
Reserve 344 ..						386 3 7	8 4 4	54 16 7	36 0 6	134 1 8	85 11 9		1,287 11 11
Reserve 438 ..	213 11 4							130 2 6	273 7 0	190 3 5			8 2 5
Reserve 446 ..								2 7 3	103 12 5	96 11 10	11 4 0		407 5 4
Reserve 466 ..									482 15 7	948 10 11	352 10 6		8,760 1 2
Reserve 1073 ..	2,215 13 2				4,659 14 0	86 6 6			1,643 7 9				1,643 7 9
Pay-roll Tax ..													818 17 3
Administration ..													1,891 2 1
Firefighting and Patrol ..													20 13 11
Co-operative Burning ..													3,374 4 5
Experiments ..									40 9 0				40 9 0
Drum Account ..													41,188 12 7
	3,709 3 11	7,686 7 0	1,539 13 10	3,374 4 5	5,243 14 9	1,821 13 3	225 6 0	1,108 9 5	7,290 5 2	4,859 1 3	840 9 6	2,712 6 10	41,188 12 7







## APPENDIX I

## Net Area of Plantation Established 1st April, 1958, to 31st March, 1959.

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 ..	51.2	342.8	..	..	137.9	292.7	58.6	..	715.3	1,598.5
Bunya Pine ..	..	..	..	..	..	..	..	..	..	..
Other Native Conifers ..	..	1.6	..	..	..	..	..	..	..	1.6
B. Exotic Conifers—										
<i>P. elliotii</i> ..	533.3	559.1	215.2	635.4	..	..	..	18.8	..	1,961.8
<i>P. taeda</i> ..	66.5	3.0	..	..	..	..	..	..	..	69.5
<i>P. patula</i> ..	..	..	..	..	..	..	..	..	91.5	91.5
<i>P. caribaea</i> ..	12.0	17.5	216.9	47.0	..	..	..	..	..	293.4
<i>P. radiata</i> ..	..	..	..	..	..	..	..	76.2	..	76.2
<i>P. palustris</i> ..	..	..	..	..	..	..	..	..	..	..
Others ..	..	3	2.8	..	..	..	..	1.1	..	4.2
C. Broadleaved Softwoods—										
Silky Oak ..	..	..	..	..	..	..	..	..	..	..
Maple ..	..	4.6	..	..	..	..	..	..	..	4.6
Red Cedar ..	..	..	..	..	..	..	..	..	..	..
Others ..	..	..	..	..	..	..	1.4	..	..	1.4
Total Softwoods	663.0	928.9	434.9	682.4	137.9	292.7	60.0	96.1	806.8	4,102.7
<i>Eucalypts</i>										
<i>Euc. grandis</i> ..	..	62.0	..	..	..	..	..	..	..	62.0
Other Eucalypts ..	..	15.8	..	..	..	..	..	..	..	15.8
Total—Eucalypts	..	77.8	..	..	..	..	..	..	..	77.8
Total—All species	663.0	1,006.7	434.9	682.4	137.9	292.7	60.0	96.1	806.8	4,180.5

