

## FEDERATED MALAY STATES.

### REPORT ON FOREST ADMINISTRATION FOR THE YEAR 1924.

#### CHAPTER I.

#### CONSTITUTION OF FORESTS.

##### I.—EXPLORATION.

Very little exploration was done during the year. All easily accessible forest that was in danger of destruction, or was likely to be alienated, has already been examined. The remainder is mountain or swamp land, or is at present inaccessible owing to lack of means of communication.

2. An area of about 40,000 acres south-east of the Rompin Forest Reserve, Pahang, was examined and rejected for purposes of forest reservation. This area comprises the two areas shown as 28 and 29 on the map published in 1920 in connection with the report "Wood in the Federated Malay States."

##### II.—FOREST RESERVE PROPOSALS AND SETTLEMENTS.

3. The settlement of 163,568 acres was completed during the year. Proposals for further reservation covering 749,148 acres have been preliminarily notified in the *Government Gazette*, and are in process of settlement. In addition to this the reservation of 346,000 acres was under consideration but had not been definitely recommended.

4. PERAK.—An extension of 39,270 acres was added to the Besout Reserve in the Batang Padang district. This area is reserved mainly on account of its timber. It also contains some gutta-percha. In the same district and adjoining the Besout extension 7,760 acres were reserved for timber purposes. It is to be known as the Sirgala Forest Reserve.

An area of 546 acres was excised from the Pondok Tanjong Reserve, and 265 acres from the Parit Reserve, both for agricultural purposes. One acre of the Larut Hills Reserve was given up for a swimming bath. Of the proposals for reservation which were preliminarily notified during or previous to the year under report the extension of the Bintang Hijau Reserve (133,305 acres) was still ungazetted owing to further consideration of the claims to rights. These claims have now been met and it is hoped that the settlement is complete. The Kendrong proposal in Upper Perak which was preliminarily notified, comprises 115,000 acres, and if agreed to, will complete the reservation of the mountain range from Bruas in the south to Kroh in the north; a direct distance of 84 miles. It may be well to repeat here a statement of policy as to these large hill reservations. They are made mainly for physical reasons and without detailed consideration of the alignment of boundaries. It is not intended that they shall for all time be entirely withheld from alienation. In the future, as in the past, parts may be revoked for agricultural or mining purposes, but the fact of reservation ensures that alienation cannot take place without much fuller enquiry that is generally necessary in the case of State land.

An extension of 1,283 acres to the Larut Hills Reserve was finally gazetted in October, but reservation does not take effect until 1925. This area includes steep hill land which was formerly part of Waterloo Estate, near Padang Rengas.

The Utan Melintang proposal (27,750 acres) and the Kroh extension (19,253 acres) were not finally settled, but good progress was made. These are both timber forests on the flat country in the south of the State.

The forest on both sides of the bridle-path which leads to Lata Dal, the well-known *menggelunchor* picnic resort, is to be reserved for aesthetic reasons, and will form an addition of 120 acres to the Bubu Reserve.

Proposals for further reservation include the whole of the western slopes of the main mountain range in the Batang Padang district, with the possible exception of the Slim Valley. The area covered by this proposal is about 225,280 acres and includes hills up to 7,000 feet in height. The objects are mainly physical. The only other projected reservation is an extension northwards of the Erong Reserve, in the Lower Perak district, with the object of utilizing the new road trace as a boundary. The area concerned is about 2,000 acres.

5. SELANGOR.—The only additions to reserves in this State were 1,330 acres to the Banjar Reserve, and 344 acres to the Kapar Reserve. Both are mangrove reserves.

An excision of 53 acres was made from the Banjar Reserve, and one of 4,710 acres from Bukit Cheraka Reserve. Both these were for the purpose of rice cultivation.

There are 111,088 acres of forest in course of settlement. The greater part of this was preliminarily notified in previous years. Of the new proposals, an area of 11,000 acres is situated on the low-lying forests of the Klang and Kuala Selangor districts, and has for its main object the regulation of drainage. It also completes an agricultural protective belt. Other minor proposals are of little importance. The delays in settlement were due to various causes, most of which were outside the control of the department. No further reservation is contemplated.

