1960

QUEENSLAND

# ANNUAL REPORT

OF THE

# DEPARTMENT OF FORESTRY

FOR THE

YEAR 1959-60

**PRESENTED TO PARLIAMENT BY COMMAND**

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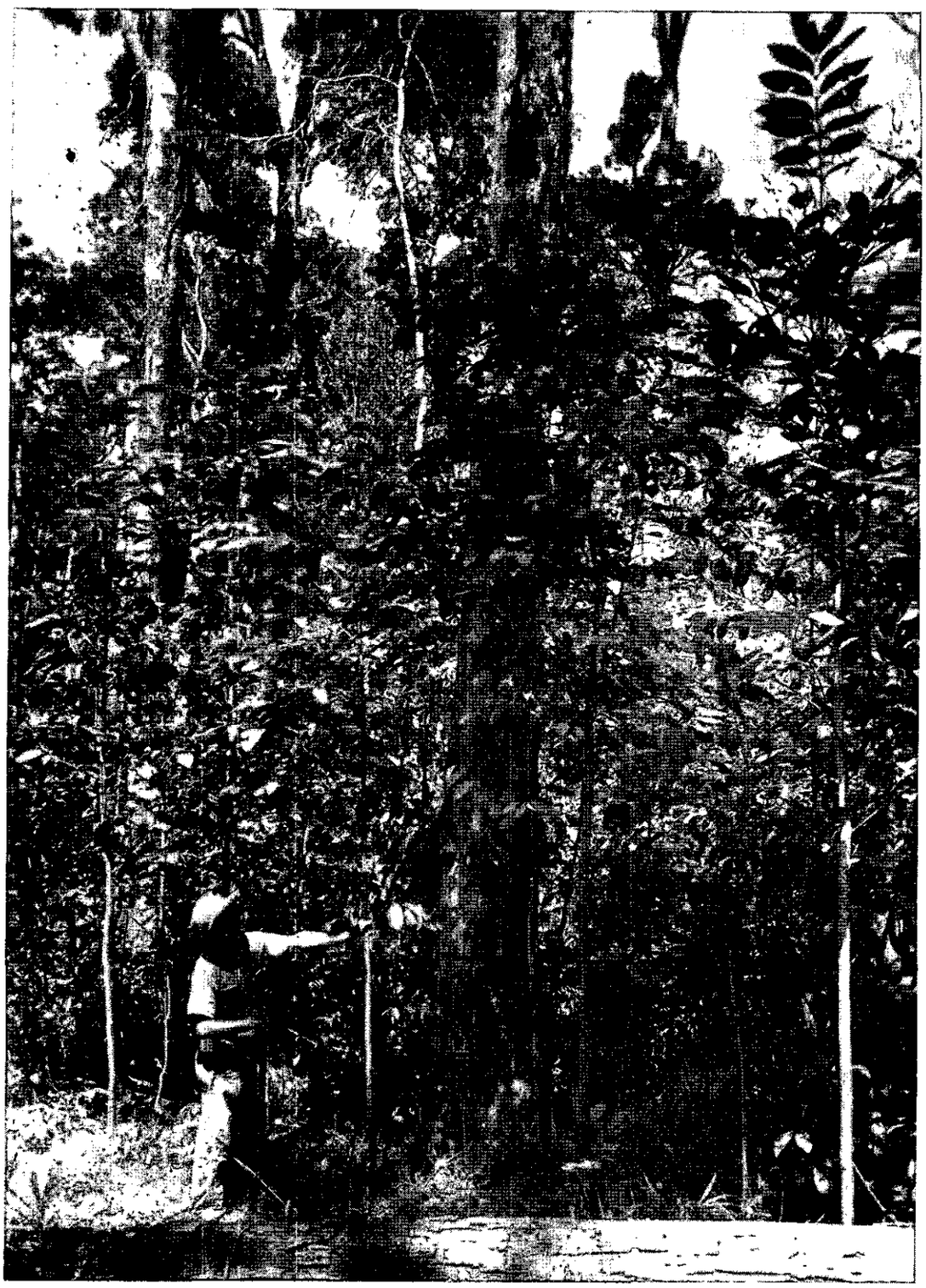


**FINE WOODS OF THE FUTURE**

**Natural regeneration of Maple, 6 years old, on silviculturally treated rain forest, North Queensland.**

DEPARTMENT OF FORESTRY

# SALIENT STATISTICS FOR THE YEAR 1959-60

| | |
|---|---|
| Area of new plantations established | 4,860 acres |
| | (Total area planted is 92,850 acres) |
| Number of trees planted | 2,934,000 |
| Trees sold to the public | 435,000 |
| Number of trees in 25 nurseries at 30th June, 1960 | 5,297,000 |
| Area of plantations thinned unmerchantably | 8,904 acres |
| Area of plantations thinned merchantably | 4,152 acres |
| Yield of plantation thinnings | 27,565,000 super. feet |
| Area of plantations pruned | 17,772 acres |
| Natural forest given silvicultural treatment | 26,803 acres |
| | (Total area treated is 598,628 acres) |
| Length of firebreaks and roads constructed | 360 miles |
| Length of firebreaks and roads maintained | 3,860 miles |
| Logging roads constructed | 88 miles |
| Total mill log cut from Crown areas | 238 328,721,000 super. feet |
| Railway and mining timbers, poles, &c., expressed in super. feet | 55,061,000 super. feet |
| Road subsidies to Shire Councils | £19,971 |
| Staff— | |
| Salaried officers | 353 |
| Wages men | 1,729 |
| Total expenditure | £3,331,519 |
| Expenditure on works | £1,934,057 |
| Gross revenue from timber sales | £2,176,934 |
| State Forests—1 new reserve ; total area increased by | 13,560 acres |
| Timber Reserves—4 new reserves ; total area increased by | 28,502 acres |
| National Parks—3 new reserves ; total area increased by | 4,987 acres |
| Total reservations at 30th June, 1960 — 372 State Forests, area | 5,118,483 acres |
| 337 Timber Reserves, area | 3,055,740 acres |
| 255 National Parks, area | 843,054 acres |

= 9·1% of State area

# Report of the Director of Forests for the Year ended 30th June, 1960

## INTRODUCTION

From the point of view of the Forestry Department the year 1959-60 was one of great significance. In this year forestry was, for the first time, recognised in the name of a Ministerial portfolio, "*The Forestry Act of* 1959" was enacted, and the Timber Inquiry Committee of 1959 submitted its report on matters of forestry interest.

On 1st June, 1960, the Forestry Department, which had formerly been under the control of the Minister for Lands and Irrigation, was made responsible to the Minister for Agriculture and Forestry.

Forestry is a primary industry of national importance, providing substantial employment, and producing the raw material on which the timber industry in the State largely depends. Our forests are also relied on to provide major protection to our watersheds and they have aesthetic and recreational values. In the administration of the National Parks the Department has an additional responsibility to the State of no small importance. This recognition of the responsibilities and status of the Department at Ministerial level is welcome.

The passing of "*The Forestry Act of* 1959" represented a considerable step forward in forestry legislation in Queensland. Formerly the authorities under which the Department functioned were scattered through various Acts and there were directions in which the former Acts were inadequate. With the implementation of the new Act many former difficulties have been removed, and so the work of the Department will be facilitated.

Close liaison with other Departments will be necessary, particularly with the Lands Department in connection with land classification for forestry purposes, and the control of ringbarking, or other destruction of timber, on Crown leaseholds.

There are three regions of the State in which increased areas of State Forests are considered necessary in the interests of the timber economy of Queensland. The first and most important of these areas is North Queensland, where an important and well-developed timber industry exists. The future of this industry will be in jeopardy if the area of State Forest in North Queensland is not substantially increased. On the other hand the ultimate expansion of this industry, which produces some of the world's most attractive and most valuable woods, would be possible if sufficient of the remaining rain forest areas were placed under sound forest management. Permanent reservation as State Forest is necessary before expenditure can be incurred on the growing of the long-term forest crop. Silvicultural work cannot be carried out unless there is certainty that the areas concerned will not be diverted to other use before the forest crop has matured.

The other two regions where increased State Forest reservation is essential are the Cypress Pine areas of South Queensland, and the hardwood areas of Central Queensland. In both cases there is a substantial timber resource on Crown leaseholds. The permanent timber production from these resources is needed to assist in maintaining Queensland's timber supply.

In November, 1958, a Timber Inquiry Committee was appointed to investigate, *inter alia,* the timber sales and sawmills licensing policies of the Department and the relationship between sawn timber and plywood prices and the prices of Crown logs. After eight months of intensive inquiry the Committee submitted its report at the end of August, 1959. The report substantially endorsed the policies and procedures of the Department, but did recommend some changes. At the end of the year the report had not received final consideration.

## REFORESTATION

### Management

*General.*—Total funds provided for work under the reforestation heading were originally below the expenditure in 1958-59, but an additional allocation during the year allowed the expenditure to finally slightly exceed that of the previous year.

The softwood planting programme was 704 acres larger than in 1958-59, while the figure for silvicultural treatment of the natural forests was also somewhat higher. Extension of softwood planting to two new centres—one on State Forest Reserve 779 Gregory, in the Bundaberg District (first planting in the winter of 1960), and the other on State Forest Reserve 658 Macartney, in the Mackay District (first planting will be in 1961)—was possible.

As has been the case for many years, lack of funds prevented the extension of silvicultural work to additional cypress pine and hardwood State Forests.

State Forest reservation area increased by 13,560 acres during the year, but only a small part of this was in the region north of Townsville where there is pressing need for the permanent reservation of rain forest, not only for timber production purposes, but also for watershed protection of steep areas in this region of high rainfall.

Inventory survey work continued during the year. On the softwood plantations 353 permanent plots, sampling 3,527 acres, were remeasured and 78 new plots established. In the cypress pine—hardwood areas of the inland 1,008 plots were established on a total area of 168,000 acres. Work on the coastal hardwood forests saw the establishment of 467 plots sampling 48,000 acres, while 24,000 acres were sampled by 114 non-permanent plots. This work was, at the close of the year, interrupted by the need to furnish complete timber valuations for certain areas held under pastoral leases which, under an amendment to the Land Acts, can now be converted to a tenure equivalent to freehold. Up to date the Department has been asked to provide valuations for 197 blocks totalling 549,000 acres. This is a mammoth task which cuts seriously into the Department's normal programme.

Apart from plantations the Department has now, following detailed inventory, prescribed and applied cuts on a sustained basis for an area of 2,100,000 acres.

The cut of plantation thinnings for the year was 27,565,000 super. feet, being 7,270,000 super. feet in excess of the previous highest total, and raising the total yield to 30th June, 1960, to 189,970,000 super. feet, of a stumpage value of approximately £613,000.

The total quantity of softwood thinnings sold on a permanent basis requires the removal of 36,800,000 super. feet per year, but 3,400,000 super. feet of this is from recent sales not yet operated. Hence, removals are 80 per cent. of requirements overall which, for the small material involved generally, is reasonably satisfactory.

### Silviculture

*General.*—Rainfall for the year, whilst generally close to, or slightly above, average for most centres, has again been erratic in distribution. Areas south of Maryborough experienced one of the best springs on record, but rainfall for the three generally wet months of the year, namely January, February and March, was well below average—the following figures illustrate the position:—

| Station | Rainfall in Points | | | |
|---|---|---|---|---|
| | September–October–November | | January–February–March | |
| | Average | 1959 | Average | 1960 |
| Yarraman .. .. .. .. .. | 750 | 1,586 | 1,180 | 668 |
| Imbil .. .. .. .. .. .. | 879 | 1,988 | 2,229 | 1,152 |
| Beerwah .. .. .. .. .. | 1,012 | 2,355 | 2,948 | 1,744 |

In the Maryborough–Monto area rainfall followed a more normal pattern, with a total fall of slightly below average. In the Rockhampton district and in North Queensland total falls were close to average, with fairly normal distribution.

Good falls in July allowed the exotic pine planting programme for 1959 to continue without interruption and, although falls for August were below average, the good spring rains ensured an excellent survival of the planted stock.

The heavy falls of rain in September, October and November greatly hampered burning of felled scrub areas, with a resulting increase in lumping and burning costs.

Planting conditions for Hoop Pine were favourable and, although the wet season did not materialise for most of the Hoop Pine areas, the rainfall received was sufficient to ensure good survival.

Rainfall from March until the end of the year was, generally, below average but soil moisture was sufficient to enable the planting of exotic pine to commence in June and planting was still in progress at the close of the financial year.

Details of the year's work are as follows:—

| | 1958-59 | 1959-60 |
|---|---|---|
| | Acres | Acres |
| Area of natural forest treated | 24,383 | 26,803 |
| Area of plantation established | 4,180 | 4,860 |
| Area covered in pruning | 14,368 | 17,772 |
| Area tended | 59,343 | 70,707 |
| Area thinned merchantably | 2,750 | 4,152 |
| Area thinned unmerchantably | 11,897 | 8,904 |

The acreage of natural forest treated shows an increase of 2,420 acres on the area treated in 1958-59 and it is hoped to further increase this acreage during 1960-61. The amount of work covered in 1959-60 shows an all-round increase on that carried out in 1958-59, and a comparison with the programme of work completed during 1949-50 is of interest:—

| | 1949-50 | 1959-60 |
|---|---|---|
| | Acres | Acres |
| Area of natural forest treated | 38,756 | 26,803 |
| Area of plantation established | 5,225 | 4,860 |
| Area covered in pruning | 6,566 | 17,772 |
| Area tended | 22,967 | 70,707 |
| Area thinned merchantably | 1,326 | 4,152 |
| Area thinned unmerchantably | | 8,904 |
| Total area planted | 46,460 | 92,850 |

The figures for pruning, tending and thinning indicate the great increase in work associated with an annual planting programme and emphasise the need for increasing man power and funds if such a programme is to be maintained.

*Plantations*

Appendix I shows, by districts and by species, the areas planted from 1st April, 1959, to 31st March, 1960. The area planted for the period is 4,859·8 acres made up as follows:—

| | Acres |
|---|---|
| Native Conifers (chiefly Hoop Pine) | 1,915·6 |
| Exotic Conifers (chiefly Slash Pine, *Pinus patula, Pinus caribaea* and *Pinus radiata*) | 2,878·9 |
| Broadleaved species | 11·8 |
| Eucalypts | 53·5 |
| | 4,859·8 |

The total area of effective plantation, all species, established to 31st March, 1960, is 92,850 acres comprised of:—

| | Acres |
|---|---|
| Native Conifers | 46,331 |
| Exotic Conifers | 42,118 |
| Broadleaved species | 1,419 |
| Eucalypts | 2,982 |
| | 92,850 |

Machines were used for the clearing of 677 acres of rain forest land and of approximately 500 acres of forest land. The former is equivalent to 35 per cent. of the area planted during the year with native conifers and the latter equivalent to 18 per cent. of the area planted with exotic conifers.

The rain forest areas were pushed without prior brushing and, despite most adverse burning conditions, the areas were prepared for planting at a lesser cost than for areas hand-felled. With machine-cleared areas the unburnt debris, following the burning off fire, can be stacked and burnt by machine at a lesser cost than is the case with hand-felled areas. The average cost per acre, including all plant hire charges, for machine cleared areas and for hand-felled areas is as follows:—

| | | Average cost per acre | |
|---|---|---|---|
| | | Clearing and Burning | Lumping and Burning |
| | Acres | £ | £ |
| Machine cleared .. .. | 677 | 13·66 | 4·0 |
| Hand cleared .. .. .. | 1,147 | 18·2 | 8·27 |

It must be remembered that the machine cleared areas are, generally, of easier topography and this point must be kept in mind when considering the unit costs above.

Again, the submission of very low tenders for hand falling of forest country in the exotic pine areas kept the area cleared by machine at a low figure. It is expected, however, that close on 1,000 acres will be handled by machines during 1960-61.

Planting conditions, in the winter months for the exotic pines and in the summer months for Hoop Pine, were generally satisfactory and very little refilling has been called for.

Tubed planting stock of *Pinus patula* was used at Pechey this year with more satisfactory results and it is intended to continue using tubed stock at this centre for a number of years yet.

*Pinus caribaea* is now the main species at Reserve 20, Maryvale—its rate of growth is much superior to that of *Pinus elliottii* and it gives every indication of being much the better species for this tropical area.

Operations were commenced on Reserve 779, Gregory, in the Bundaberg district, and by the end of the year approximately 90 acres had been machine cleared ready for planting with *Pinus elliottii*.

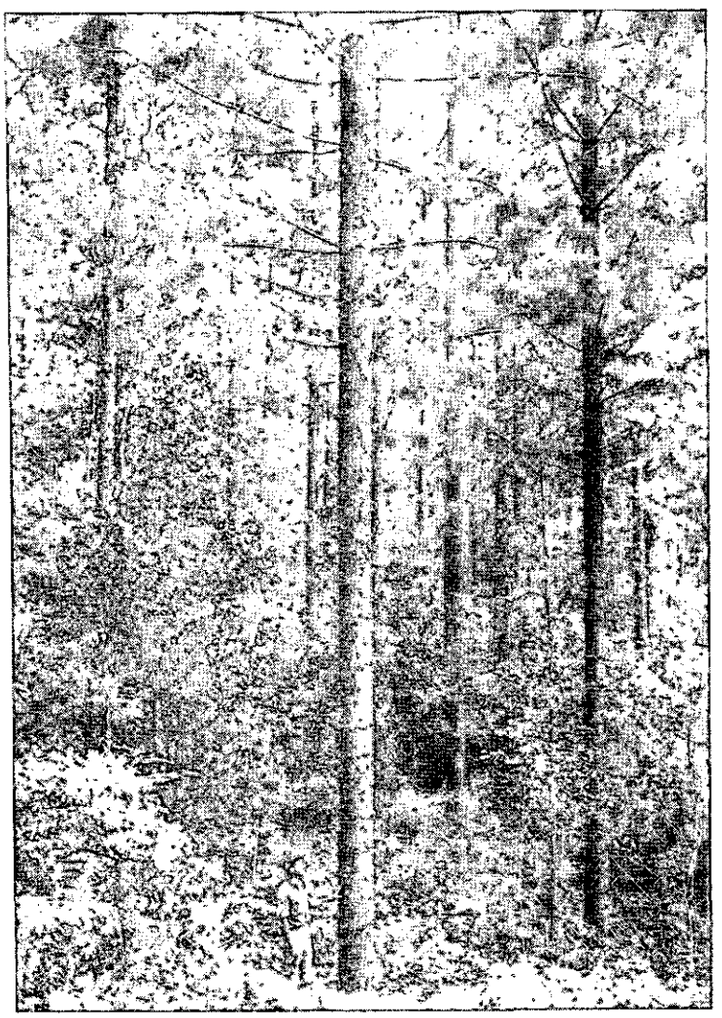
The heavy spring rains over most of the Hoop Pine areas resulted in heavy weed growth and first year tending costs have been high. The machine cleared areas produced heavy crops of weeds but, even so, tending costs on these areas, at an average of £13·6 per acre, are considerably less than on hand felled areas at £18·3 per acre. The failure of heavy rains during January, February and March greatly helped the tending position.

The control of persistent Eucalyptus coppice in exotic pine plantations by ringing at ground level and treating with a 1 per cent. solution of 2,4,5–T amine salt in water is now standard practice. Area tended during the year totalled 70,707 acres.

A large pruning programme was again carried out and details of the year's work are as follows:—

| | 1958-59 | 1959-60 |
|---|---|---|
| | Acres | Acres |
| First operation .. .. .. .. .. .. | 5,534 | 5,742 |
| Second operation .. .. .. .. .. .. | 4,213 | 5,694 |
| Third operation .. .. .. .. .. .. | 3,539 | 4,193 |
| Fourth operation .. .. .. .. .. .. | 1,082 | 2,143 |
| | 14,368 | 17,772 |

In addition to normal pruning, 130 acres of plantation were covered for the removal of epicormic shoots.

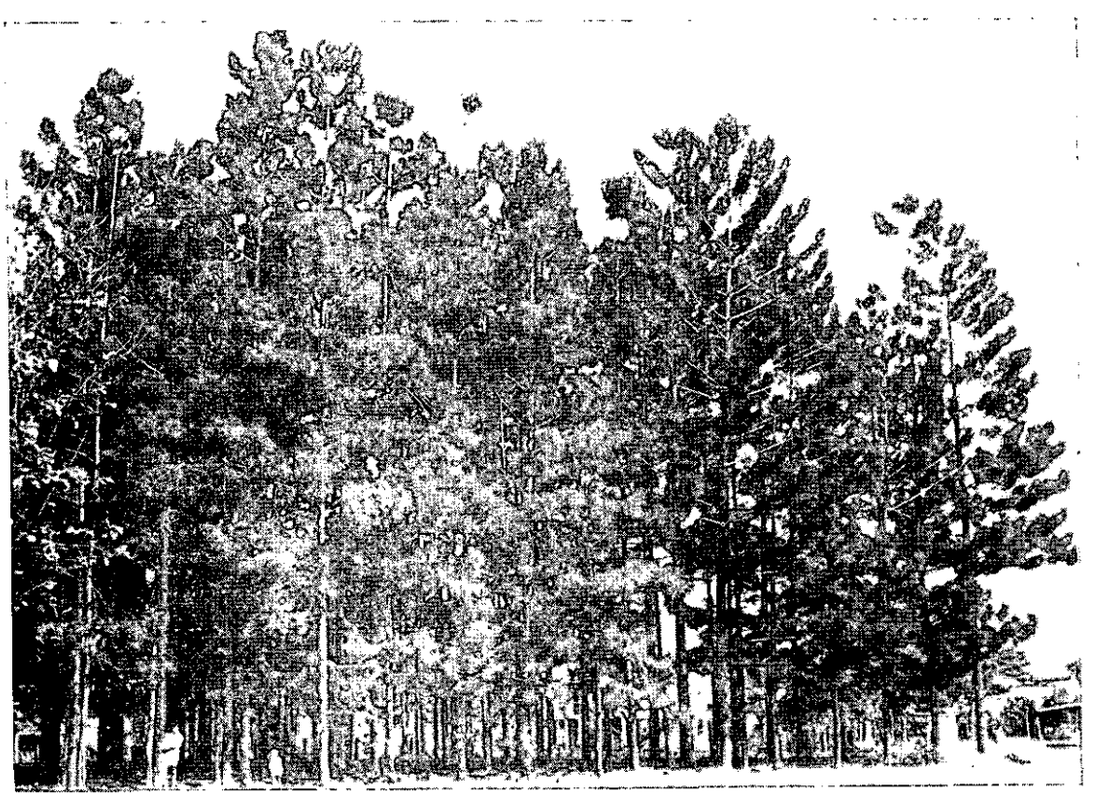


**HOOP PINE PLANTATION BROOLOO STATE FOREST, 34 YEARS OF AGE.**

**The tree in the foreground has been selected for tree breeding.**

**During 1959-60 4,860 acres were planted, bringing the total area of plantations to 92,850 acres.**

**These plantations yielded 27,500,000 super. ft. (Hoppus) of thinnings in 1959-60.**



**HOOP PINE PLANTED IN 1938-39 IN THE FOREST PLOT AT THE TULLY STATE SCHOOL.**

**One of the 341 State School Forest Plots established in Queensland in co-operation with the Department of Education.**

Unmerchantable thinning in young stands of Hoop Pine and exotic pine was carried out over a total of 8,904 acres. Details by districts are as follows:—

| District | Exotic Pine | Hoop Pine | Eucalypts |
|---|---|---|---|
| | Acres | Acres | Acres |
| Maryborough | 1,798 | .. | .. |
| Brisbane | 2,051 | .. | .. |
| Gympie | 1,907 | 949 | 35 |
| Mackay | 584 | .. | .. |
| Warwick | 209 | .. | .. |
| Yarraman | 96 | 920 | .. |
| Murgon | .. | 165 | .. |
| Monto | .. | 187 | .. |
| Atherton | .. | 3 | .. |
| | 6,645 | 2,224 | 35 |

This is a reduction of 2,993 acres on the figure of 11,897 acres for 1958-59 and is largely accounted for by the cessation of unmerchantable thinning in the older stands of the Beerwah-Glasshouse Mountains area.

Hoop Pine areas were relatively free of rat damage during the year, but serious damage occurred in a 5-year-old Hoop Pine area at Reserve 120, Neumgna, and to a small Bunya Pine area planted in 1955-56 at Benarkin.

Two small 1954 plantings of *Pinus radiata* in the Yarraman district suffered severely from *Diplodia pinea,* following a heavy hail storm in December, 1959.

*Regeneration of Natural Forest*

The provision of additional funds, plus favourable weather conditions, made possible the treatment of a total of 26,803 acres of natural forest. Unfortunately, it was not possible to increase the area of tropical rain forest treated and no treatment was possible in the natural Hoop Pine stands of South Queensland.

Details of the acreage of various forest types treated for 1959-60 and for the previous year are as follows:—

| | 1958-59 | 1959-60 |
|---|---|---|
| | Acres | Acres |
| Eucalypt forest | 11,642 | 13,321 |
| Cypress Pine | 11,019 | 12,122 |
| Tropical Rain Forest | 1,722 | 1,360 |
| Natural Hoop Pine | .. | .. |
| | 24,383 | 26,803 |

*Seed Collection and Stocks*

(*a*) *Araucaria cunninghamii.*—No Hoop Pine seed has been collected since December 1957, and on present indications a further collection will not be made before 1962.

L.G.C. values of stocks held in cold storage on 30th June, 1960, were—

| L.G.C.—Per cent. | Amount |
|---|---|
| | lb. |
| –20 | 3,013 |
| 20–30 | 9,711 |
| 30–40 | 14,538 |
| 40–50 | 14,664 |
| 50+ | 6,504 |
| | 48,430 |

(*b*) *Araucaria bidwillii.*—A small collection of 58 lb. 6 oz. was made in January, 1960, for the purpose of fulfilling export orders.

(*c*) *Agathis robusta* and *Agathis palmerstoni.*—Small collections of these species were made at Fraser Island and Cardwell, respectively, with a small amount of *Agathis robusta* collected from plus stems at Imbil.

A total of 27 lb. 3 oz. was exported to overseas countries, mainly as small lots.

## SEED MOVEMENTS, 1959-60

| Species | Intake | | | | Distribution | | | | | | Stock 30-6-60 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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. | lb. oz. |
| *Araucaria bidwillii* | 58 6 | .. | .. | .. | .. | .. | 22 0 | .. | 12 0 | .. | 73 6 |
| *Araucaria cunninghamii* | .. | .. | .. | .. | 3,708 0 | .. | 18 12 | 1 0 | 38 4 | 13 0 | 48,430 0 |
| *Agathis palmerstoni* | 4 15 | .. | .. | .. | .. | .. | 3 | .. | 4 15 | 4 | 17 3 |
| *Agathis robusta* | 21 14 | .. | .. | .. | 7 0 | .. | 2 15 | .. | 22 4 | 4 | 80 2 |
| Eucalyptus species | 94 13 | .. | .. | .. | 5 12 | 6¾ | 14 7½ | 3 3½ | 59 3 | 10 | 132 15 |
| *Pinus caribaea* | 8 | .. | .. | 108 2 | 53 13 | .. | 1 3 | .. | 9 | 11 | 60 2 |
| *Pinus elliottii* | 1,165 0 | .. | .. | .. | 187 14 | .. | 704 1 | 13 0 | 299 1 | 2 4 | 933 8 |
| *Pinus patula* | .. | .. | .. | .. | 5 10½ | .. | 1 2 | .. | 9 1 | 8 | 68 10 |
| *Pinus radiata* | 2 8 | .. | .. | .. | 39 9 | .. | 17 10 | .. | .. | 13 | 89 7 |
| *Pinus taeda* | .. | .. | .. | .. | .. | .. | 3 14 | .. | 6 0 | .. | 518 8 |
| Miscellaneous *Pinus* species | .. | .. | .. | 1 0 | 1 0 | .. | 6 | .. | 4 3 | .. | 55 2½ |
| Miscellaneous species | 189 0 | 6 5 | .. | 7 8 | 9 11 | 56 0 | 61 0 | 1 8 | 83 13 | 1 13 | 747 0 |
| Totals | 1,537 0 | 6 5 | .. | 116 10 | 4,018 5½ | 56 6¾ | 847 9½ | 18 11½ | 539 5 | 20 3 | 51,205 15½ |

(*d*) *Pinus species.*—The total of 1,165 lb. of seed of *Pinus elliottii* collected in March-April in the Beerwah-Beerburrum plantations will be sufficient to supply Departmental requirements for two years and fulfil overseas and local orders.

Of the collection, 260 lb. came from selected seed trees.

L.G.C. values were the highest ever recorded, ranging from 88 per cent. to 97 per cent. for the various batches.

The demand for *Pinus elliottii* seed was higher than in past years, 299 lb. being exported overseas, mainly to Japan, and 704 lb. supplied to private companies and individuals in Australia.

The first batch of locally collected *Pinus caribaea* was established with 8 oz. of seed from the Woree School Plot in North Queensland. L.G.C. of this batch was 78 per cent. Whilst it will be necessary for the Department to rely on imported seed of this species for a number of years to come, a start has been made towards local fulfilment of requirements.

(*e*) *Eucalyptus species and Miscellaneous species.*—A total of 283 lb. 13 oz. was collected by the Department and 223 lb. 3 oz. was exported, mainly to overseas countries.

Revenue received during the year from sale of seed was £1,523.

*Nurseries*

Twenty-four nurseries remained in production during the year and at the end of the financial year 25 nurseries were carrying stock. The increase is due to the establishment of a nursery on Reserve 658, parish of Macartney, in the Mackay district, for the production of planting stock of tubed *Pinus caribaea* sufficient for 100 acres per annum. The first sowing in the new nursery was made in March, 1960, and the use of filter press and infected soil from Reserve 20 ensured the ample mycorrhizal development so necessary for the production of healthy planting stock. Later, the nursery will be enlarged for the production of Hoop Pine stock and provision for this has been made in the present layout.

Of the 25 nurseries now in use, Hoop Pine planting stock is produced by 15, exotic pine planting stock by 8, Eucalypts by 1, whilst 1 at Rocklea is used for the production of planting stock of various species for supply to the public.