## APPENDIX J

## Net Area of Effective Plantation Classified into Forestry Districts to 31st March, 1959.

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 ..	382.7	14,679.9	15.4	137.6	2,446.0	7,764.7	788.8	..	15,909.9	42,125.0
Kauri Pine ..	1.7	1,473.2	0.7	69.7	..	..	285.0	..	..	1,830.3
Bunya Pine ..	1.5	294.5	1.7	4.7	1.2	37.6	0.8	..	58.0	400.0
Others ..	5.2	51.4	0.6	1.7	..	..	0.6	..	0.4	59.9
B. Exotic Conifers										
<i>P. elliotii</i> ..	10,307.6	6,627.8	2,100.5	7,987.6	70.5	54.3	7.8	621.3	916.4	28,693.8
<i>P. taeda</i> ..	3,305.9	105.1	9.8	54.1	1.0	116.2	13.7	224.7	41.4	3,871.9
<i>P. patula</i> ..	18.7	22.2	7.6	8.1	25.2	123.9	43.6	669.3	2,802.7	3,721.3
<i>P. caribaea</i> ..	16.7	23.9	867.0	64.0	1.0	..	9.0	..	..	981.6
<i>P. radiata</i> ..	..	..	..	..	..	..	..	1,066.6	..	1,455.1
<i>P. palustris</i> ..	252.7	1.8	5.8	1.0	..	..	..	8.7	..	272.6
Others ..	83.2	13.4	65.2	16.2	2.7	1.7	10.1	26.9	23.9	243.3
C. Broadleaved Softwoods—										
Silky Oak ..	..	175.9	..	..	..	32.1	31.7	..	675.5	915.2
Maple ..	..	52.6	..	..	..	..	202.3	..	..	254.9
Red Cedar ..	..	12.5	..	..	..	..	29.2	..	..	41.7
Others ..	0.1	99.3	..	0.3	0.8	0.9	93.6	..	..	195.0
Total—Softwoods	14,376.0	23,633.5	3,074.3	8,345.0	2,548.4	8,131.4	1,516.2	2,617.5	20,819.3	85,061.6
<i>Eucalypts</i>										
<i>Euc. saligna</i> ..	42.2	900.2	..	..	..	33.7	0.7	..	215.7	1,192.5
<i>Euc. paniculata</i> ..	229.2	216.2	..	..	..	76.4	35.6	..	459.3	1,016.7
<i>Euc. microcorys</i> ..	215.4	17.5	..	..	..	..	27.7	..	28.7	289.3
<i>Euc. pilularis</i> ..	160.9	..	..	..	..	..	0.2	..	..	161.1
Other Eucalypts	6.8	232.8	..	..	..	12.8	4.0	..	12.7	269.1
Total—Eucalypts	654.5	1,366.7	..	..	..	122.9	68.2	..	716.4	2,928.7
Total—All Species	15,030.5	25,000.2	3,074.3	8,345.0	2,548.4	8,254.3	1,584.4	2,617.5	21,535.7	87,990.3

## APPENDIX K

## Net Area of Plantation Effective at 31st March, 1959, Classified into Five-yearly Establishment Periods.

(Calendar year planting includes areas established to 31st March of succeeding year.)

Species	1920 and Earlier	1921-25	1926-30	1931-35	1936-40	1941-45	1946-50	1951-55	1956-58	Total
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
<i>Softwoods</i>										
A. Native Conifers—										
Hoop Pine ..	21.0	184.5	1,784.5	4,320.5	9,611.6	2,238.7	10,697.8	8,230.2	5,036.2	42,125.0
Kauri Pine ..	..	55.0	18.7	125.2	1,137.5	237.4	224.8	23.0	1.6	1,830.3
Bunya Pine ..	6.0	28.8	74.8	0.9	123.9	..	2.3	144.1	19.2	400.0
Others ..	..	3.7	42.6	2.4	4.6	..	..	0.3	6.3	59.9
B. Exotic Conifers—										
<i>P. elliotii</i> ..	..	6.7	48.1	1,901.6	1,130.8	506.5	3,683.4	13,526.7	7,800.0	28,693.8
<i>P. taeda</i> ..	..	..	32.5	561.3	550.1	453.0	1,284.7	884.0	106.3	3,871.9
<i>P. patula</i> ..	..	1.0	21.0	160.1	462.4	189.0	1,356.7	1,216.0	315.1	3,721.3
<i>P. caribaea</i> ..	..	..	..	..	..	..	2.1	422.3	557.2	981.6
<i>P. radiata</i> ..	..	0.4	67.8	151.9	1.9	..	131.5	622.4	479.2	1,455.1
<i>P. palustris</i> ..	..	..	0.2	28.1	108.7	44.1	45.8	39.2	6.5	272.6
Others ..	..	1.6	18.8	38.5	20.5	1.0	47.3	99.6	16.0	243.3
C. Broadleaved Softwoods—										
Silky Oak ..	..	3.1	538.8	286.7	86.6	..	..	..	..	915.2
Maple ..	..	0.8	11.9	49.1	93.6	63.4	14.0	17.5	4.6	254.9
Red Cedar ..	..	9.0	4.0	0.6	0.6	0.5	..	27.0	..	41.7
Others ..	..	0.7	14.7	106.0	35.1	5.7	8.8	17.5	4.8	195.0
Total Softwoods	..	44.6	311.4	2,806.9	7,796.5	13,308.3	3,670.0	17,492.1	25,269.8	85,061.6
<i>Eucalypts</i>										
<i>Euc. saligna</i> ..	..	..	1.0	1.2	145.0	129.3	756.7	159.3	..	1,192.5
<i>Euc. paniculata</i> ..	..	..	1.4	532.1	402.1	77.3	1.8	2.0	..	1,016.7
<i>Euc. microcorys</i> ..	..	..	5.3	90.0	194.0	..	..	..	..	289.3
<i>Euc. pilularis</i> ..	..	..	0.2	97.9	56.9	..	..	..	..	161.1
Other Eucalypts	..	..	0.5	6.4	22.7	9.4	35.1	29.1	165.9	269.1
Total—Eucalypts	..	..	8.4	727.6	820.7	216.0	799.7	190.4	165.9	2,928.7
Total—All Species	..	44.6	311.4	2,815.3	8,524.1	14,129.0	3,895.0	18,291.8	25,460.2	87,990.3