6. NEGRI SEMBILAN.—The Angsi Reserve (30,160 acres) was finally gazetted, having been under settlement for eight years. The 6,340 acres shown as an addition to the Palong Reserve is due to recomputation which has been made possible by certain surveys in the locality. The area is still approximate only.

Bukit Tunggal Reserve, which itself is situated in Selangor, was extended into Negri Sembilan to the extent of 1,704 acres and finally gazetted.

The settlement of the Galla area (11,612 acres) was completed by the end of the year and is ready for final notification.

An extension (18,000 acres) to the Jelai-Gemas Reserve was proposed and preliminarily notified. A 1 per cent. valuation survey of this area shows that the forest contains 42 tons of timber per acre of which 60 per cent. consists of *keruing* and *meranti*. This calculation includes only trees over 3 feet in girth.

A decision was reached as to the proposed extension of the Linggi Mangrove Reserve, and a preliminary notification covering 1,296 acres will shortly be gazetted.

7. PAHANG.—The Tekai Reserve, having an area of 83,000 acres, was finally notified. The Rompin Reserve gained 2 acres and the Bencha Reserve 659 acres by corrections in survey.

The Tersang Reserve (60,000 acres) and Teregun Reserve (1,137 acres) were settled and gazetted during the year, but the notifications do not take effect until 1925. The former is 15,000 acres less than the area of the original proposal. The Teregun Reserve protects the Kuala Lipis water catchment area. Progress was made in the settlement of the Bukit Kajang and Jinka proposals, but nothing could be done as regards Benus Telemong owing to lack of a suitable officer to undertake the settlement.

A proposal was put forward, and it will probably be accepted, to reserve the low hill ridge between Kuantan and Berserah. The area involved is about 3,000 acres, and is not suitable for agriculture owing to its steepness.

### III.—ALTERATION IN AREA.

8. Particulars appear in Form I. The nett increase, including correction in areas of previously constituted reserves, was 164,994 acres. Details of the position are shown in the following summary:

State.		Area in square miles of reserved forests				Percentage to whole State on 31st December, 1924, of		
Name.	Area in square miles.	on 1st January, 1924.	added	excluded	on 31st December, 1924.	reserved forests.	State land.	alienated land.
			during the year.					
Perak ... ..	7,800	1,431.0	73.5	1.3	1,503.2	19.3	61.8	18.9
Selangor ... ..	3,200	576.4	2.6	7.4	571.5	17.9	47.2	34.9
Negri Sembilan ...	2,550	577.2	59.7	...	636.9	25.0	46.8	28.2
Pahang ... ..	14,300	1,843.5	130.7	...	1,974.2	13.8	82.6	3.6
Total ... ..	27,850	4,428.1	*266.5	8.7	4,685.9	16.8	69.4	13.8
1923 ... ..	27,850	3,651.8	793.0	16.7	4,428.1	15.9	70.4	13.7
1922 ... ..	27,850	3,526.4	126.5	1.0	3,651.8	13.1	73.2	13.7
1921 ... ..	27,850	2,913.6	614.0	1.3	3,526.4	12.6	74.0	13.4
1920 ... ..	27,850	2,877.9	35.9	.2	2,913.6	10.4	76.2	13.4
1919 ... ..	27,850	2,792.4	87.0	1.4	2,877.9	10.3	76.4	13.3
1918 ... ..	27,850	2,241.5	551.1	.3	2,792.4	10.0	77.1	12.9
1917 ... ..	27,850	1,911.6	333.4	3.5	2,241.5	8.1	79.3	12.6
1916 ... ..	27,850	1,832.5	79.7	.55	1,911.6	6.9	81.2	11.9
1915 ... ..	27,850	1,590.8	359.3	117.7	1,832.5	6.6	82.1	11.3

\* Includes additions due to corrections of area on survey.