Stock on hand at 30th June, 1960, totalled 5,297,000 plants whilst the number of trees planted in plantations totalled 2,934,000.

Hoop Pine nurseries were trouble free and the type of planting stock produced was, generally, satisfactory. Due to the presence of *Phytophora cinnamomi* the exotic pine nursery at Toolara has been abandoned and a new nursery constructed on a site characterised by better soil and drainage and, as far as can be ascertained, free from Phytophora. The nursery at Passchendaele has remained in production on a reduced scale, but the continued infection of nursery stock with Phytophora and Diplodia may force its closure.

As mentioned elsewhere, tubed stock of *Pinus patula* is now produced by the Pechey nursery and an extension of this nursery was necessary to provide stand down space for the tubed stock.

*Sales of Trees*

Sales to the public and to other Government Departments totalled 434,985, an increase of 206,680 on the number sold last year. Of this total, 358,785 were sold for planting in forest formation or equivalent to nearly 600 acres of plantation at a spacing of 9 feet x 8 feet.

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

| By Species | | By Type of Planting | |
|---|---|---|---|
| *Pinus elliottii* | 343,830 | Forest Plots | 358,785 |
| *Pinus taeda* | 801 | Schools | 4,345 |
| *Pinus patula* | 948 | Government Departments | 6,197 |
| *Pinus radiata* | 18,930 | Departmental | 2,390 |
| Hoop Pine | 23,987 | Ornamental, &c. | 63,268 |
| Miscellaneous | 46,489 | | |
| | 434,985 | | 434,985 |

Sales of miscellaneous species ex the Rocklea nursery totalled 41,351, of a cash value of £2,949 5s. 1d. Tubed stock on hand at 30th June, 1960, numbered 15,576.

The value of all sales amounted to £7,700 11s. 5d.

**Silvicultural Research**

*Staff.*—During the year the number of university trained officers engaged full-time on silvicultural research was increased by two and now stands at 13, distributed throughout the State as follows:—North Queensland (4), Mary Valley (1), Beerwah (4), Brisbane Valley (1), Dalby (1), Head Office (2).

The staff engaged on research work in the tropical rain forests of North Queensland was increased by one and a soils analyst was added to the strength of the Beerwah Research Station.

*Field Work.*—(*i.*) *North Queensland.* Staff changes involved some disruption of the work, which consisted mainly in the maintenance, measurement and treatment of existing rain forest experiments, and in the extension of the field covered by treatment around seed trees of the principal cabinet woods of the North. In addition, experiments to determine a tending schedule for regeneration resulting from silvicultural treatment were expanded.

Standard treatment rules provide for brushing and raking immediately prior to seed fall around seed trees of Group "A" species where regeneration of these species is lacking. Experiments aim at determining the intensity of treatment necessary, the distance it should extend from the parent and the follow-up treatment to ensure survival and development of the regeneration secured.

So far Maple, Ash, Silkwood, Red Cedar and Bull Oak have been covered and results have been good.

Experiments on the tending of regeneration are of recent establishment and, whilst they disclose substantial responses to removal of competition of weed species, it is too early to draw general conclusions.

Prior to the building of a glass-house and a lath-house near the office in Atherton (1958), work on the grafting of Maple was carried on under difficulties and with only slight success, principally from bud grafts. Since that time, with the better control permitted by glass- and lath-house facilities, satisfactory takes have been obtained using Terminal Wedge and Side Veneer techniques. Trials have been carried out using scions from 3 parents from R. 310 Gadgarra covering the four seasons of the year over the period October, 1958–April, 1960.

Overall results have been—

| Type of Graft | Take (Per cent.) | |
|---|---|---|
| | Glass-house | Lath-house |
| Terminal Wedge | 54·4 | 61·2 |
| Side Veneer | 63·5 | 46·7 |

Parental influence was observed with a range from 64 per cent. to 44 per cent. in takes. Season had a marked effect with overall takes as follows:—

Spring 38 per cent., Summer 60 per cent., Autumn 53 per cent., Winter 60 per cent.

Unfortunately, in the initial propagation of highly-figured trees, it will not be possible to select the season for grafting since it depends on when such trees are felled in logging. Subsequently, in extending clones of established parents it will be possible to avoid the spring period.

There appears to be no advantage to the glass-house over the lath-house in so far as percentage take is concerned.

(ii.) *Central Coastal Queensland* (*Bowenia*). Planting of trial plots of *Pinus caribaea* commenced at this centre in 1949 and, to date, 3 yield plots have been established in the older plots. Data for these are shown in the following table and they focus attention on the growth potential of this tree:—

| Plot | Location | Age | Stocking | Average G.B.H. | Average Predominant Height | Basal Area per Acre | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | 1960 | M.A.I. | C.A.I. |
| | | | | In. | Ft. | Sq. Ft. | Sq. Ft. | Sq. Ft. |
| 1 | Compartment 4—Stringybark | 8 | 385 | 24·2 | 53·5 | 124·6 | 15·5 | .. |
| 2 | Compartment 9—Stringybark | 8 | 393 | 22·4 | 50 | 108·4 | 13·5 | .. |
| 3 | Compartment 1—Stringybark | 11 | 459 | 23·0 | 53·5 | 134·1 | 12·2 | 19·1 |

All plots were thinned unmerchantably at 4-5 years.

Stand tables show that on the oldest plot (No. 3, 11 years), a merchantable thinning with a minimum girth of 24 inches would be possible now, and this is on a site considered to be not above average for plantable types on R. 20 Maryvale. Plots 1 and 2 represent better quality sites and these will be thinnable on the same standards by age 10 years. As a consequence, the second stage of unmerchantable thinning to 300 per acre has been suspended until such time as thinning experiments resolve the question of its desirability.

The plots involved in the initial thinning experiment (Experiment 55) with Basal Area control were remeasured in June. All plots had been reduced to approximately 400 per acre before establishment of the experiment, and Basal Area increments for the period June, 1959–June, 1960, on 10 plots ranged from 20·0 to 24·5 square feet, with a mean of 22·3 square feet. Standing basal areas ranged from 61·3 square feet to 73·6 square feet, with a mean of 68·2 square feet. It is expected that treatments will be needed next year for the plots which will have basal area controls of 80 square feet and 95 square feet, respectively, and that, for many years, annual thinnings will be necessary to maintain the desired average standing basal areas.

There is a great deal of variation in form and vigour with *Pinus caribaea* and this has encouraged the initiation of a vigorous programme of tree breeding from selected parents.

(iii.) *Southern Queensland.* (*a*) *Tree Breeding—Slash Pine.*—From a total of 1,086 grafts attempted 659 takes resulted, i.e. 60·8 per cent. Scions came from 10 elite trees or from clones derived from these trees. No differences in percentage take were observed between scions from the original parent and those from grafts. 100 of the takes were supplied to A.P.M. as a start for a seed orchard, whilst the remainder were set out at 24 feet x 24 feet spacing in the R. 638 Beerwah seed orchard.

In 1959, and again in 1960, a series of observations was made on the phenology of flowering of the elite trees being used in seed orchard establishment. Data are still being collected, but the following points are of interest and some have practical importance in regard to the part individual parents may play in the seed orchard:—

1. On a Slash Pine tree anthesis and receptivity generally overlap in time. Anthesis usually commences before any flowers are receptive and finishes before the receptive period of female flowers is past.
2. There is a wide tree to tree variation in commencement and duration of flowering such that natural crosses of some parents could not occur.
3. Flower development in a clone corresponds, generally, with that in the parent tree but there is variation between ramets perhaps due to minor site differences, to taking of grafting material from different crown levels in the parent, or to stock influence.

In the Slash Pine seed orchards established with grafted stock from 1953 to 1960 negligible amounts of pollen have been produced. However, useful crops of female flowers have occurred and these have been used for controlled crossings of parents for progeny testing. In the younger orchard planted 1958-60 some 150 cones were so pollinated in 1960.

*Pinus caribaea.*—The first extensive annual plantings of *Pinus caribaea* have now reached the stage where they are sufficiently developed to permit selection of elite trees. The 1954 planting at Bowenia was gone over during the year and yielded two trees of form and vigour sufficiently outstanding to merit their selection. These trees will be kept under observation and, if their future development merits their retention, will be considered in the final sorting out of trees for use in seed orchard establishment. Preliminary selection at an early stage is a distinct advantage, particularly in a species of rapid growth and generally poor form.

Up to now, grafting of *Pinus caribaea* has followed the same technique as with Slash Pine, i.e. bottle grafts on potted stocks in glass-house or in lath-house. During the year promising results were obtained from cleft grafts on stock growing in the field. Preliminary tests carried out in January, April and November, 1959, using scions from young trees 4 to 7 years old on stock planted in the field in January, 1958, gave takes of January, 80 per cent.; April, 20 per cent.; November, 70 per cent. More extensive trials are to be initiated in the coming year. An outstanding feature was the rapid growth of the successful grafts, particularly from the November trial, where growths of up to 37 in. were recorded in 6 months.

*Slash x Pinus caribaea Hybrid.*—After two years in the field, and with an average height of approximately 6 feet, the Hybrid has a 20 per cent. height advantage over both of the species involved. The prospect of hybrid vigour with intermediate stem form makes this cross of particular interest. During the year the cross was repeated and the reciprocal was attempted for the first time in Queensland.

*Pinus radiata.*—During the year further crosses were made involving parents of outstanding health which are considered likely to have some resistance to Diplodia. For a number of years seed of the Guadalupe strain of this species has been sought, as likely to prove of interest to Queensland because of the latitude of its occurrence. Through the good graces of Dr. J. R. McWilliam of the C.S.I.R.O., seed was obtained representative of 15 individual trees on the Island. Stock of each of these is now available for use in a number of localities.

*Hoop Pine.*—Though 1959 was not a year of general and heavy flowering, it was possible to initiate a series of detailed field observations, to be backed by microscopic studies in the laboratory, to study the mechanics of pollination and fertilisation of Hoop Pine. Tests designed to determine the stage of receptivity indicated that it occurred when the scales opened and the cone was about 1 inch in length. This generally confirms earlier observations, but it appears that the period in time may be shorter than the earlier field observations suggested. Chief problems associated with controlled pollination are to find a suitable material for bagging the cones such that overheating and withering of cones are avoided, and also the rapid decline in viability of pollen.

Further progress was made in the matter of the vegetative reproduction of Hoop Pine by the use of "patch" grafts with dormant buds taken from the main stem. Since the last report this method has been extended to grafting in the field. Trials were carried out in September and October, 1959, using bark patches from the leading shoot of trees 30 years in age. Stocks were 3 years in the field and 8 to 9 feet in height. In all, 96 grafts were attempted and a 100 per cent. take secured. As with the field grafting of *Pinus caribaea,* the outstanding feature is the rapid elongation of the scion. Shoots produced are typical leader type, whereas grafts using first order branches retain their branch habit after four years in the field and even if staked.

Preliminary survey has been made of an area for the establishment of the first Hoop Pine seed orchard and a number of parent trees have been chosen as elites for inclusion.

*Kauri Pine.*—Patch grafting in the field, using scions from 22-year-old trees on to stocks three years in the field and about 6 feet in height, was carried out in September and October. Take in the September trial of 16 grafts was 60 per cent. and it was considered that heavy winds were responsible for most of the failures. Development of the graft has been slower than with Hoop Pine but is quite satisfactory.

During the year the first controlled pollinations were attempted with this species and it was observed that on the one tree maturation of male and female flowers occurs at widely separated times.

Wood samples were taken from a number of potential elite trees and quality studies are being conducted by C.S.I.R.O.

(*b*) *Exotic Pines.*—The major work on these species continues to be the maintenance and further treatment of thinning experiments with Slash, Loblolly and Caribbean Pine, but no general revision of results from these experiments has been attempted. It is now 5 years since this was last done and it is proposed to review the position in the near future.

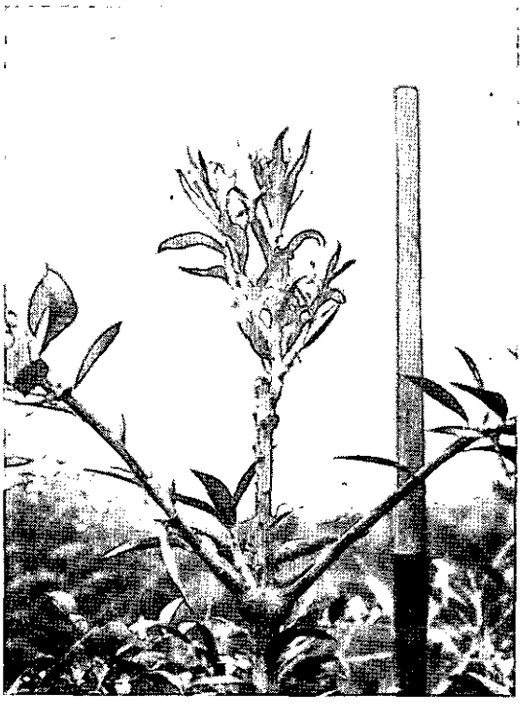
To do this satisfactorily it is necessary to have reliable figures for standing values of trees of different sizes and wood of different qualities. The following figures, obtained for successive measurements of two plots of Slash Pine in a thinning experiment (Experiment 265 North Coast), emphasise this need. The plots were planted in 1948 at a spacing of 8 feet x 8 feet. Plot 1 was thinned unmerchantably at age 6 years to 403 stems per acre, Plot 2 remains at 536 stems per acre.

Area and volume increments for the period 1959-60 were—

| | Plot 1 | Plot 2 |
|---|---|---|
| Basal Area per acre— | | |
| Standing | 113·1 square feet | 129·5 square feet |
| Increment 59–60 | 10·4 square feet | 11·6 square feet |
| Merchantable Volume to 4 in. d.u.b. (under bark) per acre— | | |
| Standing | 1,451 cubic feet | 1,489 cubic feet |
| Increment 59–60 | 308 cubic feet | 337 cubic feet |
| Total Volume under bark per acre— | | |
| Standing | 1,775 cubic feet | 1,957 cubic feet |
| Increment 59–60 | 308 cubic feet | 340 cubic feet |

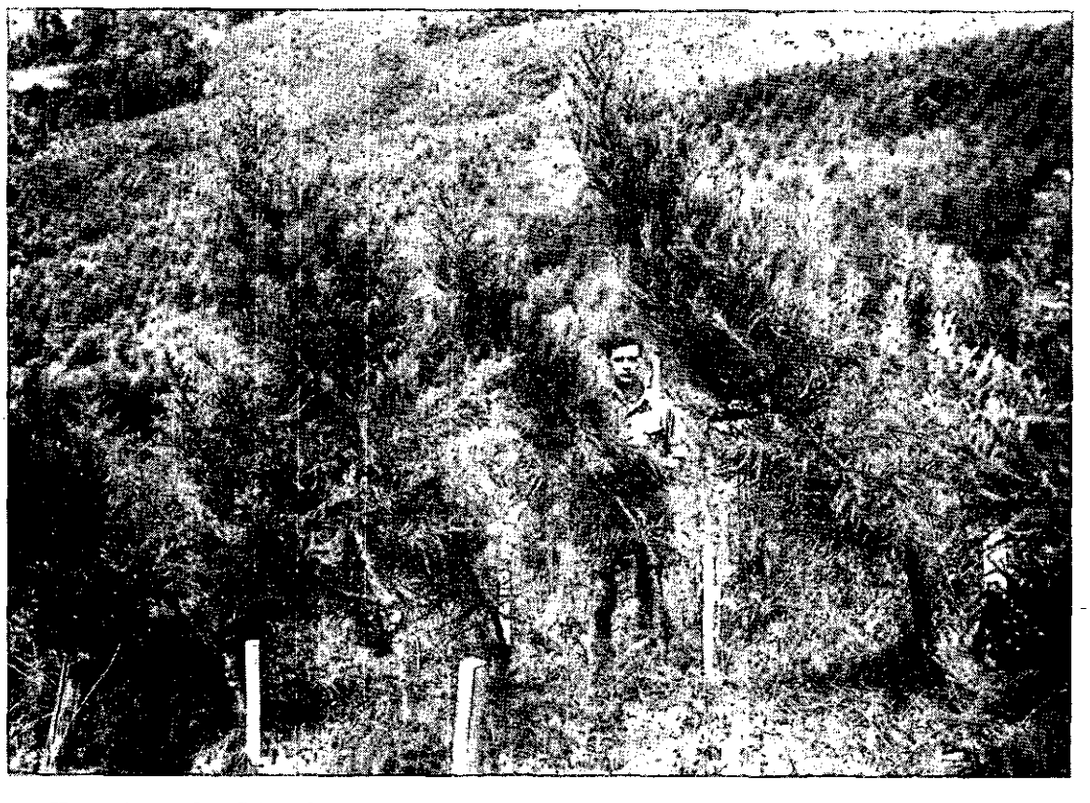
These are frequently the criteria on which an attempt is made to assess thinning experiments and in this case they are inconclusive.

**Bud taken from main stem and grafted on Hoop pine field stock. Grafted October 1959. Stock planted 1956. Length of graft 32 inches. Note normal leader development.**



**Bud taken from main stem and grafted on Kauri pine field stock. Graft struck September 1959. Stock planted 1956.**

**Note normal leader development.**



**Hoop pine grafts. Scions from first order branches. Grafts made on tubed stock and planted 1956. Note maintenance of branch habit despite staking.**

However, when current size values established by mill studies are applied the following figures are obtained:—

| —— | Plot 1 | Plot 2 |
|---|---|---|
| | *s. d.* | *s. d.* |
| Per Acre Standing Value (Stumpage) 1960 .. .. .. .. | 876 0 | 612 0 |
| Value Increment 1959–60 .. .. .. .. .. .. .. | 358 0 | 210 0 |

The advantage of 148s. per acre in value increment makes no allowance for the increased production of clean wood on the pruned section of the high pruned select stems, nor for the better average form of the thinned plot. Nevertheless, it provides a yardstick for measurement which permits a clear answer to be given.

The oldest thinning experiment in *Pinus caribaea* is 10 years from planting at June, 1960. It is located on Compartment 21, Six Mile Logging Area, R. 638 Beerwah, and was commenced in 1955 with treatments as follow:—

Unthinned—Plots 1 and 2, approximately 560 per acre.

Thinned 1955—Plots 3 and 6, approximately 435 per acre.

Thinned 1955—Plots 4 and 5, approximately 340 per acre.

Pertinent figures following 1960 measure are—

| Plot | Stocking | Select Stems | | | | | | Whole Stand | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Average G.B.H. | | | Basal Area per Acre | | | Basal Area per Acre | | |
| | | 1960 | Increment 1959–60 | Increment 1957–60 | 1960 | Increment 1959–60 | Increment 1957–60 | 1960 | Increment 1959–60 | Increment 1957–60 |
| | | In. | In. | In. | Sq. Ft. | Sq. Ft. | Sq. Ft. | Sq. Ft. | Sq. Ft. | Sq. Ft. |
| 1 .. | 572 | 23·29 | 1·62 | 5·35 | 47·7 | 6·4 | 19·4 | 146·0 | 20·4 | 58·4 |
| 2 .. | 553 | 23·40 | 1·65 | 5·13 | 49·2 | 6·7 | 19·2 | 146·5 | 20·5 | 56·6 |
| Mean .. | 562 | 23·35 | 1·64 | 5·24 | 48·4 | 6·6 | 19·3 | 146·3 | 20·5 | 57·5 |
| 3 .. | 439 | 24·00 | 1·77 | 5·57 | 51·2 | 7·3 | 21·0 | 132·5 | 19·2 | 53·8 |
| 6 .. | 429 | 24·00 | 1·82 | 5·66 | 50·1 | 7·3 | 20·8 | 122·6 | 18·6 | 51·4 |
| Mean .. | 434 | 24·00 | 1·80 | 5·62 | 50·7 | 7·3 | 20·9 | 127·6 | 18·9 | 52·6 |
| 4 .. | 339 | 24·68 | 1·90 | 6·03 | 54·0 | 8·0 | 23·2 | 113·4 | 17·2 | 49·2 |
| 5 .. | 344 | 25·92 | 2·06 | 6·47 | 59·5 | 9·1 | 26·0 | 118·1 | 18·2 | 51·8 |
| Mean .. | 342 | 25·30 | 1·98 | 6·25 | 56·8 | 8·6 | 24·6 | 115·8 | 17·7 | 50·5 |

Average Predominant Height 1960—52·5 feet.

Growth rates in this experiment are comparable with those for Plot 3, Compartment 1, Stringybark Logging Area, at Bowenia, and merchantable thinning with a minimum girth of 24 inches will be possible next year.

Difficulties in obtaining supplies of cowyard manure led to experiments being established in 1954 using Filter press (by-product of sugar industry) against cowyard manure. Annual sowings have been made over a period of 6 years and the experiments have now been terminated. They showed that at equivalent rates of application (10 to 30 tons per acre) Filter Press gives comparable results to those from cow manure and it has the advantage of introducing no weed problems. It has the disadvantage of being expensive to transport and care is necessary to ensure that the pH of the press is less than 7.

Pot experiments conducted in the plant house on the control of damping off with Slash Pine seedlings gave promising results from organic fungicides applied as post-germination drenches. Further experiments have been established in the nursery beds but results are not yet available.

Annually since 1954, experiments have been established to indicate the best procedure to be followed if an unfavourable winter prevents completion of planting of Slash Pine before the end of winter (August). Months covered each year have been September, October, November and December with planting as close to the 15th as convenient. Treatments involved—

(*a*) Lifting and Heeling in.

(*b*) Wrenching in situ.

(*c*) Control.

Consistently, lifting and heeling in has given the best results and survival figures for this treatment have been—

| Month | Survival (Per cent.) | | | | | |
|---|---|---|---|---|---|---|
| | 1954 | 1955 | 1956 | 1957 | 1958 | 1959 |
| September .. .. .. | 99 | 98 | 86 | 92 | 100 | 96 |
| October .. .. .. .. | 97 | 97 | 92 | 57 | 89 | 97 |
| November .. .. .. | 99 | 76 | 50 | 51 | 100 | 88 |
| December .. .. .. | 91 | 100 | 90 | 77 | 100 | 76 |

Trials with 2,4,5–T ester in water (1 per cent. solution) as a foliar spray continue to show promise in the control of Eucalypt, Angophora and Wattle regrowth on plantation firelines. After two or three hormone treatments these species can be eliminated and the break converted to grass.

The experiments in the control of eucalypt coppice in plantations by pre-planting aerial spraying with 2,4,5–T continue to show excellent results, but the economics of this type of treatment are not yet clear. In the 1958 treatments, the generally scattered survivors have now reached a size such that an effective cut stump treatment with 2,4,5–T can be carried out. Thus it may be possible to achieve virtually complete control of wattle and eucalypt coppice in plantation areas with two chemical treatments. The areas treated in 1959 show excellent control of coppice with no obvious differences between treatments at this stage.

No further aerial spraying was carried out this year, pending the availability of more definite results from established experiments.

Glasshouse investigations on the nutrition of *Pinus taeda, Pinus caribaea,* Hoop and Kauri Pines were continued. The nitrogen-phosphorus interaction reported last year in pot experiments has now been clearly shown in a number of field experiments designed to test the effect of cultivation, Ammonium sulphate, Sodium dihydrogen phosphate and other fertilisers. Analysis of first year increments showed the effect of cultivation and cultivation x phosphorus interaction to be highly significant. Phosphorus in the absence of cultivation gave no response and this shows that it is the interaction which is responsible for the effect. Cultivation, however, increased growth with or without addition of phosphorus. Other experiments involving chipped and cultivated plots have shown that only part of this response can be attributed to removal of competition from grass, &c., and there is evidence that the effect is due primarily to promoting the mineralisation of soil nitrogen.

A significant N x P interaction was also found and the following figures are for an experiment designed to study this interaction. This trial was a 4 x 3 factorial combination of superphosphate and urea, laid out in randomised blocks on a site which had been rotary-hoed before planting. The superphosphate treatments were $P_0$ = nil, $P_2$ = 2, $P_4$ = 4, $P_8$ = 8 cwt. per acre. The urea treatments were $N_0$ = nil, $N_1$ = 1, $N_2$ = 2 cwt. per acre applied four times during the growing season, i.e. $N_1$ = 4 cwt. per acre, $N_2$ = 8 cwt. per acre. The effect of these treatments on the height increment of Loblolly Pine during its first year in the field is shown in the following table (figures are means of 3 plots in inches):—

| Treatment | $N_0$ | $N_1$ | $N_2$ |
|---|---|---|---|
| $P_0$ | 26·6 | 30·0 | 29·6 |
| $P_2$ | 28·5 | 42·4 | 39·4 |
| $P_4$ | 30·3 | 42·4 | 42·4 |
| $P_8$ | 28·7 | 43·7 | 43·6 |

From examination of the table it will be seen that there was little or no response to either urea or superphosphate when these fertilisers were applied alone, but there was a marked response when both were added together.

(*c*) *Hoop and Kauri Pine.*—At both Imbil and Yarraman the major part of the work is the maintenance and measurement of thinning experiments of long standing. Annual measurement is favoured because it permits examination of the influence of factors such as stocking and standing basal area which can be controlled, on growth under different seasonal conditions. Results from these experiments show that routine prescriptions do not need serious adjustment and a general revision of the position will not be undertaken for some years.

In south-east Queensland successful open plantations have been established only on areas which originally carried rain forest with Hoop Pine as a component member. There is insufficient land of this type available for planting to provide for the softwood requirements of the State, and exotics (Slash Pine chiefly) are planted on poor soils on the coastal plain which originally supported inferior open forest of Eucalypts. The wood of the native conifers, Hoop and Kauri Pine, is markedly superior to that of the exotic pines for general softwood and plywood purposes. The climate of coastal south-east Queensland is suitable for their growth and they occur naturally in that region on soils which apparently have no advantages over the better types on which Slash Pine is planted. However, on these types open plantings of the native species have failed whilst underplantings with overwood of Slash or Loblolly Pine have shown healthy, if slow, growth. The following figures are for a planting of Hoop and Kauri in March, 1956, under a stand of Slash Pine planted 8 feet x 8 feet in 1932 and reduced by three merchantable thinnings to select high pruned trees only (160 per acre). July 1960 data are—

| | Underplanting | | Overwood |
|---|---|---|---|
| Species .. .. .. .. .. .. | Hoop Pine | Kauri Pine | Slash Pine |
| Stems per acre .. .. .. .. .. | 485 | 480 | 160 |
| Tallest stem .. .. .. .. .. | 88 inches | 139 inches | .. |
| Average height .. .. .. .. .. | 54 inches | 77 inches | 81 feet |
| Average G.B.H. .. .. .. .. .. | .. | .. | 36 inches |
| Height increment 1959–60 .. .. .. | 24 inches | 39 inches | .. |
| Basal Area per acre .. .. .. .. | .. | .. | 111 square feet |

Small open plantings of Hoop and Kauri in a number of centres surrounded by plantings of Slash Pine are beginning to show a marked improvement in health and in growth along the edges of the Slash in about the 6th year from planting. This suggests that the earliest time for underplanting could be following unmerchantable thinning to 300 per acre, which normally is done at age 6 to 7 years.

These observations, supported by those of fertiliser experiments involving Nitrogen, suggest that there may be a build up in the N content of soil under Slash and Loblolly Pines.

Revision of the Hoop Pine volume table for the Brisbane Valley was completed during the year, using electronic data processing. Prior to processing, all sample tree data were critically examined and additional trees measured as required. Tables were prepared for total volume, merchantable volume to 4 in. d.u.b. and 6 in. d.u.b., and volume in pruned section, using both predominant height and height of individual trees as variables. Preliminary work for the Mary Valley data is well advanced, and the revised tables for this district should be available in the near future.

Apart from greater speed and accuracy in the production of volume tables, there are other advantages in having sample tree data on punch cards to permit electronic processing. During the year, further work was carried out on the Brisbane Valley data with a view to developing equations to represent tree form. This will be useful in a number of fields, and it is hoped that eventually similar studies can be undertaken with all major plantation species.

(*d*) *Coastal Hardwoods.*—Eight annual prescribed burns have now been carried out in the experiment at R. 958 Gundiah. Following the poor burn in 1958, the 1959 burn was quite satisfactory, 77 per cent. of the compartment being covered.

No further operations were carried out in the experiment at R. 57 St. Mary, which is now undergoing a period of protection to allow regeneration to develop.

Girth increments in the two experiments for 1959-60, and since their inception in 1952 were—

| Species | Average Annual G.B.H. Increment—Inches | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | R. 958 Gundiah | | | | R. 57 St. Mary | | | |
| | Unburnt | | Burnt | | Unburnt | | Burnt | |
| | 1959–60 | 1952–60 | 1959–60 | 1952–60 | 1959–60 | 1952–60 | 1959–60 | 1952–60 |
| Spotted Gum .. | 0·33 | 0·29 | 0·33 | 0·34 | 0·59 | 0·29 | 0·76 | 0·56 |
| Grey Ironbark .. | 0·32 | 0·46 | 0·32 | 0·57 | 0·69 | 0·52 | 0·66 | 0·78 |
| Red Ironbark .. | 0·50 | 0·70 | 0·36 | 0·51 | 0·36 | 0·53 | 0·71 | 0·75 |

Increments over the past year have, in general, been similar on both burnt and unburnt areas, with no indication of the usual trend favouring burning. The development of regeneration is of prime importance in determining the practicability of prescribed burning as a management procedure, and in this regard the fate of the Spotted Gum seedlings resulting from the 1958 seedfall at R. 958 Gundiah, is of interest. After burns in 1958 and 1959 survival is now only 2 per cent. of the number originally present, while in adjacent unburnt areas 34 per cent. of the seedlings are still present. It is clear that a period of protection is necessary to permit seedlings to reach a size such that they will have a good chance of escaping fire damage. Sufficient seedlings are now present to enable this period to be determined.