## APPENDIX L

## Areas of Natural Forest Treated

## A.—Eucalypts

Working Plan Area.	Reserve No.	Treated 1958-59	First Treatment 1958-59	Total as at 30th June, 1959
Brisbane .. .. .	571	Acres 110	Acres 110	Acres 183
	69	60	..	1,535
	1,376	..	..	1,480
	215	328	..	1,050
	702	..	..	2,060
	494	..	..	934
	446	..	..	1,094
	667	169	..	914
	309/1526	..	..	3,508
	1,355	..	..	1,625
	727	32	..	976
1,635	200	200	200	
Total .. .. .	..	899	310	15,559
Bundaberg .. .. .	80	276	..	9,484
	723	..	..	564
	832/837	1,023	403	16,306
Total .. .. .	..	1,299	403	26,354
Clermont .. .. .	117	..	..	10,820
	127	..	..	23,055
	..	..	..	33,875
Dalby .. .. .	93	..	..	18,998
	4	..	..	11,063
	83	..	..	4,876
	78	..	..	1,130
	34	..	..	1,270
	302	..	..	8,580
	106	..	..	1,275
Total .. .. .	..	..	47,192	
Fraser Island .. .. .	3/12	275	75	18,453
	..	275	75	18,453
Gympie .. .. .	393	50	..	3,084
	234	156	..	1,833
	502	74	..	1,568
	627	165	85	2,745
	700	..	..	3,672
	124	..	..	770
	959	..	..	1,241
	950/1	..	..	1,160
	392	..	..	84
	963	..	..	18
	952	86	86	86
Total .. .. .	..	531	171	16,261
Inglewood .. .. .	101	..	..	8,512
	81	..	..	7,490
	120	..	..	298
	132	..	..	207
Total .. .. .	..	..	..	16,507
Kilcoy .. .. .	370	195	195	3,793
	893	50	50	3,713
	637	..	..	1,168
Total .. .. .	..	245	245	8,674
Many Peaks .. .. .	28	1,486	1,026	11,039
	150	..	..	1,811
Total .. .. .	..	1,486	1,026	12,850

APPENDIX L—continued  
**Areas of Natural Forest Treated—continued**  
 A.—Eucalypts—continued

Working Plan Area	Reserve No.	Treated 1958-59	First Treatment 1958-59	Total as at 30th June, 1959
		Acres	Acres	Acres
Maryborough .. .. .	958	1,150	..	15,926
	57	1,105	..	23,720
	12	..	..	5,426
	8	235	..	14,483
	27	..	..	7,124
	1	..	..	1,632
	191/864	1,470	670	13,825
Total .. .. .	..	3,960	670	82,136
Mary Valley.. .. .	135	..	..	159
Total .. .. .	..	..	..	159
Murgon .. .. .	12/24	702	702	18,128
	221	268	268	2,682
	424/427	..	..	80
Total .. .. .	..	970	970	20,890
North Coast .. .. .	318/583	200	200	9,225
	249	..	..	1,185
	60	34	34	1,635
	173	64	..	3,135
	108/106/442	..	..	1,772
	313	..	..	1,650
	531	..	..	200
	351	..	..	580
	689	..	..	340
Total .. .. .	..	298	234	19,722
North Queensland .. .. .	194	..	..	175
	243	..	..	1,457
	245	..	..	339
	343	..	..	200
	438	186	..	2,637
	461	..	..	1,328
Total .. .. .	..	186	..	6,136
Warwick .. .. .	444	50	50	4,601
	574	894	..	5,306
Total .. .. .	..	944	50	9,907
Yarraman .. .. .	283	..	..	1,881
	257	..	..	125
	618	..	..	50
	527/8/9	549	496	5,972
Total .. .. .	..	549	496	8,028
Total—Eucalypts .. .. .	..	11,642	4,650	342,703