## IV.—SUMMARY OF PROGRESS IN RESERVATION.

9. Progress in reservation during the last five years is shown in the following statement:

Particulars.	1915. Acres.	1920. Acres.	1921. Acres.	1922. Acres.	1923. Acres.	1924. Acres.
Reserves finally constituted during the year ... ..	215,083	22,865	392,969	72,765	507,379	163,568
Proposed reserves preliminarily gazetted and in various stages of settlement ... ..	190,789	1,112,821	735,924	838,118	787,026	749,148
Reservation under consideration but not yet preliminarily notified ... ..	430,800	500,000	633,000	825,000	278,000	346,246
Total area of reserves at the end of the year ... ..	1,172,784	1,864,721	2,256,882	2,337,178	2,833,969	2,998,963

Much remains yet to be done, but until the roads and railways of the country are extended there is no danger of loss of control over any large tract of forest which should be maintained as forest for physical or economic reasons.

## V.—DEMARCATIION.

10. New reserve boundaries were demarcated to a length of 163 miles, at an average cost of \$23.45 per mile, including the cost of boundary plates. Previously existing boundaries, having a total length of 2,699 miles, were repaired at an average cost of \$2.53 a mile.

## VI.—SURVEYS.

11. Details of the work done are shown in Form III.

12. Reserve boundary surveys were carried out either completely or in part on the Kroh extension in Perak, the Bukit Lagong extension in Selangor, Tunggul, Galla and Palong in Negri Sembilan, and Bencha in Pahang. Surveys of Bukit Arang Reserve in Selangor, and Bukit Kajang and Jinka Reserves in Pahang were in hand but were not complete at the end of the year.

13. The 4-inch scale topographical survey of Parit Reserve was nearly complete at the close of the year. The urgency of the extension of this work to other reserves becomes more pressing every year. The opening up of reserves to exploitation and sylvicultural work without adequate maps almost invariably leads to waste of money owing to faulty alignment of paths and boundaries. The total expenditure on this work was \$37,565.

14. Minor surveys were carried out departmentally at a total cost of \$712, exclusive of the salaries of the permanent staff employed on the work.

15. The proposals for the aerial survey of the mangrove forests, referred to in last year's report, were not carried out. The hope that this work might be carried out by the naval air unit temporarily stationed in Singapore was not realised.

## CHAPTER II.

## MANAGEMENT OF FORESTS.

## I.—REGULATION OF MANAGEMENT.

*(a).—Preparation and Control of Regular Working Plans.*

16. A careful study of the results of the work of past years in the mangrove forests of Perak North afforded sufficient data for formulating a definite scheme of work. This provides an annual coupe of 2,200 acres, divided between the three working circles of Gula, Port Weld and Pasir Itam. The principal crop is firewood, and the rotation is provisionally fixed at 40 years. As a working plan the arrangements are not yet final owing to lack of sylvicultural knowledge and to the need for further surveys and stock maps.

Good progress was made in Perak South in bringing the work in reserves under systematic management. Schemes were drawn up for Parit, Chikus, Kroh, Rungkup and Kuala Bernam Reserves. Parit and Chikus were worked during the year, and if roads are opened continuous exploitation should be assured.

17. A programme of improvement fellings in favour of *taban* in Perak South was prepared for the next three years, and the reserve journals were rewritten in a new form. In Selangor a preliminary working plan for Sungei Buloh Forest Reserve was drawn up and approved, but the final details remain to be settled.

18. These preliminary plans provide for regular annual operations and safeguard the forest from excessive and unregulated felling, but this is probably achieved at the cost of undercutting and loss of revenue. It should soon be possible to prepare detailed plans under which the forests will be worked to their full capacity, and in which the financial aspect of the work will be set out in full.

(b).—*Annual Plans of Operations.*

19. The plans previously laid down for the year were generally adhered to with the exception noted below.

20. The provision made for extending *damar* tapping operations was too optimistic. In Selangor it was found that the forest contained fewer *penak* trees than was supposed, and these were not easily accessible. The whole scheme was therefore cut out. The reasons for the slow extension of tapping are explained in paragraph 70. In Selangor, work was delayed by frequent changes of district forest officers. For this reason new paths in Sungei Buloh and Kanching Forest Reserves, and two proposed sample plots were not made.