In 1938, two 1-acre plots were established in a stand of Blackbutt at R. 318 Maroochy, consisting of regeneration dating from a fire in 1926, together with larger stems, which had been given routine silvicultural treatment in 1928 and 1932. The results of the 1959 remeasure are briefly summarised below.

| | Plot 1 | Plot 3 |
|---|---|---|
| Stems per acre 1959 .. .. .. .. .. .. | 143 | 83 |
| Average G.B.H. (from Basal Area) inches 1959 .. .. .. | 41·38 | 44·31 |
| Average annual increment—1957-59 .. .. .. | 0·60 | 0·76 |
| 1938-59 .. .. .. | 0·86 | 0·92 |
| Basal Area per acre (square feet) Standing 1959 .. .. | 135·3 | 90·4 |
| Average annual increment—1957-59 gross .. .. | 3·9 | 3·1 |
| net .. .. .. | 3·6 | 3·1 |
| 1938-59 gross .. .. | 4·6 | 3·2 |
| net .. .. .. | 4·4 | 2·6 |
| Gross merchantable volume per acre 24 in. + (super. feet hoppus) Standing 1959 .. .. .. .. .. | 33,460 | 22,990 |
| Average annual increment—1957-59 gross .. .. | 1,284 | 984 |
| net .. .. .. | 1,284 | 984 |
| 1938-59 gross .. .. | 1,447 | 998 |
| net .. .. .. | 1,416 | 868 |

These figures provide an indication of the increments which can be expected from fully stocked Blackbutt stands on good sites. It should be noted that, apart from the early treatments to liberate and space the regeneration and remove useless stems, no further silvicultural treatment has been necessary.

The use of stem injections of 2,4,5–T for the removal of unwanted trees in the silvicultural treatment of Blackbutt forests has proved very successful on an experimental scale over the past two years, even with the more difficult species such as Turpentine and Brush Box. A large-scale cost trial embodying this technique will be established in the near future.

(iv.) *South-West Queensland.* Following remeasurement of all thinning plots during 1958-59, the principal work during the 1959-60 period has been the establishment and remeasurement of Detailed Yield Plots throughout the Cypress Pine, Spotted Gum and Narrow Leaf Ironbark forests.

These one-acre plots, laid down on a variety of soil and vegetational types, have been established to trace the complete history and development of our natural forests by providing detailed data on the growth of the forest as a whole, and of individual stems. They will permit analysis of the following data:—

(i.) Girth increments by size classes and crown classes for all commercial species.

(ii.) The relationship of standing Basal Area and Volume with increment over a wide variety of forest types and stocking.

(iii.) The analysis and determination of site quality classes.

(iv.) The effects of logging, silvicultural treatment, fire and protection.

(v.) The determination of a tree classification, based principally on crown and vigour classes, for use in tree-marking operations.

(vi.) The detailed study of the regeneration requirements of all commercial species, in regard to the effects of site, light, soil, moisture and existing stand conditions on regeneration.

To date, 121 Detailed Yield Plots have been laid down in the Dalby district. Of these, 53 plots have been established for a period of 20 years or more, with remeasurements at intervals of 3–4 years. The remaining plots were established at varying periods between 1954 and 1959 and first remeasurement of these plots will be completed during 1960.

During the past year techniques for dealing with the extraction of data from these plots have been revised and, with the provision of additional clerical staff, it is anticipated that the initial summaries of growth data for each major reserve will be available in the very near future.

In any regeneration programme a knowledge of the seeding habits of the commercial species is essential. Past research in this district has established the flowering and fruiting cycles of Narrow Leaf Ironbark (*Eucalyptus crebra*) and Spotted Gum (*Eucalyptus maculata*). More recent work has been concentrated on Cypress Pine (*Callitris glauca*), and it has been determined for this species that general seed years occur on the average every 2–3 years, dependent on seasonal variations, with the flowering and fruiting cycle for any particular crop as follows:—

| | |
|---|---|
| Male Amenta | Commence development 6-7 months before pollination. |
| Pollen Flow | Normally September and October, and of 4-6 weeks duration. |
| Immature Cones | For a further 12 months after pollination. |
| Mature Cones and Seedfall | For a further 3 months, with general months being November and December. |

Hence for any particular crop the total time from the development of male amenta to the completion of seedfall is 23–24 months.

To obtain further information on the duration and quantity of seedfall six seed-traps (each 10 square feet in unit area) were established in November, 1959, in good quality Cypress Pine stands on R. 58 Gideon as follows:—

Traps 1 and 2—Unburnt areas.

Traps 3 and 4—Light to moderate burn November 1957.

Traps 5 and 6—Severe burn November 1957.

Collections of seed are continuing but number of seed collected in each trap to June, 1960, was:—

| Seed Trap | November 1959 | December 1959 | January 1960 | February 1960 | March–June 1960 | Total |
|---|---|---|---|---|---|---|
| 1 | 108 (60) | 248 (98) | 26 (12) | 31 (13) | 8 (4) | 421 (187) |
| 2 | 186 (74) | 271 (108) | 53 (19) | 58 (25) | 9 (1) | 577 (227) |
| 3 | 23 (7) | 25 (11) | 4 (1) | 2 (–) | 1 (–) | 55 (19) |
| 4 | 52 (17) | 74 (18) | 7 (2) | 16 (2) | 40 (2) | 189 (41) |
| All Traps | 369 (158) | 618 (235) | 90 (34) | 107 (40) | 58 (7) | 1,242 (474) |

(Number of viable seed determined by cutting tests in brackets.)

No seed was collected in the severely burnt areas and field inspection indicated that crown recovery was slow on the trees surviving and no cones had been produced.

For Traps 1-4 79·5 per cent. of all seed and 82·9 per cent. of viable seed fell during November and December, and further dissection of weekly collections indicated that the peak period of seedfall was between 26th November and 17th December, 1959. It is expected that only insignificant quantities of seed will still fall.

Number of seed fallen per acre to date is—

| Seed Trap No. | Total No. per Acre | Viable No. per Acre | Viable |
|---|---|---|---|
| | | | Per cent. |
| 1 | 1,833,876 | 814,572 | 44·4 |
| 2 | 2,513,412 | 988,812 | 39·3 |
| 3 | 239,580 | 82,764 | 34·5 |
| 4 | 823,284 | 178,596 | 21·7 |
| Mean | 1,352,612 | 516,186 | 38·2 |

These figures are representative of a heavy and general seedfall and this experiment will continue over several years to determine yearly variations in the amount of seed produced.

**Protection**

At the 30th June the total area of State Forest in Queensland was 5,118,483 acres. Of this, an area of 1,667,500 acres has been intensively protected by standard systems of firelines and/or fire roads.

Table "A" shows the construction and maintenance work carried out on this protection system during the year.

TABLE "A"

CLEARED BREAKS—PLANTATIONS

| | Miles |
|---|---|
| Construction— | |
| Temporary Breaks | 77·1 |
| Clear | 87·2 |
| Rotary Hoe | 10·8 |
| Grade | 42·1 |
| Scrub Break Improvements | 130·6 |
| Maintenance— | |
| Chip | 98·7 |
| Burn | 296·5 |
| Rotary Hoe | 463·4 |
| Grade | 1,301·8 |

CLEARED BREAKS—WESTERN FORESTS

| | |
|---|---|
| Construction— | |
| Cut and Grub | 167·1 |
| Improvements— | |
| Grub Roads | 41·8 |
| Grade | 353·6 |
| Green Strips | 134·3 |
| Maintenance— | |
| Sucker and Burn | 301·7 |
| Grade | 1,126·8 |
| Rotary Hoe | 602·6 |

GREEN BREAKS—COASTAL HARDWOOD AREAS

| | |
|---|---|
| Construction— | |
| Fall Dangerous Trees | 35·1 |
| Stack and Burn | 10·7 |
| Improvements | 48·7 |
| Roads | 70·0 |

Maintenance—

| | |
|---|---|
| Chip and/or Plough | 858·1 |
| Burn | 716·9 |
| Roads | 525·8 |
| Grade | 363·0 |

Construction of firelines and fire roads cost £96,576 and a further sum of £122,204 was expended on maintenance of the system.

Detention of personnel at week-ends and on public holidays, observation, patrol, detection and fire-fighting cost a further £28,437.

Costs of this last item in recent years have been—

| | £ |
|---|---|
| 1957-58 | 128,607 |
| 1958-59 | 35,855 |
| 1959-60 | 28,437 |

These figures are a reflection of the fire season, which has been atypical in that the usual October-November peak of fire occurrence was absent.

Tables "B," "C," "D" and "E," illustrate the pattern of fire occurrence and control (with reference to Forest Reservations only). Statistics are at present recorded only for fires on or menacing Forest Reserves and against which Departmental suppression action has been taken.

TABLE "B"

AREAS OF FOREST RESERVES BURNT BY FIRES ORIGINATING ON OR ENTERING INTO RESERVES ON WHICH THERE IS SOME DEGREE OF PROTECTION

| Type of Forest | Degree of Protection | | Total Area Burnt |
|---|---|---|---|
| | Intensive | Extensive | |
| | Acres | Acres | Acres |
| Plantations | 20 | .. | 20 |
| High Quality | 2,093 | .. | 2,093 |
| Low Quality | 879 | 400 | 1,279 |
| Waste Areas | 1,447 | 350 | 1,797 |
| Total Area Burnt | 4,439 | 750 | 5,189 |
| Burnt Area as Percentage of Acres Protected by Firelines | 0·27 | .. | 0·31 |

The burnt area of "intensively protected" forest is larger than might be expected, due to the alteration in definition of intensive and extensive protection.

In previous years forests have been regarded as "intensively protected" only when completely surrounded by a standard system of firelines and fire roads providing ready access for men and vehicles.

The amended definitions, following the Healesville Forest Fire Control Conference of 1959, are—

Intensive Protection—Area covered by an organised detection system; initial attack commenced within two hours of detection.

Extensive Protection—Area may or may not be covered by an organised protection system; initial attack not normally commenced within two hours of detection.

Unprotected—No organised detection system; initial attack may be delayed for some considerable period, or in some cases fires may be allowed to burn unchecked.

Most of the Queensland forests previously classed as "extensively protected" would now be considered as "intensively protected".

A decision to suppress a fire in an "unprotected" area would be made with regard to the time of the year, the development of the fire season and the likelihood of damage to State Forests.

TABLE "C"

CAUSES OF FIRES ATTACKED ON OR NEAR FOREST RESERVES

| Cause | Number of Fires | Percentage of Total |
|---|---|---|
| (*a*) Burning off—with Permit | 5 | 13·2 |
| (*b*) Burning off—without Permit | 15 | 39·5 |
| (*c*) *Smokers, Tourists, Travellers | 10 | 26·3 |
| (*d*) Lightning | 2 | 5·3 |
| (*e*) Trains, Railway burning | 1 | 2·6 |
| (*f*) Industrial Operations—Mills, Logging | .. | .. |
| (*g*) Cars, Tractors, Mechanical Equipment | .. | .. |
| (*h*) Restarts from previous fires | 1 | 2·6 |
| (*i*) Miscellaneous Known Causes | 1 | 2·6 |
| (*j*) Unknown | 3 | 7·9 |
| | 38 | .. |

* (*c*) Includes several night time or early morning fires on Reserves near the Metropolitan boundaries.

A reduction in the number of fire causes listed as "unknown" is noteworthy. This is due partly to the much easier fire load in each district and partly to the inclusion of "most probable" causes under the appropriate heading. Absolute proof of cause is difficult in many cases.

The number of lightning fires is greatly reduced in comparison with the 1957-58 figure. This is partly due to a lower heat thunderstorm incidence in November and December, but is mainly due to much higher fuel moisture at this time of the year in comparison with the normal year, with consequent lower danger of ignition.

There were two fires in young pine plantations during the year, one, of eight acres, in *Pinus elliottii* in the Maryborough district in December, as the result of a lightning strike and the other of twelve acres, in *Pinus echinata, Pinus elliottii* and *Pinus patula* near Gatton. The second fire occurred as a jump-over from burning operations on an external fireline adjacent to the plantation.

Recovery of the *Pinus elliottii* is in excess of 99 per cent. at Maryborough, but will be much lower at Gatton due to a greater percentage of crown consumption by flames.

TABLE "D"

SIZES REACHED BY FIRES ORIGINATING ON OR ENTERING FOREST RESERVES

| Size of Fire* | Total | Percentage |
|---|---|---|
| Acres | | |
| 0–10 | 12 | 37·5 |
| 11–100 | 12 | 37·5 |
| 101–1,000 | 6 | 18·7 |
| 1,001–10,000 | 2 | 6·3 |
| 10,000+ | .. | .. |
| | 32 | .. |

* Total size attained by fire, including the areas shown in Table " B " and adjacent Crown Land and private property.

TABLE "E"

MONTHLY FIRE OCCURRENCE (ALL FORESTRY DISTRICTS)

| Month | Total | Percentage |
|---|---|---|
| July | .. | .. |
| August | 12 | 31·6 |
| September | 5 | 13·2 |
| October | 6 | 15·8 |
| November | 1 | 2·6 |
| December | 2 | 5·3 |
| January | 1 | 2·6 |
| February | .. | .. |
| March | 1 | 2·6 |
| April | 3 | 7·9 |
| May | 3 | 7·9 |
| June | 4 | 10·5 |
| | 38 | .. |

The maximum number of fires, 12, occurred on eleven different days during August and unseasonal rains then delayed the development of the normal October-November fires. A feature of note is the recording of fires during March, April, May and June in 1960.

This altered pattern is due to the unusual spring and early summer rains, followed by the comparative absence of the January-March wet season. In many areas the 1960 rainfall has been less than 60 per cent. of the normal

As a result of the wet spring there is a considerable body of grass in most forest areas and this is now in a much drier condition than is normal in early winter. Frosts have contributed to the drying out of fuel.

An area of 10,355 acres has been treated with prescribed burns as a hazard reduction measure. These burns have been restricted mainly to the Spotted Gum—Ironbark types. Further work is necessary before the degree to which such procedure can be expanded on other types is known.

Preliminary plans have been prepared and initial quotes have been obtained for heavy and light duty fire tankers and for additional "slip-on" first attack units for use with four-wheel drive vehicles.

It is hoped to increase, markedly, the proportion of four-wheel drive vehicles in the fleet to allow greater mobility in the coastal hill areas and in the sandy cypress pine country of Western Queensland.

New equipment is necessary to reinforce the existing range of slip-on tank units, which have rendered yeoman service in recent years in all districts.

Diesel equipment is preferred for fire units, particularly from the safety viewpoint.

Fire Weather Forecasts have been obtained regularly from the Bureau of Meteorology, whose officers utilise readings from twenty observing stations operated by this Department. Studies on the occurrence of sea breezes and on the weather associated with successful plantation site burns are continuing. It is hoped to further correlate ground burning conditions with upper air factors. The assistance and co-operation of the Bureau is acknowledged and appreciated.

**Capital Improvements**

Amounts of £32,500 and £43,900 were expended on the maintenance and construction, respectively, of capital improvements.

The construction items are listed below. The major items were those involved in forest station establishment at the new plantation centres referred to above.

Extension of the forest research centre at Beerwah was made by the addition of two cottages, while a start was made on the construction of a new soils laboratory.

Items on which construction funds were expended were—

| Item | No. | |
|---|---|---|
| Married Quarters (permanent) | 15 | |
| Married Quarters (portable) | 18 | |
| Cottages | 3 | |
| Barracks— | | |
| 6 man | 3 | |
| 4 man | 1 | |
| Galley-Showers-Laundry | 5 | |
| Office-Garage-Storeroom | 4 | |
| Fire Lookout Towers | 3 | |
| Grafting house (Research) | 1 | |
| Bridges | 4 | |
| Grids | 22 | |
| Telephone | 31 | miles |

**Expenditure and Labour**

The total expenditure for the year on reforestation works was £1,529,809, details of which appear in Appendix H. The major headings were—

| | £ |
|---|---|
| Plantations | 376,143 |
| Natural Regeneration | 46,588 |
| Nursery Expenses | 46,193 |
| Research | 31,737 |
| Surveys | 14,094 |
| Protection | 266,029 |
| Capital Improvements | 76,461 |
| Stores, Supervision, &c. | 304,123 |
| Wet Time, Holidays, Leave | 168,823 |
| Cartage of Rations | 14,179 |
| Camping Allowance | 109,968 |
| Pay-roll Tax | 29,300 |
| Workers' Compensation | 31,433 |
| Seed Collection and Storage | 2,101 |
| Miscellaneous | 12,637 |
| | £1,529,809 |

The number of wages employees engaged on reforestation works at 30th June, 1960, was 1,419. This is 112 more than on 30th June, 1959, but the average monthly employment of 1,372 was only 42 above the previous year's figures.

**Plant**

The use of machines in the Department's programme is steadily increasing, as new types of machines become available and methods are changed to obtain greater efficiency. There are still many areas to be made accessible for the extraction of timber, the fire protection network to be extended and improved, and also additional access roads built to serve the new plantations.

The expansion of the Department's fleet of earthmoving machines and other plant was inadequate to keep pace with requirements.

The additional equipment purchased for the year was two light maintenance graders, three tilt bed trailers for transporting the earthmoving machines, two lightweight rock drills, one light four-wheel drive vehicle for *Harrisia Cactus* eradication in the Dalby district, and one light utility for the use of the National Parks Ranger.

Replacement machines purchased were two medium dozers, two small dozer-loaders and thirty-five vehicles.

In the repair of machines, more repairs are being done by the district mechanics; this is reducing down time due to repairs and is also saving the freight cost of bringing the machines into a major repair centre. Unfortunately, there is still insufficient personnel engaged in repair work and in the supervision of plant generally.

Considerable savings have been made in reclaiming tracks and track rollers of the crawler machines and also in reclaiming the tyres of the wheeled machines. Some of the tyres have been especially rebuilt to meet the Department's requirements. Quite a good measure of success has been obtained from all the parts reclaimed.

It is hoped that there will be sufficient funds available in the future to increase plant to meet fully the Department's requirements.

Expenditure for financial year 1959-60—Maintenance of Plant £184,999, Purchase of Plant £94,129.

A census of plant as at 30th June, 1960, was—

| | Disposals | Purchases | Number at 30th June, 1960 |
|---|---|---|---|
| Trucks— | | | |
| Capacity— | | | |
| Under 1 ton | 18 | 21 | 187 |
| 1–2 tons | 3 | .. | 4 |
| 2 tons | 12 | .. | 100 |
| 3–4 tons | 1 | 13 | 17 |
| 5–6 tons | 2 | 3 | 14 |
| Total | 36 | 37 | 322 |
| Tractors (D.B.H.P.)— | | | |
| (*a*) Track Type— | | | |
| Up to 50 h.p. with dozer | 1 | 2 | 4 |
| 50 h.p. without dozer | .. | .. | 23 |
| 50–100 h.p. with dozer | 2 | 2 | 25 |
| 100 h.p. with dozer | .. | .. | 5 |
| (*b*) Wheel Type (End Loaders, Rotary Hoes, &c.) | .. | .. | 44 |
| Total | 3 | 4 | 101 |
| Graders— | | | |
| Drawn | .. | 1 | 25 |
| Powered to 40 h.p. | .. | .. | 9 |
| 40–80 h.p. | .. | 2 | 6 |
| 80–100 h.p. | .. | .. | 6 |
| 100 h.p. | .. | .. | 3 |
| Total | .. | 3 | 49 |
| Road Compressors | .. | .. | 12 |
| Rippers | .. | .. | 23 |
| Rotary Hoes | .. | .. | 37 |
| Fire Slip On Tank Type Units | .. | .. | 72 |
| Fire Tank Units (various types) | .. | .. | 27 |
| Water Tank Trailers (324 gallons) | .. | .. | 40 |
| Road Rollers | .. | .. | 6 |
| Road Scoops | .. | .. | 18 |
| End Loaders | .. | .. | 8 |
| Light weight Rock Drills | .. | 2 | 2 |

## ACQUISITION OF LAND

During the year 1959-60 an amount of £9,820 12s. 2d. was expended on the acquisition of land for Forestry purposes as follows:—

| | £ | *s.* | *d.* |
|---|---|---|---|
| Purchase of land | 65 | 10 | 0 |
| Compensation paid for resumptions | 8,544 | 18 | 3 |
| Survey and Real Property fees | 704 | 1 | 11 |
| Compensation paid for improvements on a surrendered Grazing Homestead | 220 | 0 | 0 |
| Miscellaneous | 298 | 12 | 0 |
| | £9,833 | 2 | 2 |
| *Less* amount recovered by disposal of improvements in acquired areas | 12 | 10 | 0 |
| | £9,820 | 12 | 2 |

The expenditure of £65 10s. 0d. represents purchase of a property of 13 acres 2 roods 18 perches adjoining State Forest Reserve 638, parish of Beerwah, whilst the amount of £8,544 18s. 3d., expended by way of compensation for resumptions, is in respect of three properties, totalling 396 acres 3 roods 4 perches, resumed previously for Forestry purposes and now proclaimed State Forest.

## FOREST SURVEYS

Nineteen camps operated during the year, of which eight were engaged on Reforestation projects, six on Forest Inventory surveys, two on Assessment surveys in Central Queensland, two on Logging surveys in North Queensland and one on Theodolite Control surveys in Southern Queensland.

Operations for each type of survey were as follows:—

### Reforestation Surveys

Of the eight camps operating on Reforestation surveys two were engaged in Gympie and one in each of Brisbane, Maryborough, Mackay, Murgon, Monto and Yarraman districts. A total of 748 miles of compass and chain traverse was run, covering compartment and reserve boundaries, firebreaks, roads, species separation and soil and timber classification surveys. These camps were mainly 3-men gangs.

### Forest Inventory Surveys

Of the six camps operating, three were engaged on Western cypress and hardwood, two on coastal hardwood, and one on softwood plantation areas.

In the western areas 167,960 acres were assessed, with an establishment of 1,008 permanent plots and a tally of 1,077 miles of strip and compartment boundary surveys. In the coastal hardwood areas 71,400 acres were covered, with an establishment of 467 permanent and 114 random plots and with a strip survey total of 230 miles. In the softwood plantations 353 previously established plots were remeasured and 78 new plots were established, covering an area of assessment of 4,870 acres, and 3,537 acres of site index sampling was accomplished by 187 miles of strip measurement.

### Assessment Surveys

Two camps operating in the Mackay district, at Duaringa and Theodore, were engaged on timber assessment surveys. An area of 66,570 acres was covered and a total of 461 miles was run as strip surveys.

### Logging Surveys—North Queensland

The two camps operating in North Queensland were mainly engaged on road location surveys for logging purposes. However, some compartment surveys were run for reforestation projects in the rain forest areas. A total of 133 miles of traverse was surveyed by compass and chain.

### Inspection and Investigation Surveys

520 miles of traverse were also undertaken during the year for inspection, reconnaissance and investigation surveys. These were mainly confined to Mackay and North Queensland districts.

### Theodolite Control Surveys

Theodolite control lines totalling 100 miles were run during the year. Forty-three miles were on softwood plantation areas, 38 miles on western cypress and hardwood areas and 19 on coastal hardwood.

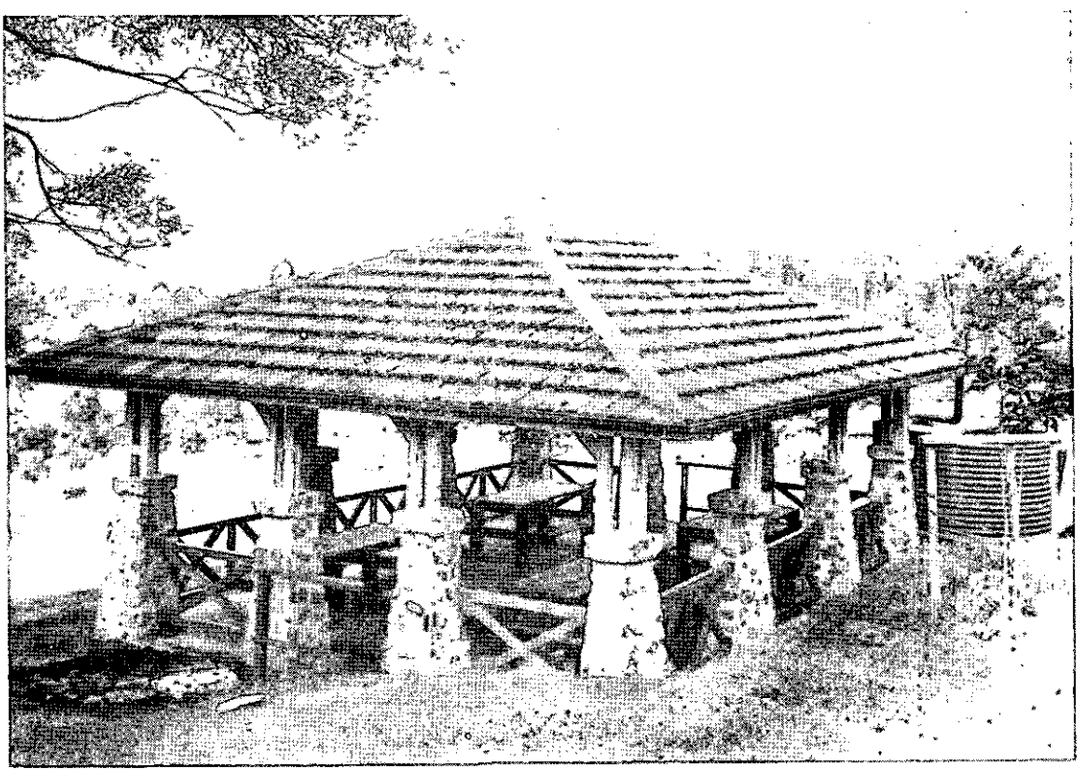
## NATIONAL PARKS

In recent years a pressing demand has developed for facilities for the picnicker and the day visitor to our National Parks. Particularly on Sundays, when the weather is suitable, are the Parks at such places as Tamborine Mountain, Springbrook, Lamington, Cunningham's Gap and Bunya Mountains thronged with visitors. In the past few years the Department has been concentrating on providing amenities and conveniences at the main picnic and parking grounds on these Parks.

Appropriate entrances have been built, toilet conveniences erected, picnic tables and fireplaces provided and, as funds permitted, shelter sheds erected. These picnic grounds are regularly maintained and serviced, the grass kept mown and, where possible, firewood provided for the person who desires to "boil the billy" or "grill the chop."

**BEERBURRUM STATE FOREST.**

**Nine year old under-planting of Hoop pine under *Pinus elliottii* aged 24 years.**



**SHELTER SHED—MAIALA NATIONAL PARK—MT. GLORIOUS.**

**As funds permit such facilities are being provided at picnic areas frequented by the public.**

These picnic grounds are focal points from which track systems radiate—lengthy tracks being provided for the young and energetic whilst, for the not so young, short circuit tracks are available. In this way all persons can enjoy the beauties of the Parks.

Sign boards on these grounds give the visitor full information as to walks available. Along the tracks, trees are name plated, protective lookouts erected at strategic points, the whole track system adequately sign posted, and occasional boards erected listing aboriginal names applicable to the particular Park and the meaning of each.

Expenditure on such works has permitted the nature lover to spend a most enjoyable leisurely day in the Australian bushland, to picnic under the shade of the trees, to walk and talk with nature as he strolled along the easy graded bush tracks, and to return to his home refreshed and invigorated for the work that lies ahead.

Many complimentary remarks have been passed by visitors to these areas, Southern tourists being particularly enthusiastic, and comments on the tracks—"so easy to walk along"; on the bushland—"wonderful to see in its natural condition"; on the signs—"how appropriate and attractive," are commonplace.

A recent overseas and much-travelled visitor, when taken to Springbrook for a day's visit, was enthralled with the scenery, delighted with her first cup of "billy tea" around a rough bush picnic table in a setting of eucalypts—but, and this is more important, was most impressed with the respect the visitor had for the concept of "complete protection" of such areas.

The Department is very pleased to report that only isolated cases of vandalism occur on these areas and this is attributed to the fact that the majority of visitors are nature lovers and the type of facility provided invites respect.

The Department desires to record the ready co-operation given by the Albert, Beaudesert, Crow's Nest, Kingaroy, Nanango and Wambo Shire Councils in maintaining and improving access roads to the Parks. In this connection the assistance of the Main Roads Department is also acknowledged.

During the year 1959-60 an amount of £45,000 was expended on National Parks, bringing total expenditure to 30th June, 1960, to £602,357.

Some features of the year's work were—

*Lamington.*—A shelter shed and picnic tables constructed at Binna Burra and work continued on Moran's Falls track, which is now open to visitors.

*Springbrook.*—Seven chains of track constructed, joining the main entrance to the eastern track via the base of the rock escarpment, and providing an impressive close view of the perpendicular rock face from the fern tree gully. A new shelter shed erected at Warrie National Park.

*Tamborine Mountain.*—Special attention given to picnic grounds which become overtaxed on holidays and week-ends. Conveniences under construction at Witches Falls. A central sign, giving detailed information of Parks on the mountain, erected at Joalah.

*Noosa.*—Shelter shed and tables provided at Tingirana lookout.

*Numinbah.*—New picnic ground provided on land taken over from Main Roads Department. Random rock shelter shed under construction at entrance to track system, Natural Bridge.

*Montville and Ravensbourne.*—New toilet conveniences provided and picnic grounds developed.

*Bunya Mountains.*—The Department subsidised, to the extent of £933, roads leading to the Bunya Mountains. The work carried out by the Nanango, Kingaroy and Wambo Shire Councils has improved considerably these roads.

*Hayman Island.*—Eighty-one chains of new track constructed. It is proposed to connect Dolphin Point track to Blue Pearl Bay track, providing a round trip.

*Lindeman Island.*—Further 59 chains of track constructed.

*Lake Eacham.*—Shelter shed provided.

*Lake Barrine.*—Wooden foot-bridge built over Wright Creek.

The total length of track in all reservations at 30th June, 1960, was 250 miles 14 chains and the maintenance of this track system is a major yearly item of expenditure on National Parks.

Valuable assistance was rendered by Honorary Rangers in patrol and protection of the Parks, particularly by that small band of reliable enthusiasts in their organised week-end patrols.

The National Parks Association has continued to work in harmonious relationship with the Department—our ideal being also theirs—to retain the Parks for all time in their natural condition for the enjoyment of present and future generations. They, like the Department, appreciate that the greatest charm of the Parks lies in their naturalness.