## B—Cypress Pine

Working Plan Area	Reserve No.	Treated 1958-59	First Treatment 1958-59	Total as at 30th June, 1959
		Acres	Acres	Acres
Bundaberg .. .. .	278	66	64	1,377
Total .. .. .	..	66	64	1,377
Dalby .. .. .	106	..	191	537
	93	221	221	2,512
	4	41	..	280
	78	3,856	2,780	65,278
	34	..	..	2,496
	150	145	145	6,599
	302	1,100	958	33,897
	127	..	..	710
	126/135	..	..	3,747
	154	1,923	718	30,538
	155	1,205	..	3,464
Total .. .. .	..	8,491	5,013	150,058

APPENDIX L—continued  
**Areas of Natural Forest Treated—continued**  
 B—Cypress Pine—continued

Working Plan Area	Reserve No.	Treated 1958-59	First Treatment 1958-59	Total as at 30th June, 1959
Fraser Island .....	3/12	Acres ..	Acres ..	Acres 4,424
Total .....	..	..	..	4,424
Inglewood .....	79	478	..	31,824
	48	477	477	5,242
	81	387	387	5,912
	101	..	..	540
	122	520	..	18,300
	134	600	..	14,790
	120	..	..	515
Total .....	..	2,462	864	77,123
Total Cypress Pine .....	..	11,019	5,941	232,982

C—Rain Forest

Working Plan Area	Reserve No.	Second Treatment 1958-59	First Treated 1958-59				First Treatment completed 1958-59	Total as at 30th June, 1959
			Brushed	Ring- barked and Thinned	Logged under Tree- marking Conditions	Trees Interplanted		
Natural Hoop Pine— Bundaberg .....	169	Acres ..	Acres ..	Acres ..	Acres ..	Number ..	Acres ..	Acres 9,902
Natural Rain Forest— Northern Queensland ..	99	274	111	116	280	3,025	116	731
	185	..	..	25	587	..	25	459
	191	..	..	..	..	..	..	71
	310	341	..	247	1,044	3,600	247	506
	251	..	..	..	20	..	..	..
	344	..	..	..	160	..	..	..
	350	..	..	..	240	..	..	..
	557	..	..	..	440	..	..	..
	571	..	..	..	56	..	..	..
	607	..	..	..	980	..	..	..
	700	..	..	..	40	..	..	..
	933	510	..	..	..	..	..	..
	1073	..	228	209	265	3,441	209	255
Total .....	..	1,125	339	597	4,112	10,066	597	2,022
Total—Rain Forest ..	..	1,125	339	597	4,112	10,066	597	11,924

(The above figures of Rain Forest area have been subject to revision.)

Grand Total—									
Eucalypts .. .. .	..	..	..	..	..	..	..	..	Acres 342,703
Cypress Pine .. .. .	..	..	..	..	..	..	..	..	232,982
Rain Forest .. .. .	..	..	..	..	..	..	..	..	11,924
									587,609

## APPENDIX M

## Summary of Forest Survey Work, Year ended 30th June, 1959.

Reserve or Portion	Parish	Area in Acres
CLASS 1—INSPECTIONS OF VACANT CROWN LANDS AND TIMBER RESERVES		
Reserve 61 .. .. .	Blythdale, Tingun .. .. .	900
Portions 9v, 25v .. .. .	Hope .. .. .	4,341
Portion 11v .. .. .	Trinidad .. .. .	2,000
Portions 10, 12, 21 to 24 .. .. .	Simmie .. .. .	32,937
Portions 1, 2, 8 .. .. .	Mellish .. .. .	18,663
Portions 2, 5, 6 .. .. .	Bungaban .. .. .	9,656
Portions 3, 4 .. .. .	Whitalby .. .. .	27,166
Portions 1, 5 .. .. .	Dewurra .. .. .	26,076
Portions 1, 3 .. .. .	Yamma .. .. .	28,270
	Total .. .. .	150,009