21. Improvement fellings and cleanings after exploitation were below the area detailed in the programme. In some cases there were unforeseen difficulties; in some it was found that the work was unnecessary. In the case of cleanings after exploitation this may often happen, as the necessity for it can only properly be determined after the exploitation is finished.

## II.—COMMUNICATIONS AND BUILDINGS.

(a).—*Communications.*

22. Half a mile of private road on Sungei Gapis Estate, in Selangor, which had been damaged by timber carts, was metalled at Government expense.

23. The construction of one mile of metalled cart-road in the Sungei Buloh Reserve was put in hand by the Public Works Department and was nearly complete at the end of the year. This road opens up to exploitation, forest which would otherwise be inaccessible and thereby benefits the neighbouring mines and, at the same time, brings in revenue which will pay many times over for the cost of construction.

Thirty miles of inspection paths were made in forest reserves at an average cost of \$47 a mile. Repairs to private roads which are used by timber-cutters cost \$297. Four hundred and seventy-seven and a half miles of inspection paths were repaired at an average cost of \$4.72 a mile. Details are given in Form V.

(b).—*Buildings.*

24. New buildings erected departmentally cost \$6,885 and general repairs \$8,738. Expenditure by the Public Works Department on forest buildings amounted to \$27,860. The general practice is that the Public Works Department undertakes to build and keep in repair Forest Department buildings in places where supervision is easy. In more remote places, building is done departmentally. Details are given in Form V.

(c).—*Other Works.*

25. Total expenditure by the department under this head was \$1,842 and by Public Works Department \$13. No items call for comment. Details are given in Form V.

## III.—PROTECTION AND BREACHES OF FOREST LAW.

(a).—*Protection against Man.*

(i).—*LEGAL.*

26. Reserved forests were brought within the definition of a "public purpose" under the Land Enactment, thus putting an end to the anomaly that existed previously whereby a forest reserve under that Enactment came within the definition of State land.

27. The following amendments and additions were made to the Forest Rules:

- (a) The royalties on *damar mata kuching* and *damar penak* were raised from \$3.50 and \$2 respectively to \$5 a pikul.
- (b) *Damar minyak* or *sanum*, *meraga*, and *merbatu* were added to Class Ic of the timber roll.
- (c) The minimum girth for felling *petaling* on State land was reduced from 4½ feet at a height of 6 feet from the ground to 3 feet at a height of 4½ feet from the ground.

- (d) The following rule was made with the object of expediting exploitation and of minimising waste of timber:

“9A. Forest produce cut or collected under a licence or permit shall be removed from the area to which the licence or permit applies within a period of three months from the date of cutting or collection, unless the permission of the Deputy Conservator shall have been obtained to retain it on the area for a longer period.”

In the past it not infrequently happened that trees were felled, and, sometimes, even sawn, and left in the forest until they had deteriorated to such an extent that they were not worth removing. This was usually due to the financial failure of the licensee or to disputes between him and his labour force.

- (e) Royalty payable on mangrove charcoal was reduced from 15 cents to 10 cents a pikul, which is the rate for ordinary charcoal. This change was made with the object of encouraging the manufacture of mangrove charcoal, an object which so far has not been attained.
- (f) The collection of royalty on head-loads and kandar-loads of firewood in the vicinity of certain towns was abolished. The forest has receded so far from the towns that the former trade, carried on by able-bodied men and involving large quantities of wood, has died out. The collection of firewood continues, but it is carried on mostly by women and decrepit men, and no fees are now charged.

(ii).—FOREST OFFENCES.

28. The number of forest offences reported rose from 864 in 1923 to 940, but the number of persons involved fell from 1,279 to 1,199. The increase in the number of offences dealt with is mainly in Perak South. In Selangor the number of offences was the same as in the previous year but the number of offenders was 90 less. Three cases of illicit gutta-percha tapping were reported in Selangor. In one case the offender was arrested and convicted. In the second case the offender escaped, leaving behind him his clothes, tools and the gutta. In the third case the offender was undetected. In Pahang a Chinese was convicted and fined for having gutta-percha in his possession. It was subsequently proved that the gutta had been planted on him, and it is some satisfaction to record that he was given compensation and that the person who placed the gutta in his house was sentenced to three years' rigorous imprisonment.