Congratulations are extended to the President of the Association, Mr. R. W. Lahey, M.B.E., who was honoured in the New Year's Honour lists by Her Majesty, Queen Elizabeth II. It is a fitting recognition of the service Mr. Lahey has rendered to the community in Queensland in furthering the National Park ideal in this State.

During the year there were some staff changes on National Park work. Mr. J. A. Gresty, the senior National Parks Ranger, retired. He was replaced by Mr. H. A. Hausknecht from North Queensland, whilst Mr. Hausknecht's position in North Queensland was filled by the promotion of Mr. R. A. Cooley, for some years the Overseer in charge of work on National Parks at Mount Glorious.

It is most fitting that record should be made here of the work of Mr. Gresty on National Parks in this State. A profound lover of the things of nature, an uncompromising upholder of the National Park ideal, a botanist, an authority on aboriginal lore, a fluent speaker, the ideal person to control and protect our Parks, he will be very much missed. He never spared himself in the execution of his duties—long hours worked uncomplainingly and much of his leisure time on holidays and week-ends given freely for the things he loved. He had the capacity to inspire other men with his own high ideals and this inspiration will live on in the persons still administering and working on our Parks. We wish him many more years of good health to permit him to roam at leisure through his beloved Parks.

It would be appropriate, also, to make mention here of the high standard of the work performed by the men engaged on our Parks. Because of the need to retain the primitiveness of our Parks, the tools of trade of the workmen are, of necessity, mostly primitive. When one sees the tracks that have been constructed into, around and out of canyons and rough and precipitous country, and realises that the materials and tools used would be transported or carried by the men themselves into such rough and rugged country, one appreciates just what these employees have accomplished. From remarks received it is pleasing to note that the general public also appreciates the work that has been and is being done by this small and trusty body of men.

Two areas, totalling 24 acres 1 rood 30 perches, donated previously for National Parks purposes, were proclaimed as such.

Two islands, viz., Orpheus and Woody Islands, being areas of 3,380 acres and 1,750 acres, respectively, of former Vacant Crown Land, were set aside as National Parks whilst an area of 1,669 acres 3 roods 20 perches of Vacant Crown Land on the Mooloolah River was similarly proclaimed. This latter area was proclaimed by way of exchange for a cancelled National Parks Reserve of about 1,758 acres which was required for aerodrome purposes.

## SAWMILLS LICENSING

During the year between 650 and 670 sawmills were in active operation.

The number of licenses current showed a further decrease, reflecting the continued diminution in timber supplies available and the competition that prevails for such supplies.

The two main classes involved were mills supplying general building timber requirements and mills engaged in the production of sleepers.

The practice of making regular inspections of licensed sawmills to ensure that requirements are being adhered to has been continued and, with but few exceptions, it has been found that sawmillers are observing the provisions of the Sawmills Licensing Act.

During the year a Sawmills Licensing Board was set up by the Honourable the Minister. The function of the Board is to consider all matters pertaining to Sawmills Licensing and to submit its recommendations to the Director of Forests. Mr. E. Sutherst of the Land Administration Commission was made Chairman and Mr. W. R. Gilbert (now deceased) and Mr. A. R. Trist were appointed members.

The following table sets out the position with regard to sawmills licenses as at 30th June, 1960:—

| Number of Licenses as at 30–6–59 | Classification | New Licences Issued | Formerly General, Now Restricted | | Licenses not Renewed | | | Current Licenses as at 30–6–60 | Total 30–6–60 |
|---|---|---|---|---|---|---|---|---|---|
| | | | Plus | Minus | Refused | Relin-quished | Under Consid-eration | | |
| 744 | General mills .. | 4 | .. | 2 | 26 | 11 | 10 | 699 | 709 |
| 14 | Case mills .. .. | .. | .. | .. | .. | 1 | .. | 13 | 13 |
| 50 | Sleeper mills .. | 7 | 1 | .. | 1 | 3 | 1 | 53 | 54 |
| 22 | Other restricted .. | 1 | .. | .. | .. | 1 | .. | 22 | 22 |
| 73 | Resaw and dressing.. | 3 | 1 | .. | .. | 2 | 2 | 73 | 75 |
| 903 | | 15 | 2 | 2 | 27 | 18 | 13 | 860 | 873 |

## OFFENCES

During the year ended the 30th June, 1960, officers reported on 160 cases of breaches of the Acts and Regulations administered by the Department.

Proceedings were successfully instituted against seventeen persons. Of these, 11 were proceeded against for unauthorised cutting or removal of timber, 2 for unauthorised removal of gravel, 2 for breaches of the Rural Fires Acts, and 2 for breaches of the Timber Users' Protection Acts.

In addition, a case of a breach of the Native Plants Protection Act was referred to the Department of Agriculture and Stock and that Department instituted successful proceedings.

Fines totalling £213 10s. were imposed.

In ninety-three cases of unauthorised timber operations, where it was considered the offences did not warrant proceedings, the value of the timber was collected and warnings issued. In some instances, part of the costs of investigation was charged and an amount of £145 was recovered in this way.

In 12 cases of unauthorised ringbarking, appropriate action was taken.

The other cases were of a minor nature or are still receiving attention.

As a result of action taken in all cases, an amount of £4,873 was recovered by the Crown in timber revenue.

Thirty-four complaints under the Timber Users' Protection Acts in respect of lyctus susceptible timber were received from householders, a slight decrease on the previous year's figures.

The Department continued its policy of endeavouring to get the builder to rectify the position and in 8 of the complaints investigated remedial action was taken without the necessity of prosecution.

In two cases it was necessary to take proceedings and fines totalling £30 were imposed.

In fourteen 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 Acts. The remaining cases are receiving attention.

## HARVESTING AND MARKETING

### General

A near-record volume of Crown milling timber was felled during the year, amounting to 238,721,399 superficial feet, nett, Hoppus measure. (Logs sold as sleeper blocks are not included in this figure.)

This is 11,000,000 superficial feet more than was felled in 1958-1959 and 18,000,000 superficial feet more than the average annual fellings in the four years preceding 1958-1959.

Fellings of forest hardwoods increased by 5,000,000 superficial feet, continuing the upward movement evident in the previous year.

Removals of natural Hoop and Bunya Pine decreased by 5,800,000 superficial feet, compared with removals during 1958-1959, mainly because of wet weather occurring in the normal logging season.

Plantation thinnings were in demand and the volume obtained was 35 per cent. more than the record volume secured in the preceding year.

Total fellings amounted to 27,565,000 superficial feet. All sales of this class of timber that were offered during the year were taken up and it can be anticipated that annual fellings will continue to increase, providing an increasing proportion of the State's needs in timber.

The Cypress Pine cut increased by 2,000,000 superficial feet while increases also occurred in the cut of miscellaneous species (1,000,000 superficial feet) and scrub hardwoods (2,600,000 superficial feet).

The cut of cabinet woods was lower by 1,200,000 superficial feet than in the preceding year.

The demand for constructional, squared and round timbers, sleepers, fencing material and mining timbers resulted in 55,061,286 superficial feet, hoppus, being removed from Crown forests. The corresponding figure for 1958-1959 was 39,782,417 superficial feet.

The number of sleepers obtained totalled 1,229,179, being 338,000 more than in the previous year, and there were also considerable increases in the supply of poles and girder logs.

Pending a decision on the recommendations of the Timber Inquiry Committee, log prices remained unchanged.

The last general review of log prices took place in February, 1958. Since that time the costs of cutting timber have increased by 10 per cent. due to changes in the Award covering this work.

### 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) | | | | | | | | |
| 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 | 19,460 | 56,744 | 257,472 | 26,678 | 44,785 | 14,396 | 472,082 |
| 1958–59 | 43,729 | 1,897 | 19,931 | 54,072 | 252,500 | 26,631 | 48,458 | 17,365 | 464,583 |
| 1959–60 (estimated) | 35,500 | 2,300 | 27,000 | 56,000 | 266,000 | 24,000 | 47,000 | 20,000 | 477,800 |

### Mill Logs—Crown Lands

The following are the annual quantities of mill logs obtained from Crown Lands as from 1950-51:—

| | Super. ft. | | Super ft. |
|---|---|---|---|
| 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 |
| 1954–55 .. .. | 224,000,000 | 1959–60 .. .. | 239,000,000 |

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) | | | | | | | |
| 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 | 27,130 | 20,296 |
| 1959–60 .. .. | 34,998 | 2,139 | 26,835 | 88,245 | 12,761 | 17,894 | 28,284 | 27,565 |

SPOTTED GUM AND YOUNG CYPRESS PINE—DALBY DISTRICT.

HAULING CYPRESS PINE LOGS—BARAKULA STATE FOREST

*238,721,000* superficial feet of mill logs were cut from Crown lands. *Of this, 26,835,000* superficial feet were Cypress Pine.

## The Timber Business

| | 1958–59 | 1959–60 |
|---|---|---|
| (a) Mill Logs— | | |
| Hoop and Bunya Pine .. | 40,808,000 super. feet | 34,998,000 super. feet |
| Forest Hardwoods .. .. | 83,284,000 super. feet | 88,245,000 super. feet |
| Scrub Hardwoods .. .. | 10,162,000 super. feet | 12,761,000 super. feet |
| Cypress Pine .. .. .. | 24,907,000 super. feet | 26,835,000 super. feet |
| Kauri Pine .. .. .. | 1,951,000 super. feet | 2,139,000 super. feet |
| Cabinet Woods .. .. | 19,042,000 super. feet | 17,797,000 super. feet |
| Miscellaneous Species .. | 27,131,000 super. feet | 28,284,000 super. feet |
| Plantation Timbers .. .. | 20,296,000 super. feet | 27,565,000 super. feet |
| Limb Logs, Head Logs, Stumps and Flitches .. .. | 97,000 super. feet | 97,000 super. feet |
| Total Crown Mill Logs .. .. | 227,678,000 super. feet | 238,721,000 super. feet |
| (b) Construction Timbers— | | |
| Headstocks, Transoms, Crossings, Braces, &c. .. | 191,203 super. feet | 680,274 super. feet |
| Sleepers .. .. .. | 890,947 pieces | 1,229,179 pieces |
| Girders, Corbels, Piles, Sills, and Girder Logs .. | 81,756 lineal feet<br>68,004 super. feet | 84,793 lineal feet<br>391,687 super. feet |
| Poles .. .. .. .. | 320,950 lineal feet | 440,943 lineal feet |
| House Blocks .. .. | 99,040 lineal feet | 109,926 lineal feet |
| Mining Timbers .. .. | 426,059 lineal feet | 449,846 lineal feet |
| Mining Timbers .. .. | 32,104 pieces | 35,175 pieces |
| Gross Receipts from Timber Sales, &c. .. .. | £2,194,871 | £2,176,934 |
| Net Revenue .. .. .. | £1,342,738 | £1,259,568 |

### Logging

During 1959-60 the following quantities were hauled by, and payments made to, contractors to the Department:—

| Class | Quantity | Expenditure |
|---|---|---|
| | Super. feet | £ s. d. |
| South Queensland— | | |
| Hoop and Bunya Pine .. .. .. .. .. .. .. .. | 15,198,904 | |
| Forest Hardwoods .. .. .. .. .. .. .. .. | 79,157 | |
| Scrub Hardwoods .. .. .. .. .. .. .. .. | 71,660 | |
| Miscellaneous .. .. .. .. .. .. .. .. .. | 30,959 | |
| Cedar .. .. .. .. .. .. .. .. .. | 9,467 | |
| | 15,390,147 | 158,482 3 8 |
| North Queensland— | | |
| Kauri Pine .. .. .. .. .. .. .. .. .. | .. | |
| Cabinet Woods .. .. .. .. .. .. .. .. | 883,750 | |
| Forest Hardwoods .. .. .. .. .. .. .. | .. | |
| Scrub Hardwoods .. .. .. .. .. .. .. | 17,190 | |
| Miscellaneous .. .. .. .. .. .. .. .. | 28,355 | |
| Cedar .. .. .. .. .. .. .. .. .. | .. | |
| | 929,295 | 10,797 4 0 |
| Totals .. .. .. .. .. .. .. .. | 16,319,442 | 169,279 7 8 |

### Rosewood

No shipments were made during the year.

Stock on hand at 30th June, 1960—11 tons.

### 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 26th October, 1959 .. .. .. | 14 | 5 | 6 | to | 14 | 9 | 6 |
| On 1st February, 1960 .. .. .. | 14 | 9 | 6 | to | 14 | 11 | 6 |
| On 2nd May, 1960 .. .. .. | 14 | 11 | 6 | to | 14 | 13 | 6 |

**Constructional Timbers—Departmental Contracts**

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

| Class of Timber | 1957–58 | 1958–59 | 1959–60 |
|---|---|---|---|
| Sleepers .. .. .. .. .. .. | 484,716 pieces | 486,752 pieces | 699,509 pieces |
| Crossings .. .. .. .. .. .. | 193,444 super. feet | 89,203 super. feet | 271,507 super. feet |
| Transoms .. .. .. .. .. .. | 159,492 super. feet | 4,471 super. feet | 140,448 super. feet |
| Bridge timber (round) .. .. .. .. | 17,944 lineal feet | 4,971 lineal feet | 6,604 lineal feet |
| Bridge timber (square) .. .. .. | 71,686 super. feet | 9,246 super. feet | 14,037 super. feet |

**Logging Roads—1959-60**

The Department's road programme for the year constituted 88 miles of construction. Location and working surveys covering 266 miles were carried out.

Expenditure from Forestry votes was as follows:—

| | £ |
|---|---|
| New Construction .. .. .. .. .. | 159,534 |
| Maintenance .. .. .. .. .. .. | 65,308 |
| Subsidies to Shire Councils .. .. .. .. | 19,971 |
| Workers' Compensation .. .. .. .. | 484 |
| Pay Roll Tax .. .. .. .. .. .. | 2,586 |
| Surveys .. .. .. .. .. .. .. | 2,392 |
| Fares and Freights .. .. .. .. .. | 4,227 |
| Resumption for Access .. .. .. .. | 797 |
| | £255,299 |

## FOREST PRODUCTS RESEARCH

Queensland is a treasure house of fine woods and the retention of this valuable heritage for the needs of its people depends upon the utmost employment of all modern developments in timber science, both in the conversion of the forest resource and in its proper utilisation. The object is to make use of every possible forest product and see this through to its employment with the greatest efficiency.

The work of the Forest Products Research Branch is thus of prime importance to both Government and private producers, to those who bear the responsibility for processing the materials for service in many industries, and to every citizen of the State.

Superior qualities of timber in many fields of use continue to be discovered and competition from substitute materials need not be feared provided that those concerned with timber production take care to consider the essential needs of the user and employ every facility of modern science to offer for sale an article of highest quality. Much still remains to be done in demonstrating the best methods for the most efficient use of timber in building construction and structural engineering. Waste of timber in members of unnecessary dimensions can be avoided by the proper application of the findings of up-to-date timber research, and design in wood can be successfully geared to timbers of the greatest availability from the growing forests.

At the present time, practical application of technical knowledge in the use of timber in this State is lagging behind the findings of research workers, and many troubles in timber use are the direct result of failure to make the best use of information available. This, again, places emphasis upon the necessity for a continuous policy planned to make certain that timber users are fully informed in regard to the practical values of timber research.

Research in wood chemistry and preservation has been carried on under great difficulties during the year owing to the disorganised condition of the present obsolete laboratory and non-completion of the new one. Work on this, however, is now in hand and it is hoped that it will be given urgent priority. Construction of the new Forest Products Research Yard and Workshops at Salisbury is at a standstill and progress of work at the Ipswich Road Depot will continue to be retarded until the new Salisbury facilities are in working condition.

**I. Engineering and Economics**

Extension services in sawmill design and associated engineering problems continued to be in demand. Layout and necessary working drawings for re-equipment of two existing mills with modern plant were prepared and advice given to two other mills on electrification and installation of new machinery. Enquiries for waste disposal systems continued. Designs for four new McCashney installations were prepared, as well as detail working drawings for conveyers.

Observers and assistance were provided for a large and comprehensive study of saw-speeds, saw-gauge, tooth design, feed rates, power consumption, &c., by Division of Forest Products, C.S.I.R.O., in a Brisbane mill. The study covered several species of hardwood, and Hoop Pine. It should provide information which can lead to marked reduction in power costs and improvement of sawing efficiency.

In order to present modern design data for wooden construction to architects and engineers, the Department arranged for a course of lectures on timber engineering to be given by an officer of Division of Forest Products, C.S.I.R.O., under the auspices of the University of Queensland. Widespread interest in the course was indicated by attendance of engineers and architects from industry, private practice and State and Commonwealth Departments.

During the year the initial steps were taken by industry to set up the necessary fabricating facilities for production to order of properly designed wooden arches, trusses and rigid frames. Construction of factory and mill buildings for this project has commenced. This development can exploit modern design and efficient use of wood to produce structures highly competitive with other materials.

Construction of the Soils Laboratory building at Beerwah was completed except for installation of equipment, plumbing and electrical services.

This building was constructed of seasoned and dressed Slash Pine from plantation trees. It employs nailed portal frames of 20-feet span and 5-feet spacing and, apart from its primary purpose, serves as a field trial of several preservation treatments of external sheeting and joinery made from this material.

Studies in sawmill economics were continued viz.,

Plantation Thinnings.—Sample batches of stems of various sizes of two species, Hoop Pine and Slash Pine, were sawn at the Experimental Yard to determine—

(*a*) Recovery of sawn timber by grade. Green-off-saw recovery and losses in air seasoning to E.M.C. were recorded.

(*b*) Log and tree values at current sawn timber prices.

(*c*) Sawing pattern to provide maximum value return having regard to grades of sawn timber produced.

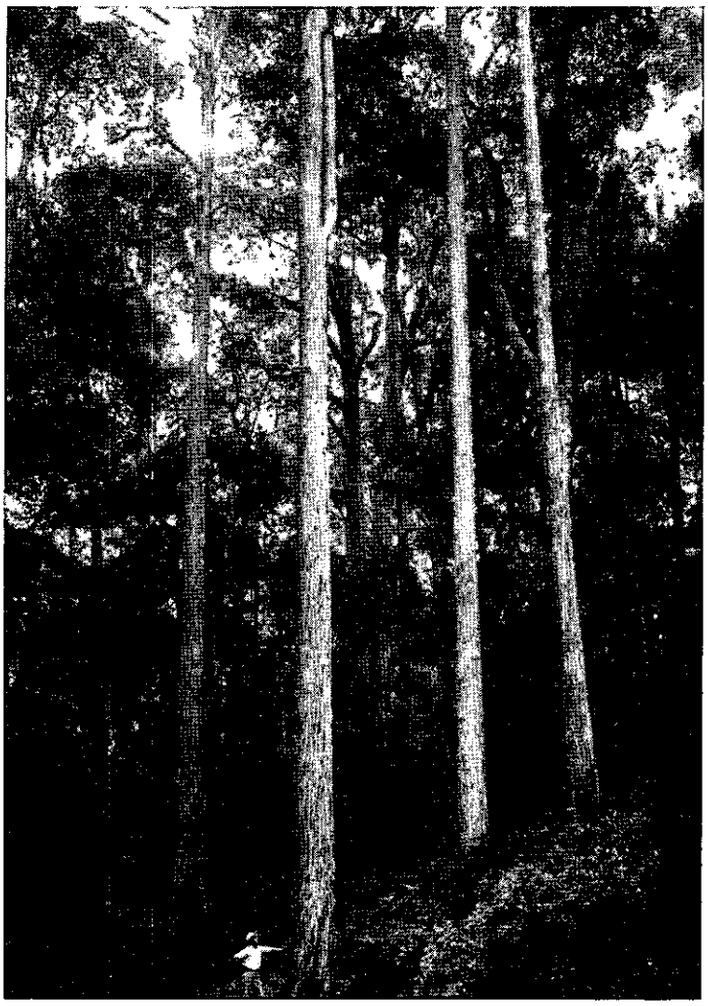
Mill studies were made as follows:—

(1) Slash Pine (*Pinus elliottii* var. *elliottii*), fully pruned stems from Beerwah.

Sawn material from this study was processed at the Ipswich Road Yard and used for building components in the new Soils Laboratory at Beerwah.

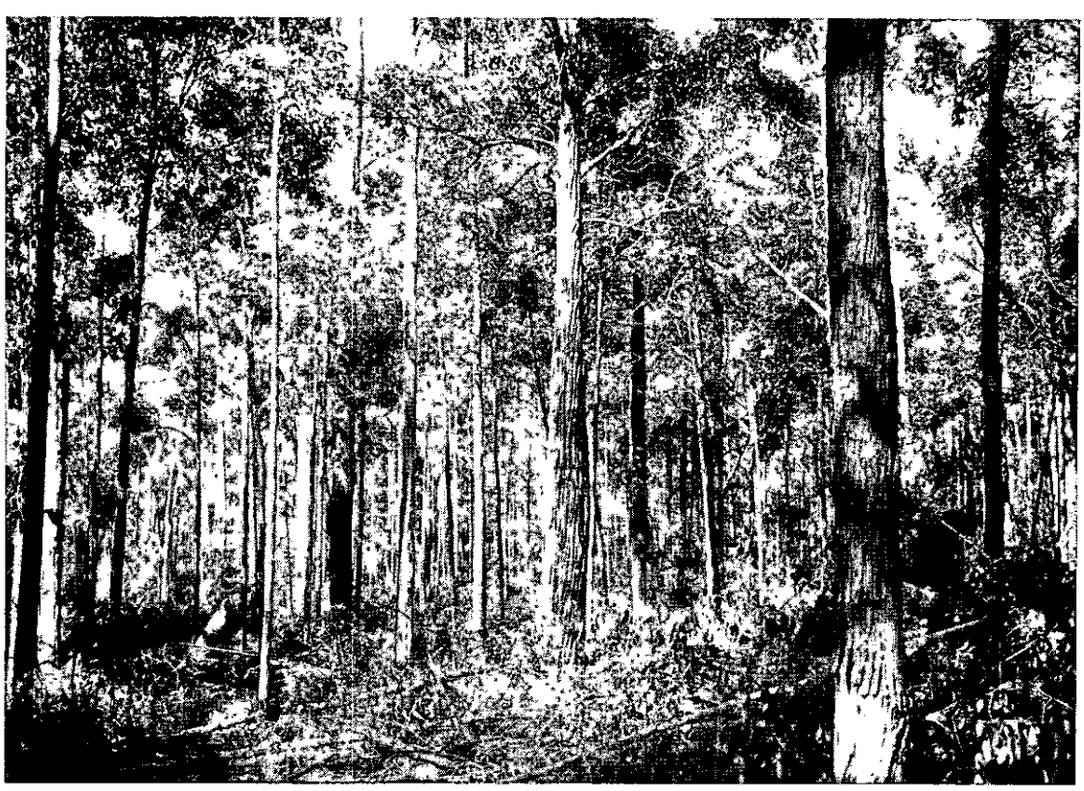
Green-off-saw recovery was 61·5 per cent. and recoveries from butt, middle and top logs were 65·7 per cent., 58·9 per cent. and 46·5 per cent. respectively. Recovery in five girth classes from 21 inches to 40 inches + was also secured.

Taper sawing gave the best results and a sawing pattern eliminating the pith in a 2-inch central core proved unsatisfactory for producing the sizes required.



**LARGE SATINAY ON FRASER ISLAND**

**The tree in the foreground is 134-in. g.b.h.o.b.**



**TREATED NATURAL REGENERATION OF SATINAY, BRUSH BOX, BLACKBUTT AND RED MAHOGANY ON FRASER ISLAND.**

**Silvicultural treatment of 26,803 acres of natural regeneration was carried out in 1959-60.**

Green-off-saw material yielded grade percentages as follows:—

| | Per cent. |
|---|---|
| "A" (Clear both sides) | 14·1 |
| "B" (Clear one face, reverse face maximum 3 knots up to 1½-inch diameter in 16 feet) | 9·3 |
| "C" (Sound knots to 1½-inch diameter, no limit) | 42·2 |
| "D" (Containing pith) | 34·4 |

In regard to the value of the sawn product and related log prices, investigations indicate that for fully pruned stems, log pricing using two only log grades, " Pruned Stem" and "Top", is desirable because of the premium in sawn value of the former.

(2) Hoop Pine (*Araucaria cunninghamii*), 100 fully pruned stems each from Yarraman and Imbil, studied on the same basis as (1) above.

To date two-thirds of the Yarraman stems have been sawn and the study is continuing.

(3) Hoop Pine from Yarraman and Imbil with Slash Pine and Loblolly Pine (*Pinus taeda*) from Beerburrum, all freshly felled first thinning stems. This study, commenced in May, is designed to test the moisture content range both within and between trees for wood pulp purposes and is continuing.

(4) North Queensland Sawmills.—Limited studies were made at thirteen mills in which the timbers sampled were Blush Walnut, MacIntyre's Boxwood, Red Eungella Satinash, Red Mahogany, Brown Touriga, Brown Cudgerie, Corduroy Laurel, Ivory Laurel, Northern Laurel and Black Bean.

(5) South-Eastern Queensland Hardwoods.—Plans were made for studies at thirteen sawmills investigated in 1953 to bring up to date information needed for accurate log pricing and to determine present efficiency levels.

## II. Seasoning

The usual free service of moisture content tests for timber users was continued in Brisbane, and the number of samples received increased by 148 to a total of 908 for the year. These were supplied for checking timber deliveries against the specified moisture content and provisions of *"The Timber Users' Protection Acts, 1949 to 1955,"* and results for flooring and dressed weatherboards were as follow:—

| Moisture Content Range | Percentage of Total Number of Samples (1958–59 figures in parentheses) | |
|---|---|---|
| | Flooring | Weatherboards |
| Below 10 per cent. | 1 (4) | 1 (0) |
| 10–15 per cent. | 54 (59) | 33 (60) |
| Above 15 per cent. | 45 (37) | 66 (40) |

These figures indicate that the standard of drying has deteriorated further since last year, inasmuch as nearly half of the boards received were outside the limits approved by the above Acts. A number of complaints of unsatisfactory finished floors received during the year shows that more care should be taken to ascertain that the floor boards have been seasoned correctly before they are nailed into place.

A further 87 moisture content tests were made in North Queensland.

A number of requests for assistance in solving seasoning problems were received during the year, including five for new designs of kilns. Eleven were for inspections of existing facilities with a view to improving efficiency; four of these were in North Queensland. An experiment designed to reduce drying time by high velocity air flow has been set up at the Experimental Yard.

Air-seasoning experiments with green-off-saw covered Bollywood and Yellow Boxwood stacks at Atherton, North Queensland, showed that air equilibrium with an acceptable moisture content below 15 per cent. can be reached in about six weeks with 1-inch boards stripped at the beginning of August. Thereafter a rise to nearly 20 per cent. may be expected during the wet months. It is apparent that stacks should be taken down as soon as the boards reach the approved 10 to 15 per cent. moisture content range.

Timber under cover under a building dried slightly more slowly than that under cover in the open air and also continued at a moisture content about 2 to 3 per cent. below the other material.

**III. Timber Physics**

Investigations into the relationship of growth conditions to physical properties of plantation-grown coniferous and other woods have continued.

**Hoop Pine** (*Araucaria cunninghamii*).—A study of the basic density of 25 stems from Fraser Logging Area revealed the following main features upon analysis of the results:—

Basic Density—

(i.) It is possible to approximately assess the mean density of a stem from the density of its basal disc (Correlation coefficient = ·8604).

(ii.) There is some indication that stem form may be related to mean stem density. However, due to the small number of stems examined, the results are not statistically significant.

(iii.) On pooling the values of the basal discs (ranging between 24 and 35 lb./cu. ft.) there is no overall trend in basic density from pith to bark.

(iv.) It was established that the variation within and between trees is such that each tree has to be considered as a separate entity.

(v.) Variation in basic density within stems has been established. The resultant patterns were found to differ from tree to tree.

*Spiral Grain*—

Prediction of mean spiral grain of stem from its basal disc is less satisfactory than of basic density.

Variation within and between stems again prevented the results from being pooled for the nine trees studied. However, the number of distinct groups among the nine stems is not as large as in basic density.

Shrinkage—

The preliminary analysis showed that the stems have to be grouped into a number of groups with respect to each of longitudinal, radial and tangential shrinkages.

In the investigation of longitudinal shrinkages within stems the resultant patterns appeared different in different trees.

Stability of Sawn Material.—In an investigation of sawn boards the more interesting results were as follows:—

(*a*) Distortion is reduced by taper sawing especially in small stems from 20 to 25 inches girth breast high over bark.

(*b*) Excessive spiral grain increases distortion in sawn material as shown in graph on page 38.

Further investigations of plantation stems still in progress included the effect of sweep upon sawn recovery and the incidence of cupping in relation to shrinkage across the fibres.

**North Queensland Kauri** (*Agathis palmerstonii*)—

Basic Density.—Measurements of 10 trees from R. 191 Wongabel, on discs taken at 10-feet intervals up the stem gave the following results:—

(1) No linear relationship between basic density and age from pith in basal discs could be established, but it was possible to construct a trend line showing the variation of density with age. A high point in the first few rings from the pith indicated the possible formation of heartwood.