CLASS 2—ASSESSMENT SURVEYS		
Portions 1, 2 .. .. .	Davy .. .. .	12,782
Portion 1 .. .. .	Goomally (proceeding) .. .. .	12,300
Portion 1 .. .. .	Coorada .. .. .	13,177
Ghinghinda Holding	Ghinghindah .. .. .	1,400
Portion 1 .. .. .	Quakit .. .. .	29,002
Portion 17 .. .. .	Gibbergunyah .. .. .	17,194
Portions 1, 2 .. .. .	Tuturin .. .. .	17,474
Reserve 1 .. .. .	Tuturin .. .. .	616
Reserves 137, 207 .. .. .	Yabba, Monsildale .. .. .	1,008
Reserve 20 .. .. .	Maryvale .. .. .	1,438
	Total .. .. .	106,391

## FOREST INVENTORY SURVEY

Reserve	Parish	Area in Acres
81 .. .. .	Tandan, Beebo, Bracker .. .. .	..
120 .. .. .	Greenup .. .. .	4,155
132 .. .. .	Texas .. .. .	2,425
118 .. .. .	Wyomo .. .. .	2,642
13 .. .. .	Texas .. .. .	5,390
101 .. .. .	Devine .. .. .	11,527
48 .. .. .	Umbercollie .. .. .	9,761
174 (proceeding)	Boondandilla .. .. .	..
302 (remeasure)	Chinchilla .. .. .	..
302 (proceeding)	Goldsmith .. .. .	..
792 .. .. .	Jimna .. .. .	14,000
3 .. .. .	Fraser Island .. .. .	..
832 (balance) .. .. .	Cordalba .. .. .	29,680
393 (remeasure)	Woondum .. .. .	..
234 (remeasure)	Tuchekoi .. .. .	..
627 (remeasure)	Goomboorian .. .. .	..
502 (remeasure)	Gympie .. .. .	..
435 (remeasure)	Amamoor, Kandanga .. .. .	..
256 (remeasure)	Imbil .. .. .	..
274 (remeasure)	Cambroon .. .. .	..
137, 207 (remeasure)	Yabba, Monsildale .. .. .	..
1635 (proceeding) .. .. .	Kholo .. .. .	..
292, 318 (remeasure)	Maroochy .. .. .	..
445, 572, 583 (remeasure)	Kenilworth .. .. .	..
313 (replace) .. .. .	Durundur .. .. .	..
154 (remeasure)	Vignoles, Brigalow .. .. .	..
150 (remeasure)	Dunmore .. .. .	..
302 (remeasure)	Ballon .. .. .	..
	Total .. .. .	79,580

## APPENDIX M—continued

## Summary of Forest Survey Work, Year ended 30th June, 1959—continued.

## COMPARTMENT, FIREBREAK AND SOIL SURVEYS

Reserve	Parish	Type	Area in Acres
915 .. .. .	Tahiti, Bidwell .. .. .	Soil, Firebreak, Access .. .. .	4,100
779 .. .. .	Gregory .. .. .	Soil, Compartment .. .. .	..
563 .. .. .	Gregory .. .. .	Soil .. .. .	3,480
1004 .. .. .	Toolara .. .. .	Plantable, etc. .. .. .	1,546
766 .. .. .	Beerwah .. .. .	Boundary .. .. .	50
525 .. .. .	Beerwah .. .. .	Improvements .. .. .	5
561 .. .. .	Bribie .. .. .	Compartment, Soil .. .. .	300
700 .. .. .	Toorbul .. .. .	Compartment, Soil .. .. .	700
Portions 686, 719 .. .. .	Beerwah .. .. .	Soil .. .. .	141
135 .. .. .	Brooloo .. .. .	Compartment .. .. .	2,132
135 .. .. .	Cambroon .. .. .	Roads, Species, etc. .. .. .	..
435 .. .. .	Anamoor, Kandanga .. .. .	Compartment, etc. .. .. .	..
256 .. .. .	Imbil .. .. .	Species, etc. .. .. .	..
124 .. .. .	Glastonbury .. .. .	Scrub Break .. .. .	801
242 .. .. .	Widgee .. .. .	Scrub Break .. .. .	626
392 .. .. .	Como .. .. .	Soil, Species, etc. .. .. .	..
283 .. .. .	Colinton .. .. .	Break, Miscellaneous .. .. .	..
258 .. .. .	Cooyar .. .. .	Break, Miscellaneous .. .. .	..
120 .. .. .	Neumgna .. .. .	Break, Miscellaneous .. .. .	..
618 .. .. .	Avoca .. .. .	Break, Miscellaneous .. .. .	..
257 .. .. .	Cooyar .. .. .	Miscellaneous .. .. .	..
289 .. .. .	Cooyar .. .. .	Miscellaneous .. .. .	..
316 .. .. .	Cooyar .. .. .	Miscellaneous .. .. .	..
673 .. .. .	Monsildale .. .. .	Miscellaneous .. .. .	..
151 .. .. .	Bunya Mountains .. .. .	Miscellaneous .. .. .	..
185, 1071 .. .. .	Danbulla .. .. .	Compartment .. .. .	350
95 .. .. .	New Cannindah .. .. .	Compartment, Scrub Break .. .. .	..
107 .. .. .	Minerva .. .. .	Compartment, Scrub Break .. .. .	4,500
137, 207 .. .. .	Monsildale .. .. .	Site Index, Scrub Falling .. .. .	769
154 .. .. .	Gallangowan .. .. .	Compartment, Firebreak .. .. .	..
298 .. .. .	Gallangowan .. .. .	Re-survey roads .. .. .	..
612 .. .. .	Manumbar .. .. .	Re-survey roads .. .. .	..
792 .. .. .	Manumbar .. .. .	Boundary .. .. .	..
220 .. .. .	Kilkivan .. .. .	Roads, etc. .. .. .	..
20 .. .. .	Maryvale .. .. .	Compartment, Firebreak .. .. .	530
		Total .. .. .	20,030