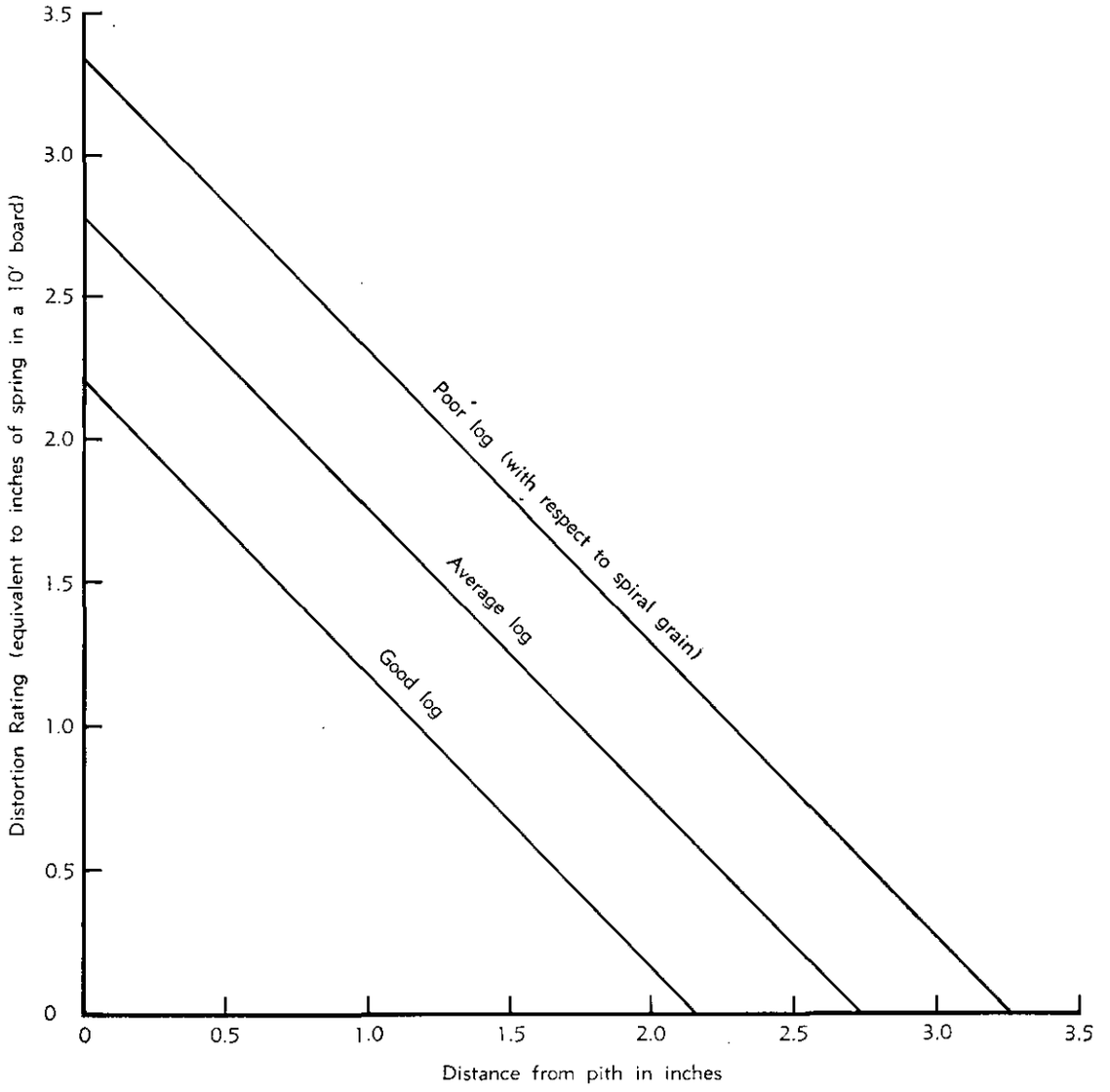
(2) No linear relationship between basic density and girth could be found in the basal disc.

(3) A linear relationship was found between the basic density of all trees collectively and tree height.

(4) Some indication was found that the mean basic density of a tree can be predicted from its basal disc.

(5) No correlation could be found to enable prediction of the mean basic density at a point higher in the tree from the basal disc.

(6) No linear relationship was found between the mean basic density of the tree and its form factor calculated by a standard mensurational method.




**Variation in distortion rating with distance from pith for logs of different spiral grain distribution (Hoop Pine).**

**Slash Pine** (*Pinus caribaea*)

Samples from five standing trees from Banyabba State Forest, N.S.W., from which scion material had been taken for grafting purposes in Queensland Forest Service seed gardens, were examined to ascertain if these contained undesirable physical or anatomical properties as potential parents.

The following characters were measured:—Basic Density, Ring Width, Latewood Percentage, Spiral Grain, Fibre Length and Micellar Angle. Regression analyses between pairs of these characters indicated that ranking could be based upon Basic Density, Fibre Length and Micellar Angle only.

Spiral grain variation from pith to bark was found within the critical figure of 7 degrees which would exclude sawn material from higher grades. From this it was assumed that no trees were undesirable as parents in this regard, assuming that spiral grain in the basal strip is indicative of conditions in the whole tree. This has not yet been confirmed for locally-grown trees of this species.

Analysis of the results allowed the trees to be arranged in order of mean basic density and mean fibre length. Significant differences were not found between trees in the case of micellar angle, so that ranking in order on this character was not statistically possible. Ranking, therefore, was restricted to basic density and fibre length on two bases (*a*) high basic density and high fibre length desirable and (*b*) low basic density and high fibre length desirable.

**Queensland Maple** (*Flindersia brayleyana*).—Basal discs were cut from five trees thinned from R. 191 Barron, North Queensland, and the pattern of basic density is being studied.

**Slash Pine** (*Pinus elliottii* var. *elliottii*) and **Loblolly Pine** (*Pinus taeda*).—Examination was made on the suppressed portions of trees thinned from S.F.R. 589, Beerburrum, to ascertain if the degree of retardation of growth had a significant effect on the percentage of latewood in the suppressed material.

Analysis showed that one of the significant factors in percentage of latewood formation in suppressed material was the rate of growth as indicated by the ring width. Work on this experiment is continuing.

## IV. Wood Anatomy and Utilisation

**(1) Utilisation.**—Assistance to the timber industry and users of wood in the supply of basic information continued on the same scale as last year, 809 personal enquiries being handled with 1,883 identifications of timber for various purposes. In addition to data supplied by letter, a considerable number of official pamphlets and advisory leaflets on building and joinery timbers, timber borers, &c., was supplied to assist the use of Queensland timbers on sound lines and avoid unnecessary waste.

Lectures on wood technology to Trainee Engineers, P.M.G. Department and Australian Forestry School students were continued and assistance was given to building inspectors of other Government Departments and forest learners.

The appointment of an officer with considerable experience in building has strengthened the Branch in this field and enabled his assistance to be made available in problems of timber construction both within and outside the Department.

More reports of serious damage by termites ("White Ants") in new houses built upon concrete slab foundations have been received and architects have been warned of the great difficulty in preventing termite damage to such houses.

Most enquiries on the uses of timbers have referred to rain forest brushwoods, the use of which has been stimulated by the need for softer timbers for furniture and interior building trim and the Department's "Compulsory Log" policy in districts where these timbers are in good supply.

Properly processed brushwoods, immune to borer attack and seasoned to the specified moisture content, are now finding much wider use for building framing, flooring and internal trim, and are being accepted with confidence by building authorities. This is the direct result of the work of the Forest Products Research Branch in encouraging the installation of adequate plant for immunising and seasoning so called "secondary" timbers, and the greater use of official advisory publications provided.

The Branch continued its co-operation with the Standards Association of Australia in improving older timber standards and drafting new ones. Standards for sawn and dressed products of Eastern Australian Hardwoods are in a form available for use by timber-producing and wood-using industries, and considerable progress has been made in drafting suitable standards for sawn and milled Eastern Australian Brushwoods. One large group of sawmillers already has adopted the present hardwood standards as a basis for price lists.

Owing to the great demand for sleepers for improving railroads in Northern and Western Queensland, timbers in the usual short list of high-grade hardwoods are in short supply and the Railway Department has made successful mechanical tests on Silver Leaved Ironbark (*Eucalyptus melanophloia*) from the Springsure area. This timber is now acceptable for sleepers and crossing timbers cut to usual standards and west of Comet on the Central Railway.

Cordial co-operation has been maintained with the Division of Forest Products, C.S.I.R.O., the Government Botanist, Senior Entomologist and other Government Departments and Trade Associations. Inspection of marine borer test pieces provided by the Division of Forest Products were continued at the Darra wharf.

**(2) Wood Anatomy.**—Hoop Pine (*Araucaria cunninghamii*)—A Research Note on the variations and relationships of tracheid length and micellar angle in 28 years old plantation grown Hoop Pine and their parent tree selection was published during the year.

Slash Pine (*Pinus caribaea*).—Analysis was completed of pith to bark wood samples from the base of five standing select 24 years old stems in Banyabba State Forest, N.S.W. A report on the physical analysis of this material appears above under (III.) Timber Physics.

On the anatomical side, some of the results may be summarised as follows:—

(*a*) Tracheid length showed the usual Gymosperm tendency of increase in length with distance from pith.

(*b*) Most of the increased tracheid length from initial to final length occurred in about the first 15 years' growth; thereafter the length increased at a much slower rate with considerable fluctuations.

(*c*) Tracheid length trends from pith to bark suggested the possible influence of a "maturity factor." One tree gave a tracheid length of 4·5 mm. in the eighth ring and thereafter fluctuated about this length with little elongation, indicating a comparative short "juvenile" period.

(*d*) No correlation between basic density and tracheid length existed.

(*e*) Micellar angle decreased with distance from pith in the usual Gymosperm pattern.

(*f*) A highly significant correlation existed between tracheid length and miscellar angle.

(*g*) The usual effect of compression wood in reducing tracheid length and increasing micellar angle was observed. The markedly greater effect of compression wood on micellar angle than on tracheid length, previously noted in Hoop Pine, was also evident in Pinus caribaea.

## V. Chemistry, Preservation and Plywood

Research work necessitating an efficient chemical laboratory has continued to be seriously retarded throughout the year due to the disorganised condition of the old laboratory and transfer operations to the new facility now in course of construction.

Although greatly hampered in space, it was found possible to supply the following analytical determinations:—

| | |
|---|---|
| Preservation | 517 |
| Plywood | 26 |
| Moisture Content | 966 |

**1. Preservation.**—The year showed an increase of three in treatment plants registered under *"The Timber Users' Protection Acts,* 1949 *to* 1955," bringing the State total to 94.

Continued service to the timber industry has been maintained and visits made where necessary to supply advice upon the installation and operation of treatment plants.

Chemical analyses were made in relation to nutritional studies conducted by the Forest Research Branch and water analyses were made for silvicultural and preservation requirements.

Interest was shown in the application of Dip-diffusion treatments for anti-Lyctus control and three major trials were made, viz.:—

(*a*) A semi-commercial treatment using a Boric Acid-Borax formulation on Spotted Gum (*Eucalyptus maculata*) at an inland sawmill. This showed (1) that the extreme hardness of local water made the preparation and stability of the solution difficult to attain; and (2) that the severe atmospheric drying conditions were such that even with timber block stacked under shed cover a very poor penetration of preservative was achieved.

After several months a penetration of only about ¼ inch was attained in 2 inch timber and the solution of this difficulty in dry areas would appear to lie in artificial wrapping of the treated material or in the construction of rooms in which a higher humidity can be maintained.

(*b*) A commercial treatment using a Boric-Borax formulation on 1 inch boards of Spotted Gum at a North Coast sawmill. This proved (1) that a diffusion period of 9 weeks, with the timber wrapped in sisalcraft, was necessary to attain the required core penetration in suspectible timber of a minimum of 0·2 as boric acid on the oven dry weight, (2) analytical values ranged widely from 0·34 per cent. to 2·41 per cent. in the core of susceptible timber.

In all such treatments the non-compatibility of a normal fungicide (sodium pentachlorophenate) with these formulations is a serious problem and a major laboratory investigation has been commenced to study this aspect.

(*c*) Dip-diffused timber was examined in coastal North Queensland in a co-operative study with the Division of Forest Products, C.S.I.R.O., using a Boro-Fluoride formulation on a number of economically important species. Results are not yet complete, but it would appear that a diffusion period of 28 days is necessary for 1 inch thick timber.

Water borne preservatives were used in a semi-commercial trial using vacuum pressure treatments. Examination of the samples is proceeding.

Pressure treated trial sleepers from the Division of Forest Products have been received for installation at two sites arranged by Queensland Railways in North and South Queensland.

Sleepers previously treated with creosote and oil mixtures and installed in the line have been inspected. Fifty-nine were removed during the year, mostly for spike-kill and decay, making a total of 186 since the trials began in 1950. Creosote-open-tank treatment in general has given satisfactory results.

Field plot inspections of treated and untreated material have continued and the results transferred to punch cards.

**2. Plywood and Veneer.**—Plywood treated with Benzene Hexachloride in the glueline. A final inspection of this material showed:—

(i) Attack by Lyctus was not prevented by a concentration of 0·22 lb. BHC/1000 square feet of glueline.

(ii) Light attack was present in the face and back veneers only in a number of sheets at a concentration of 0·88 lb. BHC/1000 square feet.

Interest has developed in the application of polyvinyl chloride and resorcinal formaldehyde as adhesives and advice has been given in connection with problems associated with these. Several laminated pine sills using the latter adhesive were made from plantation material and used in the new Beerwah Laboratory.

**3. "The Timber Users' Protection Acts, 1949 to 1955," and Borer Problems.**—A considerable number of complaints was investigated under the provisions of the above Acts during the year both regarding the use of Lyctus susceptible timber and inadequately seasoned timber. In one case legal action was taken and a fine inflicted for illegal selling of Lyctus susceptible timber. In others satisfactory agreement was reached between building contractors and aggrieved home owners.

Complaints of serious damage to plantation Hoop Pine sawn timber by the Hoop Pine Jewel Beetle continue to come in. These attacks usually result from logs being left too long in the bush and sawmillers are unaware that the logs have become infested until complaints from their customers are received.

## VI. Biometrics

Work of this Section continued under its two divisions of (*a*) Statistics and (*b*) Biometrics. Under (*a*) 23,298 cards were punched for logs harvested under five categories, in addition to a further 7,773 for a large timber preservation project and 20,612 more for a forest inventory survey, making a grand total of 51,683. Some time was lost due to deficiency in staff over some four months.

A new card has been designed for processing recovery data for hardwood mill studies. This will be used for future investigations and a considerable time saving is expected. Two sortings of log sample data have been done under the revised system of tabulation with improved results in availability of data.

Under (*b*) Biometrics, analyses of experiments in timber physics, wood structure, thinnings studies, sawmill studies, sleeper study data, snigging, price determinations (including size and grade distribution) were provided for the Sections concerned.

The Officer-in-charge completed a course on programming the I.B.M. 650 computer, and subsequent use was made of the new technique in a number of silvicultural problems.

**VII. Experimental Yard**

The Sawmill Section at the Ipswich Road Yard has been operating at full capacity for most of the year and it was found necessary to employ additional staff.

Recovery studies of plantation grown logs have been made and a quantity of sawn Slash Pine was effectively used in the construction of the new soils laboratory at Beerwah.

Sawing of three consignments of Hoop Pine third thinnings from the Brisbane Valley District enabled the log prices for this area to be correctly assessed.

## STAFF

At 30th June, 1960, there were 353 salaried officers on the staff, 9 more than at the same time in 1959. The number of wages men increased from 1,615 to 1,729.

Thirty-six salaried officers left the Department during the year, including six officers who retired after long and meritorious service, namely:—

Messrs.

W. C. Woods (Draftsman-in-Charge, 49 years' service),

J. D. Horne (Assistant Secretary, 40 years' service),

J. L. Tardent (Forest Ranger, Division I, 40 years' service),

F. G. Taylor (Forest Ranger, Division I, 32 years' service),

J. A. Gresty (National Parks Ranger, 22 years' service),

J. W. Jackson (Temporary Clerk, 34 years' service).

We wish these officers many more years of health and happiness.

It is with deep regret that the death is recorded of Field Assistant Thomas Nicholls, of Yarraman, who passed away on 17th December, 1959, at the age of 64 years. The sympathy of all members of the Department is extended to his wife and family.

During the year awards or scholarships were conferred on a number of officers of the Department and to them congratulations are extended.

The Permanent Head of the Department, Mr. V. Grenning, was awarded the N. W. Jolly Memorial Award by the Australian Institute of Foresters for his outstanding contribution to the cause of Forestry.

Mr. B. P. M. Hyland was awarded the Schlich Medal for 1959 as the most outstanding student in both class and field work at the Australian Forestry School, Canberra.

Mr. D. Cameron was awarded a scholarship from the English Speaking Union to the University of California, where he is studying towards his M.F. degree.

Mr. R. Florence, the officer-in-charge of hardwoods research, continued to work under a scholarship with C.S.I.R.O. on an ecological study of Blackbutt (*Eucalyptus pilularis*), one of Queensland's most important hardwoods.

During the year higher degrees were conferred on—

Messrs.

B. N. Richards, Ph.D. (Nutrition of Pines—Beerwah),

E. Volck, M.F. (Tropical Rain Forests—North Queensland),

G. Wood, Dip. For. Oxon. (General Research—Beerwah).

## ACKNOWLEDGMENT

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

A. R. TRIST,
Acting Director of Forests.

# Appendices

## APPENDIX A

### Return of Timber, Etc., Removed from Crown Lands during the Year ended 30th June, 1960

| Species | Quantity Super. feet | Super. feet |
|---|---|---|
| Milling Timber— | | |
| Hoop and Bunya Pine— | | |
| Ply | 2,698,668 | |
| Logs | 17,627,637 | |
| Tops | 14,671,238 | |
| | | 34,997,543 |
| Kauri Pine | 2,139,266 | |
| Cypress Pine | 26,835,389 | |
| Forest Hardwoods | 88,244,925 | |
| Scrub Hardwoods | 12,761,202 | |
| Cabinet Woods | 17,797,368 | |
| Miscellaneous Species | 28,283,773 | |
| Limb Logs, Head Logs, Stumps and Flitches | 96,685 | |
| | | 176,158,608 |
| Plantation Thinnings— | | |
| Hoop Pine | 20,444,500 | |
| Bunya Pine | 178,783 | |
| Kauri Pine | 426,597 | |
| Slash Pine | 3,422,500 | |
| Loblolly Pine | 1,606,741 | |
| *Pinus Radiata* | 142,184 | |
| *Pinus patula* | 1,162,375 | |
| Silky Oak | 116,641 | |
| Other Species | 64,927 | |
| | | 27,565,248 |
| | | 238,721,399 |

| | | Expressed as Superficial feet (Hoppus) Log Measure |
|---|---|---|
| Other Classes— | | |
| Sleepers Hewn | 237,719 pieces | 9,033,322 |
| Sleepers Sawn—5 ft. | 183,162 pieces | 5,128,536 |
| Sleepers Sawn—7 ft. | 537,520 pieces | 20,425,760 |
| Sleeper Blocks (as sleepers contained) | 270,778 pieces | 9,748,008 |
| Transoms, Crossings, Headstocks, Longitudinals | 680,274 superficial feet | 1,088,438 |
| Girders, Corbels, Piles, Sills, Kerb Logs | 84,793 lineal feet | 1,526,274 |
| Girder Logs | 391,687 superficial feet | 391,687 |
| Poles | 440,943 lineal feet | 3,086,601 |
| House Blocks, Round Posts | 109,926 lineal feet | 659,556 |
| Fencing Material—Split | 276,541 pieces | 2,488,869 |
| Fencing Material—Round | 158,434 lineal feet | 396,085 |
| Mining Timber—Split | 35,175 pieces | 140,700 |
| Mining Timber—Round | 449,846 lineal feet | 899,692 |
| Stakes | 5,936 pieces | 47,488 |
| Fender Chocks | 216 superficial feet | 270 |
| | | 55,061,286 |

| | |
|---|---|
| Fuel | 47,847 tons |
| Charcoal | 1,100 bags |
| Trees and Plants (Number) | 284,585 |
| Sand, Gravel, Soil, &c. | 219,026 cubic yards |
| Rosewood | 11 tons |
| Lawyer Cane | 14½ tons |
| Staghorns and Ferns | 653 pieces |
| Peat | 1,724 bags |
| Mulga Wood | 30 tons |
| Bee Hives | 10 hives |

## APPENDIX B

### Annual Cut—Pine—Financial Year ended 30th June, 1960

| Forestry District | Ply | Logs | Tops | Total |
|---|---|---|---|---|
| | Super. feet | Super. feet | Super. feet | Super. feet |
| Atherton | .. | 98,103 | 83,922 | 182,025 |
| Brisbane | .. | 345,426 | 226,267 | 571,693 |
| Gympie | 30,614 | 1,241,113 | 940,709 | 2,212,436 |
| Mackay | .. | 778,675 | 759,153 | 1,537,828 |
| Maryborough | 423,214 | 2,467,013 | 2,249,193 | 5,139,420 |
| Monto | 577,617 | 1,570,910 | 1,523,224 | 3,671,751 |
| Murgon | 178,807 | 2,869,286 | 2,197,229 | 5,245,322 |
| Warwick | .. | 287,218 | 290,412 | 577,630 |
| Yarraman | 1,488,416 | 7,969,893 | 6,401,129 | 15,859,438 |
| Total | 2,698,668 | 17,627,637 | 14,671,238 | 34,997,543 |

## APPENDIX C

### Total Receipts, Department of Forestry, for the year ended 30th June, 1960

| Districts | Totals £ s. d. |
|---|---|
| Group 1—South Queensland (Beerwah, Brisbane, Bundaberg, Gayndah, Gympie, Imbil, Maryborough, Monto, Murgon, Pechey, Yarraman) | 1,147,555 8 1 |
| Group 2—North Queensland (Atherton, Herberton, Cooktown, Port Douglas, Cairns, Innisfail, Ingham, Charters Towers, Ravenswood, Hughenden, Townsville) | 396,262 12 4 |
| Group 3—Dalby, Roma, Taroom, Charleville, Quilpie, Mitchell | 124,987 16 9 |
| Group 4—Warwick, Goondiwindi, Inglewood, St. George, Stanthorpe, Cunnamulla | 78,919 14 5 |
| Group 5—Mackay, Rockhampton, Clermont, Bowen, Proserpine, Emerald, Springsure, Theodore | 53,722 6 11 |
| Group 6—Barcaldine, Blackall, Jundah, Longreach, Muttaburra, Stonehenge, Winton, Aramac, Isisford, Jericho | 1,451 13 6 |
| Group 7—Cloncurry, Boulia, Kynuna, Mackinlay, Richmond | 379 14 2 |
| Group 8—Burketown, Coen, Croydon, Georgetown, Normanton, Thursday Island | 7 0 0 |
| | £1,803,286 6 2 |
| Receipts—Forestry and Lumbering | 347,525 11 1 |
| Sale of Plants, Material, &c. | 15,253 14 11 |
| Licenses† (See note after Appendix D) | 2,921 1 8 |
| Rents and Grazing Dues | 9,716 3 11 |
| | £2,178,702 17 9 |
| *Less* Treasury Refunds | 1,768 10 7 |
| | £2,176,934 7 2 |
| Plant Hire— | £ s. d. |
| Charged Loan Fund Projects | 161,880 4 3 |
| Trust Fund Projects | 69,668 11 10 |
| Revenue Fund Projects | 339 2 4 |
| Remitted to Treasury | 231,887 18 5 |
| | £2,408,822 5 7 |

## APPENDIX D

### Proceeds of Sales of Timber, Etc., for the Period 1st July, 1956, to 30th June, 1960

| Groups* | 1956–57** £ s. d. | 1957–58 £ s. d. | 1958–59 £ s. d. | 1959–60 £ s. d. |
|---|---|---|---|---|
| Group 1 | .. | 1,330,952 16 4 | 1,248,990 1 9 | 1,147,555 8 1 |
| Group 2 | .. | 468,216 14 3 | 502,281 17 9 | 396,262 12 4 |
| Group 3 | .. | 118,414 15 6 | 106,115 11 9 | 124,987 16 9 |
| Group 4 | .. | 101,053 9 5 | 87,464 11 6 | 78,919 14 5 |
| Group 5 | .. | 35,773 18 2 | 34,861 5 6 | 53,722 6 11 |
| Group 6 | .. | 4,281 4 4 | 1,390 19 5 | 1,451 13 6 |
| Group 7 | .. | 532 6 7 | 466 16 10 | 379 14 2 |
| Group 8 | .. | .. | 1 15 0 | 7 0 0 |
| | 2,083,883 0 6 | 2,059,225 4 7 | 1,981,572 19 6 | 1,803,286 6 2 |
| Receipts—Forestry and Lumbering | 320,319 5 7 | 383,692 17 0 | 188,742 1 0 | 347,525 11 1 |
| Sale of Plants, Material, etc. | 15,057 18 3 | 22,899 12 8 | 17,981 0 4 | 15,253 14 11 |
| Licenses† | 2,785 17 5 | 2,827 8 2 | 2,866 0 4 | 2,921 1 8 |
| Rents and Grazing Dues | 7,849 14 10 | 8,951 16 10 | 8,515 15 10 | 9,716 3 11 |
| | 2,429,895 16 7 | 2,477,596 19 3 | 2,199,677 17 0 | 2,178,702 17 9 |
| *Less* Treasury Refunds | 3,819 0 4 | 2,444 10 9 | 4,807 0 11 | 1,768 10 7 |
| Total | 2,426,076 16 3 | 2,475,152 8 6 | 2,194,870 16 1 | 2,176,934 7 2 |

* 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, 1959, to 30th June, 1960**

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

## APPENDIX F

### Constructional Timber supplied during Financial Year 1959-60 under Forestry and Lumbering Operations

| Class of Timber | Quantity | Sales Value |
|---|---|---|
| | | £ s. d. |
| Hewn Crossings | 139,302 superficial feet | 6,947 16 1 |
| Sawn Crossings | 132,205 superficial feet | 5,662 15 3 |
| Fender Chocks | 216 superficial feet | 17 0 2 |
| Girders—Dressed | 5,137 lineal feet | 4,984 3 1 |
| Girder Logs | 489 lineal feet | 654 11 8 |
| Headstocks and Braces | 14,037 superficial feet | 902 16 1 |
| House Blocks | 3,530 lineal feet | 816 6 3 |
| Piles | 978 lineal feet | 592 12 6 |
| Hewn Sleepers | 237,719 pieces | 97,205 1 8 |
| Sawn Sleepers | 191,012 pieces | 126,368 18 5 |
| Sleeper Blocks (as sleepers contained) | 270,778 pieces | 102,250 8 4 |
| Split Posts and Rails | 35,843 pieces | 5,486 8 6 |
| Hewn Transoms | 64,487 superficial feet | 3,681 12 7 |
| Sawn Transoms | 75,961 superficial feet | 3,636 12 6 |
| Total | | £359,207 3 1 |

## APPENDIX G

### Comparative Statement of Expenditure for Years 1958-59 and 1959-60

| | 1958–59 | 1959–60 |
|---|---|---|
| | £ | £ |
| Revenue— | | |
| Salaries | 345,026 | 366,763 |
| Travelling Expenses and Incidentals | 35,627 | 36,939 |
| Fares, Printing, Stores, etc. | 4,973 | 5,390 |
| Cash Equivalent of Long Service Leave | 2,460 | 4,909 |
| Timber Industry Milling and Log Marketing Inquiry Committee | 1,779 | 720 |
| National Parks | 41,147 | 45,000 |
| Loan— | | |
| Reforestation | 1,493,251 | 1,496,494 |
| Acquisition of Land for Forestry Purposes | 3,515 | 9,820 |
| Access Roads | 132,244 | 168,990 |
| Purchase of Plant | 79,518 | 94,129 |
| Trust— | | |
| Hardwood Supplies to Railway Department and Others | 215,452 | 341,398 |
| Harvesting and Marketing Timber | 507,856 | 456,344 |
| Access Roads—Maintenance and Subsidies | 90,653 | 86,309 |
| Maintenance of Capital Improvements | 38,172 | 33,315 |
| Maintenance of Plant | 185,790 | 184,999 |
| Interest and Redemption on Loans | .. | 1,259,568 |
| Total £ | 3,177,463 | 4,591,087 |

# APPENDIX H

## Summary of Reforestation Expenditure, 1959-60

| 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, Supervision, &c. | Holidays, Wet Time, &c. | Cartage of Rations, &c. | Camping Allowance | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **BRISBANE WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 69 | .. | 364 14 8 | .. | .. | .. | 1,562 7 11 | 27 5 6 | 24 15 0 | 364 5 2 | 271 9 1 | 31 1 0 | 8 0 0 | .. | 2,653 18 4 |
| Reserve 215 | .. | 589 9 8 | .. | .. | 6 1 3 | 735 11 8 | 18 11 1 | .. | 138 11 6 | 172 10 5 | .. | 70 8 0 | .. | 1,731 3 7 |
| Reserve 309 | 71 1 2 | .. | .. | .. | .. | 3,037 16 6 | 23 10 11 | 89 17 9 | 1,595 8 7 | 1,126 2 3 | 106 17 7 | 245 2 0 | .. | 6,295 16 9 |
| Reserve 359 | .. | .. | .. | .. | 105 11 11 | .. | .. | .. | 13 6 0 | .. | .. | .. | .. | *118 17 11* |
| Reserve 460 | .. | .. | .. | .. | .. | .. | 10 14 6 | .. | .. | .. | .. | .. | .. | 10 14 6 |
| Reserve 494 | .. | 170 19 3 | .. | .. | .. | 665 12 0 | .. | .. | 357 3 0 | 116 9 4 | 82 18 5 | 134 16 0 | .. | 1,527 18 0 |
| Reserve 571 | .. | 217 18 4 | .. | .. | .. | 859 1 0 | 121 4 10 | .. | 501 11 7 | 316 7 10 | .. | 161 12 0 | .. | 2,177 15 7 |
| Reserve 593 | 222 5 8 | .. | .. | .. | .. | 154 11 5 | .. | .. | 146 9 6 | 122 1 2 | .. | .. | .. | 645 7 9 |
| Reserve 667 | .. | .. | .. | .. | .. | 722 6 4 | .. | .. | 250 9 11 | 209 1 11 | .. | .. | .. | 1,181 18 2 |
| Reserve 702 | .. | 158 19 7 | .. | .. | .. | 825 7 7 | 117 14 11 | .. | 683 7 10 | 499 1 5 | 9 1 3 | 285 4 0 | .. | 2,578 16 7 |
| Reserve 727 | .. | 81 15 5 | .. | .. | .. | 220 2 3 | 90 5 5 | .. | 67 1 10 | 139 3 7 | 16 4 | .. | .. | 599 4 10 |
| Reserve 1355 | .. | .. | .. | .. | .. | 11 12 2 | .. | .. | 7 4 2 | .. | .. | .. | .. | 18 16 4 |
| Reserve 1376 | .. | 253 3 2 | .. | .. | .. | 1,073 2 8 | .. | .. | 105 5 11 | 509 3 5 | .. | .. | .. | 1,941 3 2 |
| Reserve 1526 | .. | 259 11 8 | .. | .. | .. | 459 3 9 | .. | .. | 99 5 5 | 70 5 6 | .. | 8 0 | .. | *902 6 4* |
| Reserve *1635* | .. | *138 5 4* | .. | .. | .. | 1,508 12 11 | .. | .. | 290 0 11 | 101 4 2 | .. | *14 0 0* | .. | 2,086 19 4 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 831 16 2 | .. | .. | 48 16 0 | .. | 831 16 2 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 1,749 2 6 | .. | .. | .. | .. | .. | .. | .. | 1,749 2 6 |
| Experiments | .. | .. | .. | 5 5 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 5 4 |
| Miscellaneous Surveys | .. | .. | .. | .. | 11 17 6 | .. | .. | .. | .. | .. | .. | .. | .. | 11 17 6 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | *Cr.* 37 9 0 | .. | .. | .. | .. | *Cr.* 37 9 0 |
| | 293 6 10 | 2,234 17 1 | .. | 5 5 4 | 123 10 8 | 13,584 10 8 | 409 7 2 | 114 12 9 | 5,413 18 6 | 3,653 0 1 | 230 14 7 | 968 6 0 | .. | 27,031 9 8 |
| **KILCOY WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 370 | .. | 799 8 4 | .. | .. | 20 15 1 | 1,534 7 9 | 152 19 11 | 845 17 3 | 654 6 8 | 788 18 0 | 9 10 0 | 516 16 2 | .. | 5,322 19 2 |
| Reserve 637 | 5,311 13 11 | .. | .. | .. | 24 4 10 | 468 15 1 | 97 5 8 | .. | 2,131 11 10 | 1,961 0 4 | 255 15 5 | 1,230 16 0 | .. | 11,481 3 1 |
| Reserve 753 | .. | .. | .. | .. | .. | 78 4 9 | .. | .. | 17 0 8 | .. | .. | .. | .. | 95 5 5 |
| Reserve 893 | 680 18 1 | 291 2 6 | .. | .. | .. | 1,738 13 4 | 788 4 3 | 15 14 10 | 772 13 0 | 980 15 9 | 212 14 11 | 418 8 0 | .. | 5,899 4 8 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 135 6 1 | .. | .. | .. | .. | 135 6 1 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 598 19 5 | .. | .. | .. | .. | .. | .. | .. | 598 19 5 |
| Experiments | .. | .. | .. | 65 19 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 65 19 4 |
| | 5,992 12 0 | 1,090 10 10 | .. | 65 19 4 | 44 19 11 | 4,419 0 4 | 1,038 9 10 | 861 12 1 | 3,710 18 3 | 3,730 14 1 | 478 0 4 | 2,166 0 2 | .. | 23,598 17 2 |

## 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, Supervision, &c. | Holidays, Wet Time, &c. | Cartage of Rations, &c. | Camping Allowance | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **NORTH COAST WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 60 | .. | 119 5 2 | .. | .. | .. | 511 3 0 | 26 2 1 | .. | 76 7 11 | 90 2 7 | .. | .. | .. | 823 0 9 |
| Reserve 108 | .. | 92 17 8 | .. | .. | .. | 687 8 11 | 163 16 7 | .. | 153 16 2 | 109 10 10 | .. | 80 16 0 | .. | 1,288 6 2 |
| Reserve 173 | .. | 1,054 1 5 | .. | .. | .. | 1,316 10 8 | 208 1 4 | .. | 819 2 6 | 572 14 10 | 13 8 9 | 12 12 0 | .. | 3,996 11 6 |
| Reserve 249 | 55 16 7 | .. | .. | .. | 5 0 9 | 240 12 1 | 73 3 4 | .. | 118 7 4 | 91 10 4 | 3 9 7 | 4 0 0 | .. | 592 0 0 |
| Reserve 313 | .. | 26 14 0 | .. | .. | .. | 300 11 6 | 9 16 4 | .. | 97 8 6 | 29 7 2 | 2 16 2 | 48 0 0 | .. | 514 13 8 |
| Reserve 318 | 57 5 1 | 492 4 11 | .. | .. | 19 2 6 | 1,345 9 0 | 608 8 1 | 2 5 3 | 1,299 14 11 | 761 5 8 | 151 9 10 | 206 0 0 | .. | 4,943 5 3 |
| Reserve 351/368/689/728 | .. | .. | .. | .. | .. | 11 10 2 | 87 3 8 | .. | 9 1 6 | 13 0 9 | .. | .. | .. | 120 16 1 |
| Reserve 445 | .. | 538 11 9 | .. | .. | .. | 1,815 16 9 | 224 19 1 | 43 2 10 | 520 3 0 | 710 12 5 | .. | 15 4 0 | .. | 3,868 9 10 |
| Reserve 561 | 3,586 10 3 | .. | 972 10 11 | .. | 57 5 0 | 5,927 18 7 | 726 17 8 | 8,168 8 10 | 3,192 0 1 | 2,513 19 0 | .. | 1,784 17 3 | .. | 26,930 7 7 |
| Reserve 589 | 252 17 2 | .. | .. | .. | 9 13 8 | 2,244 17 8 | 239 18 5 | 290 17 6 | 638 4 5 | 279 12 10 | .. | 270 8 0 | .. | 4,226 9 8 |
| Reserve 611 | 37,821 11 4 | .. | 1,836 12 10 | .. | 1,157 18 7 | 10,619 4 5 | 2,386 13 1 | 773 5 5 | 15,197 10 3 | 8,590 12 3 | .. | 4,664 18 0 | .. | 83,048 6 2 |
| Reserve 638 | 11,448 13 7 | .. | .. | .. | 13 10 3 | 2,787 1 6 | 493 12 7 | .. | 3,440 11 8 | 3,012 14 7 | .. | 1,325 8 0 | .. | 22,521 12 2 |
| Reserve 700 | 2,627 7 3 | .. | .. | .. | 135 0 1 | .. | .. | 380 2 8 | 11 18 10 | .. | .. | .. | .. | 3,154 8 10 |
| Reserve 766 | .. | .. | .. | .. | .. | 242 5 3 | 12 1 0 | .. | 27 16 8 | .. | .. | .. | .. | 282 2 11 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3,223 3 5 | 3,223 3 5 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 1,179 4 5 | .. | .. | .. | .. | 1,179 4 5 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 5,807 3 7 | .. | .. | .. | .. | .. | .. | .. | 5,807 3 7 |
| Experiments | .. | .. | .. | 12,796 0 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 12,796 0 7 |
| Miscellaneous Surveys | .. | .. | .. | .. | 123 3 0 | .. | .. | .. | .. | .. | .. | .. | .. | 123 3 0 |
| | 55,850 1 3 | 2,323 14 11 | 2,809 3 9 | 12,796 0 7 | 1,520 13 10 | 33,857 13 1 | 5,260 13 3 | 9,658 2 6 | 26,781 8 2 | 16,775 3 3 | 171 4 4 | 8,412 3 3 | 3,223 3 5 | 179,439 5 7 |
| **DALBY WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 4 | .. | 398 5 3 | .. | .. | .. | 1,952 4 8 | 159 11 6 | 42 18 10 | 1,472 11 3 | 401 6 1 | 437 11 4 | 582 8 0 | .. | 5,446 16 11 |
| Reserve 21 | .. | .. | .. | .. | .. | .. | .. | .. | 28 3 4 | .. | .. | .. | .. | 28 3 4 |
| Reserve 78 | .. | 3,813 16 9 | .. | .. | .. | 4,315 4 10 | 222 18 11 | 546 17 1 | 4,774 4 1 | 1,983 15 1 | 712 18 2 | 1,670 6 0 | .. | 18,040 0 11 |
| Reserve 83/106 | .. | 348 6 7 | .. | .. | .. | 1,408 17 1 | 167 5 8 | .. | 997 9 7 | 450 18 6 | 243 9 9 | 376 16 0 | .. | 3,993 3 2 |
| Reserve 93 | .. | 787 10 3 | .. | .. | .. | 1,032 9 11 | 70 1 9 | 166 18 0 | 1,681 11 6 | 599 9 2 | 197 8 4 | 424 0 0 | .. | 4,959 8 11 |
| Reserve 126 | .. | .. | .. | .. | .. | 79 13 11 | .. | .. | .. | .. | .. | .. | .. | 79 13 11 |
| Reserve 127 | .. | .. | .. | .. | .. | 14 1 10 | .. | .. | .. | .. | .. | .. | .. | 14 1 10 |
| Reserve 144 | .. | 694 0 9 | .. | .. | .. | 841 0 1 | .. | 238 9 0 | 524 11 6 | 289 11 7 | 95 19 2 | 279 10 0 | .. | 2,269 1 4 |
| Reserve 150 | .. | 4,292 15 9 | .. | .. | .. | 2,510 2 2 | 65 12 9 | 318 10 3 | 2,154 10 0 | 772 19 6 | 15 16 8 | 896 8 0 | .. | 7,428 0 1 |
| Reserve 154 | .. | 1,183 0 11 | .. | .. | .. | 5,346 7 6 | 379 10 6 | 858 18 10 | 4,295 19 8 | 2,438 6 8 | 644 19 5 | 2,334 4 0 | .. | 20,591 2 4 |
| Reserve 155 | .. | 30 19 3 | .. | .. | .. | 1,780 12 8 | 337 9 1 | 27 5 10 | 1,638 5 6 | 543 16 7 | 198 0 8 | 752 18 0 | .. | 6,461 9 3 |
| Reserve 161 | .. | .. | .. | .. | .. | 84 14 3 | 7 11 5 | .. | 86 7 6 | 39 6 3 | 7 19 6 | 32 16 0 | .. | 289 14 2 |
| Reserve 302 (Ballon) | .. | 3,385 17 5 | .. | .. | .. | 6,923 4 5 | 610 3 4 | 264 5 9 | 5,832 8 4 | 1,693 13 10 | 845 5 8 | 2,160 12 0 | .. | 18,329 13 4 |
| Reserve 302 (Malcolm) | .. | 50 12 2 | .. | .. | .. | 5,472 4 0 | 879 18 8 | 483 14 11 | 4,835 2 6 | 1,876 0 10 | 940 8 6 | 2,153 16 0 | .. | 20,027 2 10 |
| Reserve 389 | .. | .. | .. | .. | .. | 732 16 11 | 28 2 7 | 301 8 2 | 226 2 9 | 291 3 11 | 88 9 0 | 201 12 0 | .. | 1,920 7 6 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2,281 4 1 | 2,281 4 1 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 2,247 0 6 | .. | .. | .. | .. | 2,247 0 6 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 5,626 8 10 | .. | .. | .. | .. | .. | .. | .. | 5,626 8 10 |
| Experiments | .. | .. | .. | 1,411 5 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1,411 5 10 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | Cr. 97 16 0 | .. | .. | .. | .. | Cr. 97 16 0 |
| | .. | 14,985 5 1 | .. | 1,411 5 10 | .. | 38,120 3 1 | 2,928 6 2 | 3,249 6 8 | 30,696 12 0 | 11,380 8 0 | 4,428 6 2 | 11,865 6 0 | 2,281 4 1 | 121,346 3 1 |

# APPENDIX H—continued

| Reserves | Reforestation: Plantations | Reforestation: Natural Regeneration | Reforestation: Nursery Working and Maintenance | Reforestation: Forest Experiment | Surveys | Protection, Firefighting, &c. | Maintenance of Capital Improvements | New Construction of Nurseries, Buildings, &c. | Overhead Expenses: Stores, Supervision, &c. | Overhead Expenses: Holidays, Wet Time, &c. | Overhead Expenses: Cartage of Rations, &c. | Overhead Expenses: Camping Allowance | Pay-roll Tax | Reserve Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **GYMPIE WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 124 | 10,555 5 10 | .. | 16 10 | .. | 493 12 11 | 1,821 5 0 | 113 10 5 | 148 19 8 | 4,475 19 11 | 3,684 7 10 | 208 0 0 | 1,912 2 0 | .. | 23,414 0 5 |
| Reserve 234 | .. | .. | .. | .. | 23 2 7 | 1,078 16 3 | 708 3 0 | 42 1 6 | 813 17 0 | 336 5 8 | 11 4 | 187 4 0 | .. | 3,190 1 4 |
| Reserve 242 | 11,386 7 8 | .. | 939 17 6 | .. | 110 9 2 | 689 1 4 | 170 16 5 | 1,693 18 2 | 5,163 11 3 | 3,329 17 1 | 165 7 6 | 2,145 1 5 | .. | 25,794 7 6 |
| Reserve 392 | 3,117 2 7 | .. | .. | .. | 29 14 9 | 1,727 2 2 | 766 9 10 | 508 14 1 | 2,407 4 5 | 1,703 17 7 | 61 16 4 | 837 8 0 | .. | 11,159 9 9 |
| Reserve 393 | .. | .. | .. | .. | .. | 908 7 2 | 810 18 9 | .. | 657 2 6 | 322 5 2 | 77 5 8 | 223 16 0 | .. | 2,999 15 3 |
| Reserve 502 | 126 11 2 | 332 1 11 | .. | .. | .. | 708 4 6 | 422 14 4 | .. | 1,182 6 8 | 420 13 2 | 78 0 0 | 253 12 0 | .. | 3,524 3 9 |
| Reserve 627 | .. | 329 9 9 | .. | .. | .. | 559 13 10 | 12 3 4 | .. | 506 18 4 | 186 6 1 | 18 4 0 | 102 8 0 | .. | 1,715 3 4 |
| Reserve 628 | .. | .. | .. | .. | 2 18 2 | .. | 5 17 4 | .. | .. | .. | .. | .. | .. | 8 15 6 |
| Reserve 700 | .. | .. | .. | .. | .. | .. | 57 17 0 | .. | .. | .. | .. | .. | .. | 57 17 0 |
| Reserve 904 | .. | .. | .. | .. | .. | .. | 10 8 | .. | .. | .. | .. | .. | .. | 10 8 |
| Reserve 944 | .. | .. | .. | .. | .. | .. | 10 0 0 | .. | .. | .. | .. | .. | .. | 10 0 0 |
| Reserve 945 | .. | .. | .. | .. | .. | .. | 7 9 4 | .. | .. | .. | .. | .. | .. | 7 9 4 |
| Reserve 949 | .. | .. | .. | .. | .. | .. | 3 10 8 | .. | .. | .. | .. | .. | .. | 3 10 8 |
| Reserve 952 | 945 7 7 | .. | 555 19 5 | .. | .. | 1,536 19 0 | 170 6 3 | .. | 1,524 15 3 | 1,179 11 4 | 33 19 8 | 240 16 0 | .. | 6,187 14 6 |
| Reserve 959 | .. | 202 3 10 | .. | .. | 10 17 0 | 1,709 11 10 | 567 15 0 | .. | 921 19 0 | 579 2 5 | 67 5 10 | 27 2 5 | .. | 4,085 17 4 |
| Reserve 963 | .. | 73 1 6 | .. | .. | .. | 377 18 5 | .. | .. | 168 13 0 | 28 14 0 | 16 4 | 41 12 0 | .. | 690 15 3 |
| Reserve 983 | .. | .. | .. | .. | .. | 370 11 0 | .. | .. | 214 3 11 | 14 8 11 | .. | 69 12 0 | .. | 668 15 10 |
| Reserve 997 | 1,534 14 7 | .. | .. | .. | 193 14 9 | 309 14 2 | 341 8 10 | .. | 822 13 6 | 445 7 3 | 6 9 11 | 172 0 0 | .. | 3,826 3 0 |
| Reserve 1004 | 25,284 7 1 | .. | 2,823 7 6 | .. | 1,898 18 0 | 24,287 18 2 | 1,871 5 3 | 1,656 12 4 | 20,339 3 9 | 10,209 13 4 | 183 16 11 | 6,861 6 0 | .. | 95,416 8 4 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3,628 4 10 | 3,628 4 10 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 2,597 15 8 | .. | .. | .. | .. | 2,597 15 8 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 3,622 6 7 | .. | .. | .. | .. | .. | .. | .. | 3,622 6 7 |
| Experiments | .. | .. | .. | 1,349 19 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1,349 19 5 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | *Cr.* 18 7 6 | .. | .. | .. | .. | *Cr.* 18 7 6 |
| | 52,949 16 6 | 936 17 0 | 4,320 1 3 | 1,349 19 5 | 2,763 7 4 | 39,707 9 5 | 6,040 16 5 | 4,050 5 9 | 41,777 16 8 | 22,440 9 10 | 901 13 6 | 13,073 19 10 | 3,628 4 10 | 193,940 17 9 |
| **MARY VALLEY WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 135 | 18,020 18 9 | .. | 3,044 16 6 | .. | 544 15 2 | 5,099 0 1 | 2,642 9 0 | 10,424 19 8 | 17,879 8 2 | 9,636 12 7 | 261 3 5 | 4,964 2 0 | .. | 72,518 5 4 |
| Reserve 135/274 | 13,091 6 11 | .. | 942 6 9 | .. | 279 5 2 | 1,475 6 11 | 258 10 10 | 175 15 1 | 6,680 7 10 | 4,385 7 8 | .. | 2,965 10 0 | .. | 30,253 17 2 |
| Reserve 256 | 9,977 12 7 | .. | .. | .. | 210 16 6 | 880 19 3 | .. | 556 3 9 | 2,437 11 7 | 2,275 0 10 | .. | 1,686 4 0 | .. | 18,024 8 6 |
| Reserve 435 | 12,618 5 2 | .. | 1,000 8 10 | .. | 503 4 7 | 4,149 0 6 | 956 17 9 | 1,360 14 10 | 9,858 12 10 | 4,977 13 10 | 272 3 6 | 4,418 11 0 | .. | 40,115 12 10 |
| Reserve 546 | .. | .. | .. | .. | .. | .. | 65 2 4 | .. | 10 7 7 | .. | .. | .. | .. | 75 9 11 |
| Reserve 736 | .. | .. | .. | .. | .. | 110 10 9 | .. | .. | 1 2 0 | .. | .. | .. | .. | 111 12 9 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3,485 15 7 | 3,485 15 7 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 2,616 0 2 | .. | .. | .. | .. | 2,616 0 2 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 1,895 16 11 | .. | .. | .. | .. | .. | .. | .. | 1,895 16 11 |
| Experiments | .. | .. | .. | 5,470 7 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5,470 7 3 |
| | 53,708 3 5 | .. | 4,987 12 1 | 5,470 7 3 | 1,538 1 5 | 13,610 14 5 | 3,922 19 11 | 12,517 13 4 | 39,483 10 2 | 21,274 14 11 | 533 6 11 | 14,034 7 0 | 3,485 15 7 | 174,567 6 5 |
| **MACKAY WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 658 | .. | .. | 2,535 5 10 | .. | 379 14 0 | 952 9 9 | 9 0 | 4,094 13 5 | 646 5 0 | 376 14 8 | 30 3 6 | 535 14 1 | .. | 9,551 9 3 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 90 5 6 | 90 5 6 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 456 11 4 | .. | .. | .. | .. | 456 11 4 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 18 10 4 | .. | .. | .. | .. | .. | .. | .. | 18 10 4 |
| Experiments | .. | .. | .. | 358 10 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 358 10 3 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | 100 3 6 | .. | .. | .. | .. | 100 3 6 |
| | .. | .. | 2,535 5 10 | 358 10 3 | 379 14 0 | 971 0 1 | 9 0 | 4,094 13 5 | 1,202 19 10 | 376 14 8 | 30 3 6 | 535 14 1 | 90 5 6 | 10,575 10 2 |

## 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, Supervision, &c. | Holidays, Wet Time, &c. | Cartage of Rations, &c. | Camping Allowance | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **CLERMONT WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 117 | .. | .. | .. | .. | .. | 118 15 3 | .. | .. | 4 9 | .. | .. | .. | .. | 119 0 0 |
| Reserve 127 | .. | .. | .. | .. | .. | 30 0 9 | .. | .. | 15 3 0 | .. | .. | .. | .. | 45 3 9 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 14 8 5 | 14 8 5 |
| Administration | .. | .. | .. | .. | .. | 23 3 1 | .. | .. | 7 1 3 | .. | .. | .. | .. | 7 1 3 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 23 3 1 |
| | .. | .. | .. | .. | .. | 171 19 1 | .. | .. | 22 9 0 | .. | .. | .. | 14 8 5 | 208 16 6 |
| **ROCKHAMPTON WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 20 | 11,631 1 7 | .. | 2,871 0 2 | .. | 897 7 4 | 11,256 5 8 | 229 11 11 | 556 10 4 | 5,403 8 2 | 4,041 6 4 | 414 17 8 | 3,167 2 0 | .. | 40,468 11 2 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 832 15 2 | 832 15 2 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 80 3 5 | .. | .. | .. | .. | 80 3 5 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 331 9 2 | .. | .. | .. | .. | .. | .. | .. | 331 9 2 |
| Experiments | .. | .. | .. | 654 1 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 654 1 6 |
| | 11,631 1 7 | .. | 2,871 0 2 | 654 1 6 | 897 7 4 | 11,587 14 10 | 229 11 11 | 556 10 4 | 5,483 11 7 | 4,041 6 4 | 414 17 8 | 3,167 2 0 | 832 15 2 | 42,367 0 5 |
| **MANY PEAKS WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 28 | .. | 1,677 14 4 | .. | .. | 42 5 5 | 1,331 19 1 | 90 8 5 | 106 5 5 | 1,365 14 2 | 841 8 5 | 288 10 0 | 631 6 0 | .. | 6,375 11 3 |
| Reserve 67 | 1,117 9 11 | .. | 978 2 10 | .. | 20 18 2 | 394 5 5 | 108 1 3 | 9 0 2 | 626 10 1 | 736 0 5 | 266 10 3 | 598 16 0 | .. | 4,855 14 6 |
| Reserve 81 | .. | .. | .. | .. | .. | .. | 9 7 5 | .. | .. | .. | .. | .. | .. | 9 7 5 |
| Reserve 95 | 16,082 1 11 | .. | 2,377 14 11 | .. | 927 11 4 | 3,212 5 9 | 543 18 6 | 397 0 9 | 8,095 17 8 | 4,680 7 10 | .. | 3,413 9 0 | .. | 39,730 7 8 |
| Reserve 308 | .. | .. | .. | .. | .. | .. | 1 18 10 | 12 3 4 | 119 6 6 | .. | .. | .. | .. | 133 8 8 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1,056 14 9 | 1,056 14 9 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 1,008 3 10 | .. | .. | .. | .. | 1,008 3 10 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 663 7 8 | .. | .. | .. | .. | .. | .. | .. | 663 7 8 |
| Experiments | .. | .. | .. | 78 14 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 78 14 11 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | 8 6 0 | .. | .. | .. | .. | 8 6 0 |
| | 17,199 11 10 | 1,677 14 4 | 3,355 17 9 | 78 14 11 | 990 14 11 | 5,601 17 11 | 753 14 5 | 524 9 8 | 11,223 18 3 | 6,257 16 8 | 555 0 3 | 4,643 11 0 | 1,056 14 9 | 53,919 16 8 |
| **MARYBOROUGH WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 8 | .. | 824 16 7 | .. | .. | 169 3 11 | 1,956 10 10 | 225 6 8 | 51 6 5 | 1,581 4 9 | 791 6 10 | 120 17 10 | 297 0 0 | .. | 6,017 13 10 |
| Reserve 12 | .. | 15 6 5 | .. | .. | .. | 1,627 7 9 | 179 1 4 | .. | 696 16 1 | 637 2 6 | 20 8 4 | 250 0 0 | .. | 3,426 2 5 |
| Reserve 57 | .. | 946 6 9 | .. | .. | .. | 4,998 4 5 | 180 15 0 | 123 13 3 | 3,272 15 5 | 1,145 16 2 | 93 5 8 | 1,306 16 0 | .. | 12,067 12 8 |
| Reserve 85 | .. | .. | .. | .. | .. | .. | 48 10 4 | .. | 7 5 0 | .. | 1 4 0 | .. | .. | 56 19 4 |
| Reserve 287 | .. | .. | .. | .. | .. | .. | 73 13 10 | .. | .. | .. | .. | .. | .. | 73 13 10 |
| Reserve 504 | .. | .. | .. | .. | .. | 15 13 0 | .. | .. | .. | .. | .. | .. | .. | 19 10 4 |
| Reserve 676 | .. | 366 8 6 | .. | .. | 7 11 11 | 3,887 13 2 | 460 8 6 | 18 19 0 | 3 17 4 | .. | .. | .. | .. | 8,905 3 10 |
| Reserve 864 | .. | 1,818 5 8 | .. | .. | .. | 4,884 19 4 | 191 8 1 | .. | 2,180 16 7 | 933 17 10 | 146 14 5 | 902 13 11 | .. | 10,652 11 9 |
| Reserve 915 | 26,039 0 6 | .. | 2,093 1 9 | .. | 602 1 10 | 5,419 7 9 | 837 16 10 | 71 3 3 | 1,686 5 8 | 960 15 0 | 76 10 0 | 1,034 8 0 | .. | 4,834 9 1 |
| Reserve 958 | .. | .. | .. | .. | .. | 5,078 3 11 | 402 6 8 | 119 10 0 | 13,346 15 7 | 6,473 14 7 | 360 19 0 | 3,590 8 0 | .. | 58,834 9 1 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | 2,033 8 2 | 883 19 5 | 18 10 0 | 22 0 0 | .. | 8,557 18 2 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2,106 10 0 | 2,106 10 0 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 2,247 6 7 | .. | .. | 3,236 16 5 | .. | .. | .. | .. | 3,236 16 5 |
| Experiments | .. | .. | .. | 881 0 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2,247 6 7 |
| Miscellaneous Surveys | .. | .. | .. | .. | 132 0 8 | .. | .. | .. | .. | .. | .. | .. | .. | 881 0 11 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 132 0 8 |
| | .. | .. | .. | .. | .. | .. | .. | .. | Cr. 146 10 0 | .. | .. | .. | .. | Cr. 146 10 0 |
| | 26,039 0 6 | 3,971 3 11 | 2,093 1 9 | 881 0 11 | 910 18 4 | 30,115 6 9 | 2,599 7 3 | 384 11 11 | 27,899 11 0 | 11,826 12 4 | 838 9 3 | 7,403 5 11 | 2,106 10 0 | 117,068 19 10 |

## 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, Supervision, &c. | Holidays, Wet Time, &c. | Cartage of Rations, &c. | Camping Allowance | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **BUNDABERG WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 67 | .. | .. | .. | .. | .. | .. | 7 6 | .. | .. | .. | .. | .. | .. | 7 6 |
| Reserve 80 | 1 8 0 | 797 9 6 | .. | .. | 13 4 2 | 3,036 2 6 | 91 11 8 | .. | 1,687 8 2 | 696 4 7 | 49 11 9 | 664 8 0 | .. | 7,036 0 4 |
| Reserve 169 | .. | .. | .. | .. | 14 15 0 | 2,050 3 6 | 288 3 7 | .. | 1,201 14 10 | 604 7 7 | 48 0 0 | 326 0 0 | .. | 4,534 12 6 |
| Reserve 278 | .. | 359 4 9 | .. | .. | .. | 188 5 8 | 221 4 5 | .. | 516 12 5 | 246 17 11 | 72 15 3 | 226 12 0 | .. | 1,835 16 11 |
| Reserve 779 | 1,685 14 6 | .. | .. | .. | 23 7 4 | 446 2 6 | .. | 1,630 0 11 | 735 9 3 | 94 8 5 | .. | 183 0 2 | .. | 4,798 3 1 |
| Reserve 832 | .. | 1,131 4 7 | .. | .. | 15 9 6 | 3,631 13 8 | 462 13 9 | 369 9 4 | 1,766 17 4 | 918 5 4 | 106 5 8 | 1,002 7 5 | .. | 9,404 6 7 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 463 16 9 | 463 16 9 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 637 1 2 | .. | .. | .. | .. | 637 1 2 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 707 8 2 | .. | .. | .. | .. | .. | .. | .. | 707 8 2 |
| Experiments | .. | .. | .. | 993 4 0 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 993 4 0 |
| | 1,687 2 6 | 2,287 18 10 | .. | 993 4 0 | 66 16 0 | 10,059 16 0 | 1,064 0 11 | 2,003 14 9 | 6,545 3 2 | 2,560 3 10 | 276 12 8 | 2,402 7 7 | 463 16 9 | 30,410 17 0 |
| **FRASER ISLAND WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 3 | .. | 1,258 3 7 | .. | .. | 904 18 4 | 1,934 7 2 | 1,051 6 4 | 255 8 10 | 4,662 10 6 | 1,214 11 8 | 363 6 4 | 1,314 15 5 | .. | 12,959 8 2 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 238 7 7 | 238 7 7 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 193 7 4 | .. | .. | .. | .. | 193 7 4 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 164 1 10 | .. | .. | .. | .. | .. | .. | .. | 164 1 10 |
| Experiments | .. | .. | .. | 179 16 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 179 16 2 |
| | .. | 1,258 3 7 | .. | 179 16 2 | 904 18 4 | 2,098 9 0 | 1,051 6 4 | 255 8 10 | 4,855 17 10 | 1,214 11 8 | 363 6 4 | 1,314 15 5 | 238 7 7 | 13,735 1 1 |
| **JIMNA WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 137/207 | 18,530 11 0 | .. | 2,581 6 9 | .. | 155 18 11 | 2,970 18 11 | 244 7 9 | 796 19 3 | 10,811 15 1 | 7,971 4 7 | .. | 6,420 5 0 | .. | 50,483 7 3 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1,119 19 4 | 1,119 19 4 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 580 9 4 | .. | .. | .. | .. | 580 9 4 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 26 10 11 | .. | .. | .. | .. | .. | .. | .. | 26 10 11 |
| Experiments | .. | .. | .. | 32 12 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 32 12 2 |
| | 18,530 11 0 | .. | 2,581 6 9 | 32 12 2 | 155 18 11 | 2,997 9 10 | 244 7 9 | 796 19 3 | 11,392 4 5 | 7,971 4 7 | .. | 6,420 5 0 | 1,119 19 4 | 52,242 19 0 |
| **KILKIVAN WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 12/24 | .. | 1,431 4 7 | .. | .. | .. | 2,559 5 8 | 91 9 10 | 191 18 3 | 1,627 15 5 | 849 16 9 | 55 0 0 | 604 16 0 | .. | 7,411 6 6 |
| Reserve 26/67 | .. | .. | .. | .. | .. | .. | 9 18 2 | .. | .. | .. | .. | .. | .. | 9 18 2 |
| Reserve 138 | 239 11 5 | .. | .. | .. | 22 19 0 | 26 10 4 | .. | .. | 99 15 6 | 191 0 3 | .. | 48 0 0 | .. | 627 16 6 |
| Reserve 154 | 9,411 13 2 | .. | .. | .. | 117 7 8 | 1,451 0 5 | 51 16 9 | 87 4 4 | 2,023 4 1 | 2,278 0 5 | 131 16 0 | 2,092 0 0 | .. | 17,644 2 10 |
| Reserve 220 | 2,590 11 0 | .. | .. | .. | 3 14 0 | 194 13 0 | 66 4 4 | 7 12 1 | 1,058 7 8 | 963 17 0 | 129 2 0 | 514 0 0 | .. | 5,528 1 1 |
| Reserve 221 | .. | 43 3 8 | .. | .. | 2 12 2 | 115 11 8 | 20 4 1 | .. | 64 11 10 | 19 6 7 | 168 2 6 | 28 0 0 | .. | 461 12 6 |
| Reserve 298 | 10,119 2 8 | .. | 3,366 0 11 | .. | 145 7 7 | 2,024 5 3 | 324 18 7 | 160 1 1 | 9,808 15 11 | 4,959 4 9 | 296 0 0 | 4,308 19 0 | .. | 35,512 15 9 |
| Reserve 355 | 117 2 5 | .. | .. | .. | .. | 48 12 0 | .. | .. | 10 7 2 | 9 15 8 | .. | .. | .. | 185 17 3 |
| Reserve 424 | .. | .. | .. | .. | .. | 58 16 8 | 12 3 4 | .. | 22 0 10 | 4 18 5 | 8 2 6 | 7 12 0 | .. | 113 13 9 |
| Reserve 427 | .. | .. | 1,375 19 1 | .. | .. | 67 8 3 | 52 8 11 | .. | Cr. 83 13 8 | 126 13 3 | 192 10 0 | 207 4 0 | .. | 1,938 9 10 |
| Reserve 612 | 7,808 9 1 | .. | .. | .. | 40 1 11 | 385 5 4 | 19 18 8 | .. | 2,010 17 2 | 1,940 16 2 | 176 5 0 | 1,286 8 0 | .. | 13,668 1 4 |
| Reserve 673 | 1,538 18 5 | .. | .. | .. | 119 11 2 | .. | .. | .. | 20 7 10 | .. | .. | .. | .. | 1,678 17 5 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1,785 0 9 | 1,785 0 9 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 965 0 10 | .. | .. | .. | .. | 965 0 10 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 1,693 1 4 | .. | .. | .. | .. | .. | .. | .. | 1,693 1 4 |
| Experiments | .. | .. | .. | 91 12 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 91 12 8 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | 95 4 0 | .. | .. | .. | .. | 95 4 0 |
| | 31,825 8 2 | 1,474 8 3 | 4,742 0 0 | 91 12 8 | 451 13 6 | 8,624 9 11 | 649 2 8 | 446 15 9 | 17,722 14 7 | 11,343 9 3 | 1,156 18 0 | 9,096 19 0 | 1,785 0 9 | 89,410 12 6 |