## THEODOLITE CONTROL SURVEY

Reserve	Parish	Miles	Chains
298, 673 .. .. .	Gallangowan, Monsildale .. .. .	28	78
154 .. .. .	Gallangowan .. .. .	6	09
370 .. .. .	Durundur .. .. .	4	68
256 .. .. .	Imbil .. .. .	3	58
135, 274 .. .. .	Cambroon .. .. .	7	75
792 .. .. .	Kilcoy .. .. .	8	50
274 .. .. .	Conondale .. .. .	12	72
612 .. .. .	Manumbar .. .. .	5	28
138 .. .. .	Manumbar .. .. .	1	79
135 .. .. .	Brooloo .. .. .	3	58
	Total .. .. .	84	15



## APPENDIX N

## State Forests, Timber Reserves and National Parks at 30th June, 1959.

Land Agent's District	State Forests			Timber Reserves			National Parks		
	No.	Area		No.	Area		No.	Area	
		A.	R. P.		A.	R. P.		A.	R. P.
Atherton .. .. .	15	68,106	0 3	7	46,329	2 26	7	3,574	2 27
Bowen .. .. .	1	35,860	0 0	7	55,020	0 0	36	118,587	0 0
Brisbane .. .. .	68	279,980	2 37	39	28,435	1 6	44	79,380	1 17
Bundaberg .. .. .	17	171,892	1 4	32	154,010	0 11	..	..	..
Cairns .. .. .	8	158,859	0 36	15	450,384	2 0	20	92,298	3 24
Charleville .. .. .	..	..	..	2	68,397	0 0	..	..	..
Charters Towers .. .. .	..	..	..	1	125,000	0 0	..	..	..
Clermont .. .. .	3	132,378	3 35	4	69,274	1 0	..	..	..
Cloncurry .. .. .	..	..	..	1	3,950	0 0	..	..	..
Cooktown .. .. .	..	..	..	7	525,460	0 0	7	10,091	0 0
Dalby .. .. .	19	1,076,528	1 15	6	22,753	1 39	1	13,145	0 0
Gayndah .. .. .	3	41,434	2 0	16	63,511	0 32	..	..	..
Gladstone .. .. .	6	37,317	2 0	26	86,506	1 14	4	127	0 0
Goondiwindi .. .. .	6	181,676	1 0	7	51,496	2 20	..	..	..
Gympie .. .. .	49	450,412	2 3	12	42,950	2 24	5	954	2 7
Herberton .. .. .	6	78,274	1 18	7	72,751	3 39	5	3,361	3 28
Ingham .. .. .	1	43,620	0 0	4	59,345	0 0	1	16,660	0 0
Inglewood .. .. .	11	190,512	3 35	5	9,758	0 8	..	..	..
Innisfail .. .. .	2	65,167	0 0	10	350,658	3 24	27	109,397	1 31
Ipswich .. .. .	28	178,047	2 27	24	65,980	2 13	5	6,433	0 5
Jundah .. .. .	..	..	..	1	25,600	0 0	..	..	..
Mackay .. .. .	5	59,597	0 0	17	109,115	3 0	53	149,085	2 29
Maryborough .. .. .	42	717,797	3 19	18	24,631	0 21	4	8,185	0 0
Monto .. .. .	11	207,465	0 20	11	75,042	2 32	..	..	..
Nanango .. .. .	27	223,224	3 9	13	8,150	1 26	2	11,116	1 18
Rockhampton .. .. .	9	208,718	1 0	15	114,873	2 22	15	2,597	0 0
Roma .. .. .	14	178,546	2 37	1	8,600	0 0	..	..	..
Springsure .. .. .	..	..	..	5	115,888	1 0	2	114,800	0 0
Stanthorpe .. .. .	4	13,933	2 36	..	..	..	6	12,604	3 0
Taroom .. .. .	2	22,186	0 0	5	46,462	2 0	1	11,400	0 0
Toowoomba .. .. .	21	260,262	0 30	16	31,700	1 15	5	3,214	3 0
Torres .. .. .	..	..	..	1	98,000	0 0	..	..	..
Townsville .. .. .	1	23,123	0 0	2	17,199	1 31	3	70,520	0 0
<b>Total .. .. .</b>	<b>379</b>	<b>5,104,923</b>	<b>0 4</b>	<b>337</b>	<b>3,027,237</b>	<b>3 3</b>	<b>253</b>	<b>838,134</b>	<b>1 26</b>

At 30th June, 1959—

Total area reserved for—		A.	R. P.
State Forests .. .. .	.. .. .	5,104,923	0 4
Timber Reserves .. .. .	.. .. .	3,027,237	3 3
National Parks .. .. .	.. .. .	838,134	1 26
<b>Total Reservations .. .. .</b>		<b>8,970,295</b>	<b>0 33</b>

## APPENDIX O

## Reservations for the Year ended 30th June, 1959.

*State Forests.*—Four (4) new State Forests, with a total of 25,994 acres, were proclaimed during the year, viz.—

Acres		Land Agent's District
10,000	Reserve 658, Macartney and Lacy .. .. .	Mackay
8,105	Reserve 661, Pelion .. .. .	Mackay
7,437	Reserve 411, Mia Mia .. .. .	Mackay
452	Reserve 766, Beerwah .. .. .	Brisbane

6,717 acres were added to existing reserves. Sixteen reserves were cancelled for inclusion in adjoining State Forests.

*Timber Reserves.*—At 30th June, 1959, the number of Timber Reserves was 337 compared with 339 at the 30th June, 1958.

One (1) new area, of 6,393 acres, was reserved, being Reserve 82, Koko, Dalby Land Agent's District.

Three (3) reserves totalling 26,805 acres were converted to State Forests, and 888 acres were released.

*National Parks.*—One (1) new National Park of 740 acres was proclaimed during the year and 78 acres were added to existing reserves.

1ST JULY, 1958, TO 30TH JUNE, 1959.

## STATE FORESTS

	No.	A.	R.	P.
At 1st July, 1958 .. .. .	391	5,033,233	2	4
Proclaimed 1-7-58 to 30-6-59 .. .. .	4	25,994	1	3
V.C.L. added to existing reserves .. .. .		6,716	2	7
Recomputation of areas .. .. .		38,978	2	30
	395	5,104,923	0	4
Reserves cancelled for inclusion in adjoining State Forest .. .. .	16			
Total at 30th June, 1959 .. .. .	379	5,104,923	0	4

## TIMBER RESERVES

	No.	A.	R.	P.
At 1st July, 1958 .. .. .	339	3,048,412	1	18
Proclaimed 1-7-58 to 30-6-59 .. .. .	1	6,393	1	0
V.C.L. added to existing reserves .. .. .		125	1	6
	340	3,054,930	3	24

	A.	R.	P.
Reserves converted to State Forests .. .. .	26,805	0	0
Areas released, recomputation of boundaries .. .. .	888	0	21
		3	27,693 0 21
Total at 30th June, 1959 .. .. .	337	3,027,237	3 3

## NATIONAL PARKS

	No.	A.	R.	P.
At 1st July, 1958 .. .. .	252	837,316	0	31
Proclaimed 1-7-58 to 30-6-59 .. .. .	1	740	0	0
V.C.L. added to existing reserves .. .. .		78	0	35
Total at 30th June, 1959 .. .. .	253	838,134	1	26
Total reservations at 30th June, 1959 .. .. .	969	8,970,295	0	33