## 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, Supervision, &c. | Holidays, Wet Time, &c. | Cartage of Rations, &c. | Camping Allowance | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **NORTH QUEENSLAND WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 99 | .. | 2,363 5 1 | .. | .. | .. | 165 6 6 | 78 6 3 | .. | 944 2 9 | 1,440 13 3 | 168 11 2 | 620 5 10 | .. | 5,780 10 10 |
| Reserve 185 | 5,932 2 2 | 55 9 4 | 1,768 4 11 | .. | 393 0 8 | 1,823 3 1 | 169 19 4 | 85 8 6 | 2,041 12 2 | 2,028 2 2 | 434 13 11 | 1,435 12 6 | .. | 16,167 8 9 |
| Reserve 191 | 108 4 6 | .. | .. | .. | .. | 44 18 2 | 82 5 3 | .. | 99 0 8 | 11 15 0 | 11 14 4 | 34 16 0 | .. | 392 13 11 |
| Reserve 194 | .. | 29 11 0 | .. | .. | .. | .. | .. | .. | 48 5 1 | .. | .. | .. | .. | 77 16 1 |
| Reserve 310 | 2 3 7 | 2,299 12 9 | .. | .. | 3 7 11 | 153 8 11 | 27 3 1 | 38 0 0 | 1,653 5 1 | 1,009 11 0 | 37 8 0 | 847 6 9 | .. | 6,071 7 1 |
| Reserve 344 | .. | .. | .. | .. | 1 7 0 | .. | .. | .. | 23 10 2 | .. | 172 9 0 | .. | .. | 197 6 2 |
| Reserve 438 | 149 14 1 | .. | .. | .. | .. | 320 11 2 | 16 14 9 | .. | 242 5 5 | 281 14 2 | 38 3 7 | .. | .. | 1,049 3 2 |
| Reserve 456 | .. | .. | .. | .. | .. | .. | .. | .. | 9 8 8 | .. | .. | .. | .. | 9 8 8 |
| Reserve 461 | .. | .. | .. | .. | .. | 270 19 0 | 6 17 7 | .. | 84 14 8 | 3 13 0 | .. | 10 0 0 | .. | 376 4 3 |
| Reserve 1071 | .. | .. | .. | .. | .. | .. | .. | 116 0 0 | .. | .. | .. | .. | .. | 116 0 0 |
| Reserve 1073 | 123 10 7 | 2,429 9 7 | .. | .. | 7 10 6 | 12 7 10 | 192 3 3 | 15 0 10 | 1,487 3 11 | 1,036 19 1 | 115 6 8 | 612 18 4 | .. | 6,032 10 7 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 838 10 10 | 838 10 10 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 2,150 14 4 | .. | .. | .. | .. | 2,150 14 4 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 285 13 2 | .. | .. | .. | .. | .. | .. | .. | 285 13 2 |
| Experiments | .. | .. | .. | 3,620 8 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3,620 8 5 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | *Cr.* 52 7 0 | .. | .. | .. | .. | *Cr.* 52 7 0 |
| | 6,315 14 11 | 7,177 7 9 | 1,768 4 11 | 3,620 8 5 | 405 6 1 | 3,076 7 10 | 573 9 6 | 254 9 4 | 8,731 15 11 | 5,812 7 8 | 978 6 8 | 3,560 19 5 | 838 10 10 | 43,113 9 3 |
| **WARWICK WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 263 | 2,629 17 1 | .. | 1,433 4 3 | .. | 375 6 11 | 2,556 16 11 | 135 3 8 | 276 0 8 | 2,984 18 2 | 2,074 8 1 | 128 5 0 | 1,097 16 0 | .. | 13,691 16 9 |
| Reserve 316 | 4,277 17 9 | .. | .. | .. | 28 16 8 | 3,356 14 4 | 123 2 9 | 325 13 9 | 1,284 1 3 | 1,562 4 6 | 108 0 0 | 1,000 0 0 | .. | 12,066 11 0 |
| Reserve 321 | 2,150 13 6 | .. | .. | .. | 68 8 10 | 1,912 3 4 | .. | .. | 654 13 11 | 1,052 19 8 | .. | 399 16 0 | .. | 6,238 15 3 |
| Reserve 444 | .. | .. | .. | .. | .. | 583 7 10 | 56 19 11 | 18 0 0 | 265 0 1 | 133 6 7 | 90 17 5 | .. | .. | 1 147 11 10 |
| Reserve 574 | .. | 114 15 6 | .. | .. | .. | 534 0 0 | 17 9 6 | .. | 273 16 1 | 179 11 11 | 37 7 10 | 110 8 0 | .. | 1,267 8 10 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 728 17 7 | 728 17 7 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 1,333 12 11 | .. | .. | .. | .. | 1,333 12 11 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 2,000 11 7 | .. | .. | .. | .. | .. | .. | .. | 2,000 11 7 |
| Experiments | .. | .. | .. | 316 15 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 316 15 7 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | 4 0 6 | .. | .. | .. | .. | 4 0 6 |
| | 9,058 8 4 | 114 15 6 | 1,433 4 3 | 316 15 7 | 472 12 5 | 10,943 14 0 | 332 15 10 | 619 14 5 | 6,800 2 11 | 5,002 10 9 | 364 10 3 | 2,608 0 0 | 728 17 7 | 38,796 1 10 |
| **INGLEWOOD WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 48 | .. | 120 12 11 | .. | .. | .. | 917 8 4 | 5 14 11 | .. | 451 11 0 | 241 1 9 | 308 5 8 | 240 8 0 | .. | 2,285 2 7 |
| Reserve 79 | .. | 2,012 8 7 | .. | .. | 22 12 5 | 1,553 8 7 | 166 18 9 | 111 16 4 | 2,111 11 5 | 919 10 4 | 453 11 2 | 771 4 0 | .. | 8,123 1 7 |
| Reserve 81 | .. | 1,473 4 6 | .. | .. | .. | 1,765 14 11 | 72 12 7 | 51 14 0 | 1,868 15 9 | 646 12 1 | 194 8 9 | 652 8 0 | .. | 6,725 10 7 |
| Reserve 101 | .. | .. | .. | .. | .. | 254 17 11 | 104 2 0 | .. | 194 16 6 | 102 6 7 | 24 0 0 | 68 16 0 | .. | 748 19 0 |
| Reserve 120 | .. | .. | .. | .. | .. | 248 2 3 | .. | .. | 86 12 10 | 63 19 5 | .. | 40 0 0 | .. | 438 14 6 |
| Reserve 122 | .. | 604 15 4 | .. | .. | 19 19 3 | 1,299 5 7 | 161 0 5 | 70 7 9 | 845 12 9 | 296 0 2 | 126 17 6 | 398 12 0 | .. | 3.822 10 9 |
| Reserve 132 | .. | .. | .. | .. | .. | 140 6 1 | .. | .. | 41 1 5 | 21 0 8 | .. | 20 8 0 | .. | 222 16 2 |
| Reserve 134 | .. | 1,333 0 0 | .. | .. | 21 1 10 | 928 17 10 | 220 5 3 | 23 16 11 | 1,086 19 6 | 441 16 1 | 208 16 9 | 618 8 0 | .. | 4,883 2 2 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 553 17 5 | 553 17 5 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 514 0 5 | .. | .. | .. | .. | 514 0 5 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 2,553 14 0 | .. | .. | .. | .. | .. | .. | .. | 2,553 14 0 |
| Experiments | .. | .. | .. | 77 17 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 77 17 11 |
| | .. | 5,544 1 4 | .. | 77 17 11 | 63 13 6 | 9,661 15 6 | 730 13 11 | 257 15 0 | 7,201 1 7 | 2,732 7 1 | 1,315 19 10 | 2,810 4 0 | 553 17 5 | 30,949 7 1 |

# 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, Supervision, &c. | Holidays, Wet Time, &c. | Cartage of Rations, &c. | Camping Allowance | | |
| | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. | £ s. d. |
| **YARRAMAN WORKING PLAN AREA** | | | | | | | | | | | | | | |
| Reserve 120 | 13,833 12 7 | .. | .. | .. | 102 12 5 | 2,859 17 10 | 118 4 3 | 407 12 4 | 5,562 9 2 | 2,259 2 1 | 37 17 6 | 1,356 0 0 | .. | 26,537 8 2 |
| Reserve 151 | 1,853 14 3 | .. | 11 7 1 | .. | .. | 961 7 4 | 129 7 11 | 8 11 3 | 1,691 15 9 | 589 4 6 | 166 6 2 | 631 12 0 | .. | 6,043 6 3 |
| Reserve 257 | 14,686 15 3 | .. | 1,534 1 5 | .. | 92 2 2 | 2,103 11 6 | 463 19 0 | 141 14 2 | 7,558 13 4 | 4,508 19 5 | .. | 2,868 14 0 | .. | 33,958 10 3 |
| Reserve 258 | 6,630 15 4 | .. | 933 11 1 | .. | 42 15 1 | 1,265 17 10 | 337 11 2 | 106 17 10 | 3,891 9 2 | 2,709 2 3 | 429 6 2 | 1,711 2 0 | .. | 18,058 7 11 |
| Reserve 283 | 22,480 3 6 | .. | 2,227 6 10 | .. | 247 0 8 | 7,425 3 0 | 452 1 0 | 460 16 10 | 12,195 17 10 | 9,000 1 5 | .. | 4,094 14 0 | .. | 58,583 5 1 |
| Reserve 289 | 2,781 4 10 | .. | 3,833 13 3 | .. | 420 10 4 | 1,232 15 7 | 812 12 3 | 45 0 8 | 5,273 2 8 | 4,421 10 2 | 37 17 6 | 1,351 4 0 | .. | 20,209 11 3 |
| Reserve 316 | 5,476 2 5 | .. | .. | .. | 34 7 11 | 2,344 11 10 | .. | 122 14 3 | 1,366 12 1 | 800 19 8 | .. | .. | .. | 10,145 8 2 |
| Reserve 328/9/474/673 | 161 0 2 | .. | 15 4 1 | .. | 32 17 8 | 36 11 3 | 229 19 1 | 4 8 11 | 110 2 8 | 84 15 6 | 17 6 0 | 88 18 0 | .. | 781 3 4 |
| Reserve 379 | 3,603 15 4 | .. | .. | .. | 8 9 7 | 685 0 2 | .. | 69 15 3 | 826 4 4 | 290 11 0 | .. | .. | .. | 5,483 15 8 |
| Reserve 466 | .. | .. | .. | .. | .. | 104 16 1 | .. | .. | 34 7 11 | 4 0 9 | .. | .. | .. | 143 4 9 |
| Reserve 528 | .. | 1,510 15 8 | .. | .. | .. | 1,318 16 1 | 378 11 8 | 133 19 0 | 1,344 8 2 | 794 2 7 | 342 19 6 | 637 12 0 | .. | 6,461 4 8 |
| Reserve 618 | 11,095 10 2 | .. | 1,090 12 5 | .. | 46 7 1 | 3,790 3 0 | 1,331 13 10 | 725 15 8 | 4,788 5 8 | 3,382 2 9 | 87 0 0 | 2,412 16 0 | .. | 28,750 6 7 |
| Reserve 909 | 2,459 19 0 | .. | 3,050 5 5 | .. | 8 0 8 | 1,458 16 10 | 467 15 7 | 1,035 16 10 | 2,256 18 10 | 1 584 12 10 | 22 12 0 | 331 18 0 | .. | 12,676 16 0 |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4,698 12 5 | 4,698 12 5 |
| Administration | .. | .. | .. | .. | .. | .. | .. | .. | 2,181 1 9 | .. | .. | .. | .. | 2,181 1 9 |
| Firefighting and Patrol | .. | .. | .. | .. | .. | 1,232 6 6 | .. | .. | .. | .. | .. | .. | .. | 1,232 6 6 |
| Experiments | .. | .. | .. | 3,079 7 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3,079 7 2 |
| Drum Account | .. | .. | .. | .. | .. | .. | .. | .. | Cr. 68 7 0 | .. | .. | .. | .. | Cr. 68 7 0 |
| | 85,062 12 10 | 1,510 15 8 | 12,696 1 7 | 3,079 7 2 | 1,035 3 7 | 26,819 14 10 | 4,721 15 9 | 3,263 3 0 | 49,013 2 4 | 30,429 4 11 | 1,141 4 10 | 15,484 10 0 | 4,698 12 5 | 238,955 8 11 |
| **MISCELLANEOUS** | | | | | | | | | | | | | | |
| Pay-roll Tax | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2,153 13 8 | 2,153 13 8 |
| Experiments | .. | .. | .. | 274 1 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 274 1 5 |
| Photo. Prints and Maps | .. | .. | .. | .. | 1,368 2 0 | .. | .. | .. | .. | .. | .. | .. | .. | 1,368 2 0 |
| Salisbury— | | | | | | | | | | | | | | |
| Depot Stock | .. | .. | .. | .. | .. | .. | .. | .. | Cr.5,302 7 10 | .. | .. | .. | .. | Cr. 5,302 7 10 |
| Store Room Expenses | .. | .. | .. | .. | .. | .. | .. | .. | 3,466 7 11 | .. | .. | .. | .. | 3,466 7 11 |
| | .. | .. | .. | 274 1 5 | 1,368 2 0 | .. | .. | .. | Cr.1,835 19 11 | .. | .. | .. | 2,153 13 8 | 1,959 17 2 |
| Totals | 376,143 11 8 | 46,587 14 1 | 46,193 0 1 | 31,737 0 10 | 14,093 12 1 | 266,029 6 7 | 32,551 8 0 | 43,909 18 9 | 304,122 16 3 | 168,822 19 11 | 14,178 15 1 | 109,967 15 8 | 29,299 18 1 | 1,483,637 17 1 |

## SOURCE OF FUNDS

| | £ s. d. |
|---|---|
| Loan | 1,496,493 12 9 |
| Trust | 33,315 10 3 |
| | £1,529,809 3 0 |

| | £ s. d. |
|---|---|
| Administration | 5,227 2 3 |
| Fares and Freights | 7,410 3 8 |
| Workers' Compensation | 31,433 5 7 |
| Collection and Storage of Seed | 2,100 14 5 |
| | £1,529,809 3 0 |

# APPENDIX I

## Net Area of Plantation Established 1st April, 1959, to 31st March, 1960

| Species | Brisbane | Gympie | Mackay | Maryborough | Monto | Murgon | North Queensland | Warwick | Yarraman | Queensland Totals |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres |
| *Softwoods* | | | | | | | | | | |
| A. Native Conifers— | | | | | | | | | | |
| Hoop Pine .. | 45·0 | 339·2 | .. | .. | 210·4 | 494·0 | 47.0 | .. | 657·0 | 1,792·6 |
| Bunya Pine .. | .. | 28·4 | .. | .. | .. | .. | 0·1 | .. | .. | 28·5 |
| Other Native Conifers .. | 0·5 | 79·9 | .. | .. | 1·6 | .. | 5·4 | .. | 7·1 | 94·5 |
| B. Exotic Conifers— | | | | | | | | | | |
| *P. elliottii* .. | 529·3 | 485·6 | 198·3 | 821·7 | .. | .. | .. | 70·0 | .. | 2,104·9 |
| *P. taeda* .. | 2·1 | .. | .. | .. | .. | .. | .. | .. | .. | 2·1 |
| *P. patula* .. | .. | .. | .. | .. | .. | .. | .. | 0·5 | 160·3 | 160·8 |
| *P. caribaea* .. | 0·5 | 16·0 | 307·0 | 30·6 | .. | .. | 5·5 | .. | .. | 359·6 |
| *P. radiata* .. | .. | .. | .. | .. | .. | .. | .. | 224·5 | 9·7 | 234·2 |
| *P. palustris* .. | .. | .. | .. | .. | .. | .. | .. | 0·5 | .. | 0·5 |
| Others .. .. | .. | 2·0 | 8·0 | .. | 4·0 | .. | .. | 2·5 | 0·3 | 16·8 |
| C. Broadleaved Softwoods— | | | | | | | | | | |
| Silky Oak .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Maple .. .. | .. | 6·0 | .. | .. | .. | .. | .. | .. | .. | 6·0 |
| Red Cedar .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Others .. .. | .. | 5.8 | .. | .. | .. | .. | .. | .. | .. | 5·8 |
| Total Softwoods | 577·4 | 962·9 | 513·3 | 852·3 | 216·0 | 494·0 | 58·0 | 298·0 | 834·4 | 4,806·3 |
| *Eucalypts* | | | | | | | | | | |
| *Euc. grandis* .. .. | 12·5 | 33·0 | .. | .. | .. | .. | .. | .. | .. | 45·5 |
| Other Eucalypts .. | .. | 8·0 | .. | .. | .. | .. | .. | .. | .. | 8·0 |
| Total—Eucalypts | 12.5 | 41·0 | .. | .. | .. | .. | .. | .. | .. | 53·5 |
| Total—All species | 589·9 | 1,003·9 | 513·3 | 852·3 | 216·0 | 494·0 | 58·0 | 298·0 | 834·4 | 4,859·8 |

## APPENDIX J

### Net Area of Effective Plantation Classified into Forestry Districts to 31st March, 1960

| Species | Brisbane | Gympie | Mackay | Mary-borough | Monto | Murgon | North Queens-land | Warwick | Yarraman | Queensland Totals |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres |
| *Softwoods* | | | | | | | | | | |
| A. Native Conifers— | | | | | | | | | | |
| Hoop Pine .. | 427·7 | 15,019·1 | 15·4 | 137·6 | 2,656·4 | 8,258·7 | 835·8 | .. | 16,566·9 | 43,917·6 |
| Kauri Pine .. | 2·2 | 1,553·1 | 0·7 | 69·7 | .. | .. | 290·1 | .. | 7·1 | 1,922·9 |
| Bunya Pine .. | 1·5 | 322·9 | 1·7 | 4·7 | 1·2 | 37·6 | 0·9 | .. | 58·0 | 428·5 |
| Others .. | 5·2 | 51·4 | 0·6 | 1·7 | 1·6 | .. | 0·9 | .. | 0·4 | 61·8 |
| B. Exotic Conifers— | | | | | | | | | | |
| *P. elliottii* .. | 10,836·9 | 7,113·4 | 2,298·8 | 8,809·3 | 70·5 | 54·3 | 7·8 | 691·3 | 916·4 | 30,798·7 |
| *P. taeda* .. | 3,308·0 | 105·1 | 9·8 | 54·1 | 1·0 | 116·2 | 13·7 | 224·7 | 41·4 | 3,874·0 |
| *P. patula* .. | 18·7 | 22·2 | 7·6 | 8·1 | 25·2 | 123·9 | 43·6 | 669·8 | 2,963·0 | 3,882·1 |
| *P. caribaea* .. | 17·2 | 39·9 | 1,174·0 | 94·6 | 1·0 | .. | 14·5 | .. | .. | 1,341·2 |
| *P. radiata* .. | .. | .. | .. | .. | .. | .. | .. | 1,291·1 | 398·2 | 1,689·3 |
| *P. palustris* .. | 252·7 | 1·8 | 5·8 | 1·0 | .. | .. | .. | 9·2 | 2·6 | 273·1 |
| Others .. | 83·2 | 15·4 | 73·2 | 16·2 | 6·7 | 1·7 | 10·1 | 29·4 | 24·2 | 260·1 |
| C. Broadleaved Softwoods— | | | | | | | | | | |
| Silky Oak .. | .. | 175·9 | .. | .. | .. | 32·1 | 31·7 | .. | 675·5 | 915·2 |
| Maple .. .. | .. | 58·6 | .. | .. | .. | .. | 202·3 | .. | .. | 260·9 |
| Red Cedar .. | .. | 12·5 | .. | .. | .. | .. | 29·2 | .. | .. | 41·7 |
| Others .. | 0·1 | 105·1 | .. | 0·3 | 0·8 | 0·9 | 93·6 | .. | .. | 200·8 |
| Total—Softwoods .. | 14,953·4 | 24,596·4 | 3,587·6 | 9,197·3 | 2,764·4 | 8,625·4 | 1,574·2 | 2,915·5 | 21,653·7 | 89,867·9 |
| *Eucalypts* | | | | | | | | | | |
| *Euc. saligna* .. | 42·2 | 900·2 | .. | .. | .. | 33·7 | 0·7 | .. | 215·7 | 1,192·5 |
| *Euc. paniculata* .. | 229·2 | 216·2 | .. | .. | .. | 76·4 | 35·6 | .. | 459·3 | 1,016·7 |
| *Euc. microcorys* .. | 215·4 | 17·5 | .. | .. | .. | .. | 27·7 | .. | 28·7 | 289·3 |
| *Euc. pilularis* .. | 160·9 | .. | .. | .. | .. | .. | 0·2 | .. | .. | 161·1 |
| Other Eucalypts .. | 19·3 | 273·8 | .. | .. | .. | 12·8 | 4·0 | .. | 12·7 | 322·6 |
| Total—Eucalypts .. | 667·0 | 1,407·7 | .. | .. | .. | 122·9 | 68·2 | .. | 716·4 | 2,982·2 |
| Total—All Species.. | 15,620·4 | 26,004·1 | 3,587·6 | 9,197·3 | 2,764·4 | 8,748·3 | 1,642·4 | 2,915·5 | 22,370·1 | 92,850·1 |

## APPENDIX K

### Net Area of Plantation Effective at 31st March, 1960, 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 | 1956–59 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres | Acres |
| *Softwoods* | | | | | | | | | | |
| 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 | 6,828·8 | 43,917·6 |
| Kauri Pine .. | 7·1 | 55·0 | 18·7 | 125·2 | 1,137·5 | 237·4 | 224·8 | 23·0 | 94·2 | 1,922·9 |
| Bunya Pine .. | 6·0 | 28·8 | 74·8 | 0·9 | 123·9 | .. | 2·3 | 144·1 | 47·7 | 428·5 |
| Others .. | .. | 3·7 | 42·6 | 2·4 | 4·6 | .. | .. | 0·3 | 8·2 | 61·8 |
| B. Exotic Conifers— | | | | | | | | | | |
| *P. elliottii* .. | .. | 6·7 | 48·1 | 1,991·6 | 1,130·8 | 506·5 | 3,683·4 | 13,526·7 | 9,904·9 | 30,798·7 |
| *P. taeda* .. | .. | .. | 32·5 | 561·3 | 550·1 | 453·0 | 1,284·7 | 884·0 | 108·4 | 3,874·0 |
| *P. patula* .. | .. | 1·0 | 21·0 | 160·1 | 462·4 | 189·0 | 1,356·7 | 1,216·0 | 475·9 | 3,882·1 |
| *P. caribaea* .. | .. | .. | .. | .. | .. | .. | 2·1 | 422·3 | 916·8 | 1,341·2 |
| *P. radiata* .. | .. | 0·4 | 67·8 | 151·9 | 1·9 | .. | 131·5 | 622·4 | 713·4 | 1,689·3 |
| *P. palustris* .. | .. | .. | 0·2 | 28·1 | 108·7 | 44·1 | 45·8 | 39·2 | 7·0 | 273·1 |
| Others .. | .. | 1·6 | 18·8 | 38·5 | 20·5 | 1·0 | 47·3 | 99·6 | 32·8 | 260·1 |
| 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 | 10·6 | 260·9 |
| 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 | 1·7 | 17·5 | 10·6 | 200·8 |
| Total—Softwoods .. | 44·6 | 311·4 | 2,806·9 | 7,796·5 | 13,308·3 | 3,679·0 | 17,492·1 | 25,269·8 | 19,159·3 | 89,867·9 |
| *Eucalypts* | | | | | | | | | | |
| *Euc. saligna* .. | .. | .. | 1·0 | 1·2 | 145·0 | 129·3 | 756·7 | 159·3 | .. | 1,192·5 |
| *Euc. paniculata* .. | .. | .. | 1·4 | 532·1 | 402·1 | 77·3 | 1·8 | 2·0 | .. | 1,016·7 |
| *Euc. microcorys* .. | .. | .. | 5·3 | 90·0 | 194·0 | .. | .. | .. | .. | 289·3 |
| *Euc. pilularis* .. | .. | .. | 0·2 | 97·9 | 56·9 | .. | 6·1 | .. | .. | 161·1 |
| Other Eucalypts .. | .. | .. | 0·5 | 6·4 | 22·7 | 9·4 | 35·1 | 29·1 | 219·4 | 322·6 |
| Total—Eucalypts .. | .. | .. | 8·4 | 727·6 | 820·7 | 216·0 | 799·7 | 190·4 | 219·4 | 2,982·2 |
| 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 | 19,378·7 | 92,850·1 |

# APPENDIX L

## Areas of Natural Forest Treated

A.—Eucalypts

| Sub-District | Reserve No. | Treated 1959–60 | First Treatment 1959–60 | Total as at 30th June, 1960 |
|---|---|---|---|---|
| | | Acres | Acres | Acres |
| Brisbane | 571 | 120 | 120 | 303 |
| | 69 | 215 | .. | 1,535 |
| | 1,376 | 108 | .. | 1,480 |
| | 215 | 335 | .. | 1,050 |
| | 702 | 75 | .. | 2,060 |
| | 494 | 68 | .. | 934 |
| | 446 | .. | .. | 1,094 |
| | 667 | .. | .. | 914 |
| | 309/1526 | 115 | 15 | 3,523 |
| | 1,355 | .. | .. | 1,625 |
| | 727 | 53 | .. | 976 |
| | 1,635 | 60 | 60 | 260 |
| Total | .. | 1,149 | 195 | 15,754 |
| Bundaberg | 80 | 727 | .. | 9,484 |
| | 723 | .. | .. | 564 |
| | 832/837 | 1,230 | 477 | 16,783 |
| Total | .. | 1,957 | 477 | 26,831 |
| Clermont | 117 | .. | .. | 10,820 |
| | 127 | .. | .. | 23,055 |
| Total | .. | .. | .. | 33,875 |
| Dalby | 93 | .. | .. | 18,998 |
| | 4 | .. | .. | 11,063 |
| | 83 | .. | .. | 4,876 |
| | 78 | .. | .. | 1,130 |
| | 302 | .. | .. | 8,580 |
| | 106 | .. | .. | 1,275 |
| Total | .. | .. | .. | 45,922 |
| Fraser Island | 3 | 308 | 108 | 18,561 |
| Total | .. | 308 | 108 | 18,561 |
| Gympie | 393 | .. | .. | 3,084 |
| | 234 | .. | .. | 1,833 |
| | 502 | 121 | 60 | 1,628 |
| | 627 | 179 | 65 | 2,810 |
| | 700 | .. | .. | 3,672 |
| | 124 | .. | .. | 770 |
| | 959 | 54 | .. | 1,241 |
| | 950/1 | .. | .. | 1,160 |
| | 392 | .. | .. | 84 |
| | 963 | 32 | 32 | 50 |
| | 952 | .. | .. | 86 |
| Total | .. | 386 | 157 | 16,418 |
| Inglewood | 101 | .. | .. | 8,512 |
| | 81 | .. | .. | 7,490 |
| | 120 | .. | .. | 298 |
| | 132 | .. | .. | 207 |
| Total | .. | .. | .. | 16,507 |
| Kilcoy | 370 | 315 | 100 | 3,893 |
| | 893 | 120 | 120 | 3,833 |
| | 637 | .. | .. | 1,168 |
| Total | .. | 435 | 220 | 8,894 |
| Many Peaks | 46 | .. | .. | 1,270 |
| | 28 | 1,055 | 848 | 11,887 |
| | 150 | .. | .. | 1,811 |
| Total | .. | 1,055 | 848 | 14,968 |