## APPENDIX P

## Expenditure, Surveys, Year ended 30th June, 1959.

Particulars of Survey—	£	s.	d.	£	s.	d.
Harvesting and Marketing Project—						
Forest Inventory Surveys—						
Reserve 1635, Brisbane .. .. .	257	14	7			
Reserve 832, Bundaberg .. .. .	2,711	8	3			
Reserve 302, Chinchilla, Dalby .. .. .	10,770	2	11			
Reserve 78, Dalby .. .. .	312	1	3			
Reserve 150, Dalby .. .. .	771	8	0			
Reserve 154, Dalby .. .. .	4,464	15	5			
Reserve 155, Dalby .. .. .	17	7	4			
Reserve 174, Dalby .. .. .	1,742	12	9			
Reserve 3, Fraser Island .. .. .	1,176	13	7			
Reserve 234, Gympie .. .. .	148	8	6			
Reserve 393, Gympie .. .. .	486	7	5			
Reserve 451, Gympie .. .. .	47	5	0			
Reserve 502, Gympie .. .. .	125	12	7			
Reserve 627, Gympie .. .. .	303	8	5			
Reserve 952, Gympie .. .. .	73	14	0			
Reserve 13, Inglewood .. .. .	178	5	6			
Reserve 48, Inglewood .. .. .	753	4	1			
Reserve 81, Inglewood .. .. .	960	6	0			
Reserve 101, Inglewood .. .. .	404	7	11			
Reserve 118, Inglewood .. .. .	99	10	2			
Reserve 120, Inglewood .. .. .	195	3	1			
Reserve 122, Inglewood .. .. .	54	2	7			
Reserve 132, Inglewood .. .. .	117	4	4			
Reserve 134, Inglewood .. .. .	19	10	11			
Reserve 137, Jimna .. .. .	403	14	4			
Reserve 792, Jimna .. .. .	4,126	1	9			
Reserve 12, Maryborough .. .. .	75	6	11			
Reserve 57, Maryborough .. .. .	46	5	4			
Reserve 135, Mary Valley .. .. .	1,988	17	8			
Reserves 135/274, Mary Valley .. .. .	162	14	7			
Reserve 435, Mary Valley .. .. .	117	13	8			
Reserve 313, North Coast .. .. .	39	12	4			
Reserve 445, North Coast .. .. .	3,141	16	7			
				36,292	17	9
Class II. Surveys—						
Gowrie Creek, North Queensland .. .. .		19	8			
Coorada, Theodore .. .. .	2,763	9	3			
Duarina .. .. .	2,449	18	5			
Goomally .. .. .	939	17	2			
Ghinghinda .. .. .	122	0	3			
				6,276	4	9
Theodolite Surveys—						
South Queensland .. .. .				34	3	4
Road Location Surveys—						
Reserve 607, North Queensland .. .. .				33	0	9
Miscellaneous Surveys—						
Reserve 1152, Brisbane .. .. .	30	3	6			
Reserve 283, Yarraman .. .. .	8	17	6			
Reserve 392, Gympie .. .. .	17	3	6			
Reserve 370, Kilcoy .. .. .	22	13	5			
Reserve 298, Kilkivan .. .. .	10	10	8			
Reserve 95, Many Peaks .. .. .	10	6	6			
Reserve 60, North Queensland .. .. .	9	5	6			
Reserve 268, North Queensland .. .. .	19	0	3			
Reserves 343 and 350, North Queensland .. .. .	308	13	5			
Reserve 353, North Queensland .. .. .	115	11	5			
Reserve 441, North Queensland .. .. .	41	11	10			
Reserve 756 Meunga, North Queensland .. .. .	462	1	8			
Reserve 909, North Queensland .. .. .	15	13	3			
V.C.L. Lannercost, North Queensland .. .. .	59	7	10			
				1,121	4	3
Survey Prints, Maps and Mountings .. .. .						
				738	10	3
Reforestation Branch Projects—						
As detailed in Appendix H .. .. .				25,132	15	4
Total Expenditure .. .. .				£69,628	16	5

## APPENDIX Q

## Distribution of Personnel, 30th June, 1959.

Salaried officers	.. .. .	344
Other employees	.. .. .	1,615
		<u>1,959</u>

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By Authority: S. G. REID, Government Printer, Brisbane