APPENDIX L—continued

**Areas of Natural Forest Treated—continued**

A.—Eucalypts—*continued*

| Sub-District | Reserve No. | Treated 1959–60 | First Treatment 1959–60 | Total as at 30th June, 1960 |
|---|---|---|---|---|
| | | Acres | Acres | Acres |
| Maryborough | 958 | .. | .. | 15,926 |
| | 57 | 875 | .. | 23,720 |
| | 12 | 30 | .. | 5,426 |
| | 8 | 1,110 | 550 | 15,033 |
| | 1 | .. | .. | 1,632 |
| | 191/864 | 2,278 | 990 | 14,815 |
| | 676 | 400 | 400 | 7,524 |
| Total | .. | 4,693 | 1,940 | 84,076 |
| Mary Valley | 135 | .. | .. | 159 |
| Total | .. | .. | .. | 159 |
| Murgon | 12/24 | 925 | .. | 18,128 |
| | 221 | 60 | .. | 2,682 |
| | 424/427 | .. | .. | 80 |
| Total | .. | 985 | .. | 20,890 |
| North Coast | 318/583 | 420 | .. | 9,225 |
| | 249 | .. | .. | 1,185 |
| | 60 | 39 | 39 | 1,674 |
| | 173 | 448 | .. | 3,135 |
| | 108/106/442 | 70 | .. | 1,772 |
| | 313 | 26 | .. | 1,650 |
| | 445/531/877 | 380 | .. | 200 |
| | 351 | .. | .. | 580 |
| | 689 | .. | .. | 340 |
| Total | .. | 1,383 | 39 | 19,761 |
| North Queensland | 194 | .. | .. | 175 |
| | 245 | .. | .. | 339 |
| | 343 | .. | .. | 200 |
| | 438 | 160 | 160 | 2,797 |
| | 461 | .. | .. | 2,785 |
| Total | .. | 160 | 160 | 6,296 |
| Warwick | 444 | .. | .. | 4,601 |
| | 574 | 130 | .. | 5,306 |
| Total | .. | 130 | .. | 9,907 |
| Yarraman | 283 | .. | .. | 1,881 |
| | 257 | .. | .. | 125 |
| | 527/8/9 | 680 | .. | 5,972 |
| | 618 | .. | .. | 50 |
| Total | .. | 680 | .. | 8,028 |
| Total—Eucalypts | .. | 13,321 | 4,144 | 346,847 |

B—Cypress Pine

| Sub-District | Reserve No. | Treated 1959–60 | First Treatment 1959–60 | Total as at 30th June, 1960 |
|---|---|---|---|---|
| | | Acres | Acres | Acres |
| Bundaberg | 278 | 174 | 174 | 1,551 |
| Total | .. | 174 | 174 | 1,551 |
| Dalby | 4 | 167 | .. | 280 |
| | 302 | 1,853 | 1,779 | 35,676 |
| | 78 | 2,919 | 1,831 | 67,109 |
| | 93 | 342 | 342 | 2,854 |
| | 106 | 223 | 223 | 760 |
| | 126/135 | .. | .. | 3,747 |
| | 150 | 336 | 47 | 6,646 |
| | 154 | 2,560 | 648 | 31,186 |
| | 155 | 718 | 718 | 4,378 |
| | 161 | 16 | 16 | 16 |
| | 389 | 24 | 24 | 24 |
| | 127 | .. | .. | 710 |
| Total | .. | 9,158 | 5,628 | 153,386 |

APPENDIX L—continued

**Areas of Natural Forest Treated**—continued

B—Cypress Pine—*continued*

| Sub-District | Reserve No. | Treated 1959-60 | First Treatment 1959-60 | Total as at 30th June, 1960 |
|---|---|---|---|---|
| | | Acres | Acres | Acres |
| Fraser Island .. .. .. .. .. | 3 | .. | .. | 4,424 |
| Total .. .. .. .. | .. | .. | .. | 4,424 |
| Inglewood .. .. .. .. .. .. | 48 | 76 | .. | 5,242 |
| | 79 | 929 | .. | 31,824 |
| | 81 | 681 | 681 | 6,593 |
| | 101 | .. | .. | 540 |
| | 120 | .. | .. | 515 |
| | 122 | 316 | .. | 18,300 |
| | 134 | 788 | .. | 14,790 |
| Total .. .. .. .. | .. | 2,790 | 681 | 77,804 |
| Many Peaks .. .. .. .. .. | 34 | .. | .. | 2 496 |
| Total .. .. .. .. | .. | .. | .. | 2,496 |
| Total—Cypress Pine .. .. | .. | 12,122 | 6,483 | 239,661 |

C—Rain Forest

| Sub-District | Reserve No. | Second Treatment 1959-60 | First Treated 1959-60 | | | | First Treatment completed 1959-60 | Total as at 30th June, 1960 |
|---|---|---|---|---|---|---|---|---|
| | | | Brushed | Ring-barked and Thinned | Logged under Tree-marking Conditions | Trees Interplanted | | |
| | | Acres | Acres | Acres | Acres | Number | Acres | Acres |
| Natural Hoop Pine—Bundaberg .. .. | 169 | .. | .. | .. | .. | .. | .. | 9,902 |
| Natural Rain Forest—Northern Queensland .. | 99/194 | 303 | 134 | 125 | 72 | 3,200 | 104 | 835 |
| | 185 | .. | 2 | .. | 296 | .. | .. | 214 |
| | 191 | .. | .. | .. | .. | .. | .. | 71 |
| | 310 | 433 | 159 | 155 | 746 | 250 | 155 | 547 |
| | 251 | .. | .. | .. | 420 | .. | .. | .. |
| | 344 | .. | .. | .. | 850 | .. | .. | .. |
| | 350 | .. | .. | .. | 450 | .. | .. | .. |
| | 458 | .. | .. | .. | 400 | .. | .. | .. |
| | 557 | .. | .. | .. | 754 | .. | .. | .. |
| | 607 | .. | .. | .. | 324 | .. | .. | .. |
| | 700 | .. | .. | .. | 90 | .. | .. | .. |
| | 933 | .. | .. | .. | 120 | .. | .. | .. |
| | 1073 | 187 | 159 | 178 | 316 | .. | 178 | 551 |
| Total .. .. .. | .. | 923 | 454 | 458 | 4,838 | 3,450 | 437 | 2,218 |
| Total—Rain Forest .. | .. | 923 | 454 | 458 | 4,838 | 3,450 | 437 | 12,120 |

| Grand Total— | Acres |
|---|---|
| Eucalypts .. .. .. .. .. .. .. .. | 346,847 |
| Cypress Pine .. .. .. .. .. .. .. .. | 239,661 |
| Rain Forest .. .. .. .. .. .. .. .. | 12,120 |
| | 598,628 |

# APPENDIX M

## Summary of Forest Survey Work, Year ended 30th June, 1960

INSPECTIONS AND INVESTIGATION SURVEYS

| Area | Parish | Type | Miles |
|---|---|---|---|
| Reserve 54, Portion 13v | Abinger | Inspection | 17 |
| Mapala Holding | Comelybank | Inspection | 18 |
| Portion 3 | Coomooboolaroo | Inspection | 4 |
| Reserve 607 | Dinden | Road Investigation | 31 |
| Reserve 14, Portions 1 and 2 | Dromedary | Inspection | 29 |
| Reserve 1073 | Dulanban | Road Investigation | 8 |
| Reserve 3 | Fraser Island | Reconnaissance and Road Investigation | 118 |
| Repulse Creek Holding | Goomally | Inspection | 26 |
| Minerva Holding, Portion 7 | Minerva | Inspection and Road Investigation | .. |
| Reserve 146 | Monkhouse | Road Investigation | 8 |
| Bedourie Holding | Moowurie | Inspection | 9 |
| Reserve 756 | Palmerston | Road Investigation | 62 |
| Palmgrove Holding | Palmgrove | Inspection | 15 |
| Portions 7, 8, 10 | Pearl Creek | Inspection | 27 |
| Portions 1, 2, 3, 4, 5 | Spottswood | Inspection | 22 |
| Portions 1, 3, 4 | Wafer | Inspection | 41 |
| Reserves 28, 268 | Waterview | Reconnaissance and Road Investigation | 85 |
| | | Total | 520 |

ASSESSMENT SURVEYS

| Area | Parish | Acreage | Miles | Chains |
|---|---|---|---|---|
| Reserve 54 | Abinger | 9,070 | 31 | 22 |
| Portion 13v | Abinger | 4,950 | 26 | 38 |
| Coorada Holding | Atkins | .. | 10 | 42 |
| Reserve 14, Portion 1 | Dromedary | .. | 7 | 20 |
| Repulse Creek North Holding | Goomally | 17,000 | 239 | 46 |
| Roundstone Holding | Mayne | 630 | 10 | 26 |
| Tackeracka Holding | Mungabunda | 700 | 9 | 6 |
| Portion 7 | Pearl Creek | 4,500 | 30 | 4 |
| Punchbowl Holding | Tuturin | 1,000 | 14 | 33 |
| Portion 1 | Tuturin | 650 | 5 | 73 |
| Portion 3 | Wafer | 12,570 | 26 | 61 |
| Portion 4 | Wafer | 15,500 | 49 | 33 |
| | Total | 66,570 | 461 | 4 |

FOREST INVENTORY SURVEY

| Reserve | Parish | Permanent Plots | Acreage | Compartment Boundaries | | Stripping | |
|---|---|---|---|---|---|---|---|
| | | | | Miles | Chains | Miles | Chains |
| 302 | Pelham, Quandong | 320 | 51,200 | 195 | 1 | 191 | 9 |
| 302 | Coondarra, Goldsmith | 461 | 73,760 | .. | | 338 | 41 |
| 174 | Boondandilla | 227 | 43,000 | 132 | 33 | 220 | 20 |
| Total for Western Cypress and Hardwood | | 1,008 | 167,960 | 327 | 34 | 749 | 70 |

| Reserve | Parish | Permanent Plots | Random Plots | Acreage | Stripping | |
|---|---|---|---|---|---|---|
| | | | | | Miles | Chains |
| 792 | Kilcoy | 196 | .. | 23,400 | 98 | 52 |
| 274 | Conondale | .. | 114 | 23,700 | .. | |
| 1635 | Kholo, Sahl | 106 | .. | 9,500 | 69 | 74 |
| 1526 | Enoggera | 17 | .. | 1,550 | 5 | 76 |
| 309 | Enoggera | 75 | .. | 6,750 | 25 | 20 |
| 1355 | Dundas | 73 | .. | 6,500 | 30 | 41 |
| Total for Coastal Hardwood | | 467 | 114 | 71,400 | 230 | 23 |

## APPENDIX M—continued

### Summary of Forest Survey Work, Year ended 30th June, 1960—continued

FORESTRY INVENTORY SURVEY—continued

| Reserve | Parish | Remeasure | | New Plots | | Site Index Sampling | | |
|---|---|---|---|---|---|---|---|---|
| | | Plots | Acreage | Plots | Acreage | Miles | Chains | Acreage |
| 392 .. | Como .. .. .. | 38 | 400 | 5 | 50 | 37 | 75 | 900 |
| 909 .. | Crow's Nest .. .. | 90 | 984 | 4 | 49 | 19 | 0 | 390 |
| 124 .. | Glastonbury .. .. | 73 | 722 | 24 | 249 | 15 | 20 | 271 |
| 263 .. | Pikedale .. .. .. | 106 | 980 | 24 | 420 | 83 | 50 | 1,400 |
| 242 .. | Widgee .. .. .. | 46 | 441 | 21 | 576 | 30 | 70 | 567 |
| Total for Softwood Plantations .. | | 353 | 3,527 | 78 | 1,344 | 186 | 55 | 3,537 |

COMPARTMENT, FIREBREAK, SOIL AND ROAD SURVEYS

| Reserve | Parish | Type of Survey | Miles | Chains |
|---|---|---|---|---|
| 435 .. .. .. .. | Amamoor, Kandanga .. | Road, Compartment, Firebreak .. | 22 | 56 |
| 618 .. .. .. .. | Avoca .. .. .. .. | Firebreak, Miscellaneous .. .. | 2 | 54 |
| Bayfield Holding, &c. .. | Bayfield .. .. .. | Soil .. .. .. .. .. | 16 | 70 |
| 611 .. .. .. .. | Beerwah .. .. .. | Road, Firebreak, Compartment, Soil | 38 | 0 |
| 561 .. .. .. .. | Bribie .. .. .. .. | Road, Firebreak, Compartment, Soil | 16 | 0 |
| 135 .. .. .. .. | Brooloo .. .. .. | Road, Firebreak, Compartment, Soil | 21 | 12 |
| 67 .. .. .. .. | Bulburin .. .. .. | Firebreak, Miscellaneous .. .. | 10 | 78 |
| 700 .. .. .. .. | Canning, Toorbul .. .. | Road, Firebreak, Compartment, Soil | 20 | 0 |
| 135 .. .. .. .. | Cambroon .. .. .. | Compartment, Miscellaneous .. | 9 | 58 |
| 283 .. .. .. .. | Colinton .. .. .. | Firebreak, Compartment, Road .. | 12 | 69 |
| 28 .. .. .. .. | Coominglah .. .. .. | Road .. .. .. .. .. | 30 | 20 |
| 289, 316 .. .. .. | Cooyar .. .. .. | Firebreak, Road, Miscellaneous .. | 2 | 63 |
| 257 .. .. .. .. | Cooyar .. .. .. | Boundary, Road, Miscellaneous .. | 7 | 51 |
| 258 .. .. .. .. | Cooyar .. .. .. | Firebreak, Miscellaneous .. .. | 3 | 62 |
| 185 .. .. .. .. | Danbulla .. .. .. | Compartment, Road .. .. .. | 25 | 67 |
| 607 .. .. .. .. | Dinden .. .. .. | Road .. .. .. .. .. | 38 | 60 |
| 8 .. .. .. .. | Doongul .. .. .. | Compartment .. .. .. .. | 4 | 57 |
| 3 .. .. .. .. | Fraser Island .. .. .. | Strip, Road, Compartment .. .. | 94 | 67 |
| 298, 154 .. .. .. | Gallangowan .. .. .. | Firebreak, Road, Miscellaneous .. | 34 | 23 |
| 124 .. .. .. .. | Glastonbury .. .. .. | Firebreak, Road, Compartment .. | 12 | 13 |
| 256 .. .. .. .. | Imbil .. .. .. .. | Compartment, Road, Firebreak .. | 8 | 21 |
| 572 .. .. .. .. | Kenilworth .. .. .. | Boundary .. .. .. .. | 3 | 0 |
| 792 .. .. .. .. | Kilcoy .. .. .. .. | Compartment .. .. .. .. | 13 | 31 |
| 658 .. .. .. .. | Macartney .. .. .. | Compartment, Soil .. .. .. | 40 | 0 |
| 728 .. .. .. .. | Maleny .. .. .. | Boundary .. .. .. .. | 4 | 69 |
| 612, 138 .. .. .. | Manumbar .. .. .. | Firebreak, Miscellaneous .. .. | 3 | 59 |
| 249, 318 .. .. .. | Maroochy .. .. .. | Compartment, Miscellaneous .. | 4 | 0 |
| 20, Portion 8 .. .. | Maryvale .. .. .. | Soil, Firebreak, Compartment .. | 57 | 90 |
| 146 .. .. .. .. | Monkhouse .. .. .. | Road, Boundary .. .. .. | 3 | 60 |
| 343 .. .. .. .. | Monsildale .. .. .. | Firebreak .. .. .. .. | 3 | 14 |
| 673 .. .. .. .. | Monsildale .. .. .. | Firebreak, Compartment, Miscellaneous | 6 | 30 |
| 207, 137 .. .. .. | Monsildale, Yabba .. .. | Firebreak, Compartment, Miscellaneous | 9 | 62 |
| 120 .. .. .. .. | Neumgna .. .. .. | Road, Miscellaneous .. .. | 13 | 68 |
| 95, 107 .. .. .. | New Cannindah, Minerva .. | Firebreak, Road, Compartment .. | 29 | 43 |
| 350 .. .. .. .. | Niagara .. .. .. | Road .. .. .. .. .. | 2 | 50 |
| 997 .. .. .. .. | Noosa .. .. .. .. | Road, Boundary, Miscellaneous .. | 7 | 39 |
| 279 .. .. .. .. | Ongera .. .. .. | Road, Boundary .. .. .. | 5 | 8 |
| 359 .. .. .. .. | Palen .. .. .. .. | Compartment, Firebreak .. .. | 2 | 69 |
| 756 .. .. .. .. | Palmerston .. .. .. | Road, Boundary .. .. .. | 21 | 32 |
| 263, 321 .. .. .. | Pikedale .. .. .. | Soil, Road, Compartment, Miscellaneous | 35 | 25 |
| 915 .. .. .. .. | Poona (Tuan) .. .. .. | Soil, Firebreak, Compartment .. | 20 | 3 |
| 458 .. .. .. .. | Stone .. .. .. .. | Road .. .. .. .. .. | 4 | 20 |
| 1004 .. .. .. .. | Toolara .. .. .. | Soil, Firebreak, Compartment .. | 114 | 42 |
| 28, 268 .. .. .. | Waterview, Hinchinbrook .. | Road, Boundary .. .. .. | 30 | 43 |
| 242 .. .. .. .. | Widgee .. .. .. | Firebreak, Road, Miscellaneous .. | 10 | 13 |
| | | Total .. .. .. .. | 881 | 10 |

APPENDIX M—continued

**Summary of Forest Survey Work, Year ended 30th June, 1960—continued**

THEODOLITE CONTROL SURVEYS

| Reserve | Parish | Miles | Chains |
|---|---|---|---|
| 135 | Brooloo | 1 | 53 |
| 99 | Manumbar | 0 | 32 |
| 312 | Manumbar | 0 | 62 |
| 95 | New Cannindah | 8 | 22 |
| 392 | Como | 5 | 11 |
| 1004 | Toolara | 5 | 33 |
| 263 | Pikedale | 5 | 13 |
| 435 | Amamoor | 0 | 37 |
| 302 | Pelham and Brownlie | 38 | 28 |
| 67 | Bulburin | 8 | 55 |
| 274 | Cambroon | 8 | 38 |
| 792 | Kilcoy | 4 | 69 |
| 788 | Conondale | 6 | 25 |
| 274 | Conondale | 3 | 61 |
| 628 | Goomboorian | 0 | 45 |
| 496 | Monsildale | 1 | 47 |
| | Total | 99 | 71 |

## APPENDIX N

**State Forests, Timber Reserves and National Parks, listed by Forestry Districts and Sub-Districts, at 30th June, 1960**

| Forestry District | Sub-District | State Forests | | | Timber Reserves | | | National Parks | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | No. | Area | | No. | Area | | No. | Area | |
| | | | A. | R. P. | | A. | R. P. | | A. | R. P. |
| North Queensland | Atherton .. .. | 23 | 264,194 | 0 15 | 41 | 1,270,186 | 0 20 | 45 | 116,893 | 3 39 |
| | Ingham .. .. | 6 | 183,593 | 0 0 | 13 | 472,854 | 2 37 | 26 | 192,946 | 1 31 |
| | Total .. | 29 | 447,787 | 0 15 | 54 | 1,743,040 | 3 17 | 71 | 309,840 | 1 30 |
| Mackay .. .. | Mackay .. .. | 6 | 95,457 | 0 0 | 24 | 163,864 | 1 0 | 89 | 267,648 | 2 29 |
| | Rockhampton .. | 9 | 209,023 | 1 0 | 18 | 172,538 | 0 22 | 15 | 2,597 | 0 0 |
| | Clermont .. | 3 | 132,378 | 3 35 | 10 | 210,762 | 2 0 | 2 | 114,800 | 0 0 |
| | Total .. | 18 | 436,859 | 0 35 | 52 | 547,164 | 3 22 | 106 | 385,045 | 2 29 |
| Monto .. .. | Monto .. .. | 15 | 376,259 | 1 35 | 38 | 217,604 | 3 26 | 4 | 115 | 2 0 |
| | Kalpowar .. | 7 | 25,189 | 3 20 | 16 | 50,235 | 1 16 | .. | .. | |
| | Total .. | 22 | 401,449 | 1 15 | 54 | 267,840 | 1 2 | 4 | 115 | 2 0 |
| Maryborough .. | Maryborough .. | 38 | 355,314 | 3 1 | 19 | 31,302 | 2 37 | 5 | 9,935 | 0 0 |
| | Fraser Island .. | 1 | 392,138 | 0 0 | .. | .. | | .. | .. | |
| | Bundaberg .. | 17 | 144,295 | 0 4 | 29 | 91,164 | 3 7 | .. | .. | |
| | Total .. | 56 | 891,747 | 3 5 | 48 | 122,467 | 2 4 | 5 | 9,935 | 0 0 |
| Dalby .. .. | Dalby .. .. | 44 | 1,502,154 | 3 14 | 13 | 124,177 | 0 39 | 2 | 24,545 | 0 0 |
| Gympie .. .. | Gympie .. .. | 34 | 291,252 | 2 37 | 4 | 2,704 | 0 7 | 5 | 954 | 2 7 |
| | Mary Valley .. | 10 | 142,851 | 0 0 | 3 | 353 | 0 7 | 1 | 640 | 0 0 |
| | Total .. | 44 | 434,103 | 2 37 | 7 | 3,057 | 0 14 | 6 | 1,594 | 2 7 |
| Murgon .. .. | Murgon .. .. | 14 | 95,933 | 2 13 | 11 | 54,920 | 1 3 | .. | .. | |
| | Gallangowan .. | 4 | 37,910 | 0 0 | .. | .. | | .. | .. | |
| | Jimna .. .. | 4 | 83,889 | 0 0 | 2 | 5,420 | 0 0 | .. | .. | |
| | Total .. | 22 | 217,732 | 2 13 | 13 | 60,340 | 1 3 | .. | .. | |
| Yarraman .. | Yarraman .. | 26 | 111,351 | 3 8 | 17 | 23,832 | 1 9 | 2 | 11,116 | 1 18 |
| | Benarkin .. .. | 3 | 54,362 | 0 0 | 5 | 6,537 | 2 26 | .. | .. | |
| | Total .. | 29 | 165,713 | 3 8 | 22 | 30,369 | 3 35 | 2 | 11,116 | 1 18 |
| Brisbane .. .. | Brisbane .. .. | 47 | 152,938 | 3 38 | 32 | 64,847 | 1 29 | 37 | 81,126 | 2 19 |
| | North Coast .. | 34 | 97,997 | 3 30 | 20 | 6,265 | 2 36 | 11 | 3,915 | 2 13 |
| | Total .. | 81 | 250,936 | 3 28 | 52 | 71,113 | 0 25 | 48 | 85,042 | 0 32 |
| Warwick .. .. | Warwick .. .. | 15 | 69,262 | 3 37 | 9 | 23,473 | 3 18 | 11 | 15,819 | 2 0 |
| | Inglewood .. | 12 | 300,734 | 3 35 | 13 | 62,694 | 2 28 | .. | .. | |
| | Total .. | 27 | 369,997 | 3 32 | 22 | 86,168 | 2 6 | 11 | 15,819 | 2 0 |
| | Grand Total .. | 372 | 5,118,483 | 1 2 | 337 | 3,055,739 | 3 7 | 255 | 843,054 | 0 36 |

At 30th June, 1960—

Total area reserved for—

| | A. | R. | P. |
|---|---|---|---|
| State Forests .. .. .. .. .. .. .. | 5,118,483 | 1 | 2 |
| Timber Reserves .. .. .. .. .. .. | 3,055,739 | 3 | 7 |
| National Parks .. .. .. .. .. .. .. | 843,054 | 0 | 36 |
| Total Reservations .. .. .. .. | 9,017,277 | 1 | 5 |

# APPENDIX O

## Reservations for the Year ended 30th June, 1960

*State Forests.*—One new State Forest of 10,100 acres was proclaimed during the year, viz. R. 1137 Hull and Rockingham, North Queensland Forestry District ; and 13,560 acres 0 roods 38 perches were added to existing reserves. Eight reserves were cancelled for inclusion in adjoining State Forests.

*Timber Reserves.*—At 30th June, 1960, the number of Timber Reserves, 337, was the same as at 30th June, 1959, there being four new reserves and four cancellations during the year.

Four new areas totalling 35,357 acres 3 roods 36 perches were reserved, being as follows :—

| A. | R. | P. | | Forestry District |
|---|---|---|---|---|
| 82 | 3 | 36 | 527 Herberton | North Queensland |
| 70 | 0 | 0 | 1069 Poona | Maryborough |
| 35,000 | 0 | 0 | 7 Koolbellup | Dalby |
| 205 | 0 | 0 | 190 Moraby | Dalby |

Four reserves totalling 6,115 acres 2 roods 14 perches were converted to State Forests, and 740 acres 1 rood 18 perches were released.

*National Parks.*—Three new National Parks were proclaimed during the year and one was cancelled, giving an increase of two National Parks.

New National Parks were :—

| A. | R. | P. | | Forestry District |
|---|---|---|---|---|
| 1,669 | 3 | 20 | R. 800 Mooloolah (Mooloolah River) | Brisbane |
| 3,380 | 0 | 0 | R. 531 Palm (Orpheus Island) | North Queensland |
| 1,750 | 0 | 0 | R. 1072 Dayman (Woody Island) | Maryborough |

1ST JULY, 1959, TO 30TH JUNE, 1960

### STATE FORESTS

| | No. | A. | R. | P. | |
|---|---|---|---|---|---|
| At 1st July, 1959 | 379 | 5,104,923 | 0 | 4 | |
| Proclaimed 1–7–59 to 30–6–60 | 1 | 10,100 | 0 | 0 | |
| V.C.L. added to existing reserves | | 3,478 | 1 | 38 | |
| Areas released | | 18 | 1 | 0 | *Cr.* |
| | 380 | 5,118,483 | 1 | 2 | |
| Reserves cancelled for inclusion in adjoining reserves | 8 | | | | |
| Total at 30th June, 1960 | 372 | 5,118,483 | 1 | 2 | |

### TIMBER RESERVES

| | | | | | |
|---|---|---|---|---|---|
| At 1st July, 1959 | 337 | 3,027,237 | 3 | 3 | |
| Proclaimed 1–7–59 to 30–6–60 | 4 | 35,357 | 3 | 36 | |
| | 341 | 3,062,595 | 2 | 39 | |
| Reserves converted to State Forests | 4 | 6,115 | 2 | 14 | |
| Areas released | | 740 | 1 | 18 | |
| Total at 30th June, 1960 | 337 | 3,055,739 | 3 | 7 | |

### NATIONAL PARKS

| | | | | | |
|---|---|---|---|---|---|
| At 1st July, 1959 | 253 | 838,066 | 3 | 26 | |
| Proclaimed 1–7–59 to 30–6–60 | 3 | 6,799 | 3 | 20 | |
| V.C.L. added | | 24 | 1 | 30 | |
| | 256 | 844,891 | 0 | 36 | |
| Reserves cancelled | 1 | 1,758 | 0 | 0 | |
| Areas released | | 79 | 0 | 0 | |
| Total at 30th June, 1960 | 255 | 843,054 | 0 | 36 | |

## APPENDIX P

### Expenditure, Surveys, Year ended 30th June, 1960

| Particulars of Survey— | £ s. d. | £ s. d. |
|---|---|---|
| Harvesting and Marketing Project— | | |
| Forest Inventory Surveys— | | |
| Reserve 309, Enoggera | 2,024 14 2 | |
| Reserve 1526, Enoggera | 431 6 3 | |
| Reserve 1355, Dundas | 2,378 3 10 | |
| Reserve 1635, Kholo, Sahl | 3,177 11 4 | |
| Reserve 792, Kilcoy | 5,425 11 1 | |
| Reserve 274, Conondale | 584 16 0 | |
| Reserve 302, Pelham, Quandong, Coondarra | 16,673 18 2 | |
| Reserve 174, Boondandilla | 3,938 6 9 | |
| Reserve 909, Crow's Nest | 399 15 5 | |
| Reserve 263, Pikedale | 1,956 13 4 | |
| Reserve 124, Glastonbury | 655 2 8 | |
| Reserve 242, Widgee | 498 19 4 | |
| Reserve 392, Como | 468 9 4 | |
| Miscellaneous Remeasures— | | |
| Dalby | 1,429 12 3 | |
| Brisbane | 68 0 10 | |
| Yarraman | 3 9 6 | |
| Gympie | 364 10 0 | |
| Maryborough | 164 11 7 | |
| Murgon | 26 14 1 | |
| | | 40,670 5 11 |
| Road, Boundary and Miscellaneous Surveys— | | |
| Gympie district | 76 9 3 | |
| Murgon district | 608 7 9 | |
| Brisbane district | 268 0 9 | |
| Maryborough district | 915 12 7 | |
| Warwick district | 2 2 2 | |
| Yarraman district | 16 1 2 | |
| Mackay district | 328 9 11 | |
| North Queensland district | 5,405 9 1 | |
| | | 7,620 12 8 |
| Theodolite Surveys— | | |
| South Queensland | | 826 8 3 |
| Assessment Surveys— | | |
| Mackay District | | 5,472 15 4 |
| Survey Prints, Maps and Mountings | | 1,107 6 0 |
| Reforestation Branch Projects— | | |
| As detailed in Appendix H | | 14,093 12 1 |
| Total Expenditure | | £69,791 0 3 |

## APPENDIX Q

### Distribution of Personnel, 30th June, 1960

| | |
|---|---|
| Salaried officers | 353 |
| Other employees | 1,729 |
| | 2,082 |

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