29. Of the 177 cases taken into Court 90 per cent. resulted in convictions. This percentage is somewhat lower than the average of former years. The average fine per case was \$30 and that per person \$21.

30. Of the 867 persons dealt with departmentally 12 were discharged with a caution. Including these the average compensation paid was \$11 per case and \$9 per person.

31. Sales of confiscated property realised \$3,079 and a sum of \$77 was awarded by Magistrates for damage to the forests. Payments for breaches of the conditions of permits or agreements amounted to \$8,070.

(b).—Protection against Animals and Insects.

32. It is reported from the Parit Forest Reserve that there are indications of insect attack on young *meranti* in places where, as a result of improvement fellings, it has begun to form almost pure pole forest. No detailed information has yet been obtained. Investigations are proceeding.

33. The larva of *Rhodoneura* was as usual more or less in evidence in all gutta-percha forests. In one instance it was thought necessary to collect and burn the affected leaves but this pest though known for many years has never assumed serious proportions.

34. Considerable damage has been done by a boring beetle to exposed surfaces on the tapped parts of *jelutong* trees. Preventive measures in the form of painting with wood preservatives are reported to have been partially successful. The subject is one which requires early and careful attention in view of the great possibilities that the *jelutong* industry presents.

(c).—Protection against Plants.

35. Climbers and creepers were removed from trees in the course of improvement fellings which extended over 4,607 acres. The cutting of *bertam* in Senaling-Inas Reserve goes to show that, in dry hill forest at least, repeated cuttings are effective. In this case the third cutting has killed a large proportion of the clumps and has so weakened others that they can have but little injurious effect on the young growth of valuable trees growing beneath them.

36. Attention has been drawn to the danger to which forests are exposed by the presence of *resam*. This fern appears and grows luxuriantly on the edges of and in openings in the forest. When once well established it spreads rapidly and suppresses all young growth of other species. In addition to preventing the growth of new forest it is a source of danger to the existing forests by reason of its inflammability in dry weather. Experiments are in hand with the object of finding the best means of eradicating or checking this pest. It is a very strong grower in full light.

(d).—*Protection against Injury from Natural and other Causes.*

37. Several small fires in reserves were reported, but none was of a serious nature. These fires nearly always start in *lalang* or *resam* outside the forest and they penetrate to a short distance only. Protective measures against such fires could only be taken at a cost which would be out of all proportion to the damage that is likely to be caused.

IV.—SYLVICULTURE.

(a).—*Natural Reproduction.*

38. The only incident of the year that merits record is the flowering and fruiting of *taban merah* which was much above the average. The fruit set well in Trolak, Behrang, and Rantau Panjang Reserves and gives promise of a good seed yield. Preparations have been made for the collection of the seed which is needed for the extension of private plantations.

39. Reference to the flowering and fruiting of other species are frequently made by State and District Forest Officers, but until a sylviculturalist is appointed it is impossible to record and compare these casual reports satisfactorily. Records are kept, but all that can be said at present is that the season of flowering of most species is uncertain. In certain species flowering has been reported in almost every month of the year from one district or another.

(b).—*Artificial Reproduction.*

(i).—REGULAR PLANTATIONS.

40. PERAK.—Sixty-seven acres were planted in the Matang Mangrove Reserve with *bakau minyak* seedlings spaced 3' x 3' at a cost of \$5.81 an acre, exclusive of the salaries of the permanent staff by which part of the work was done. This is expensive seeing that it is certain that further expenditure will be necessary to replace seedlings destroyed by crabs and monkeys. Nothing was spent on upkeep in the old plantations which are reported to be in good condition.

Three hundred *rotan sega* seedlings were planted on the area on which dibbling proved a failure in 1922 and 1923. The *rotan sega* nursery was extended, 10,000 seeds being planted with a view to a further experiment in planting in the open. The old plantation in the open shows very satisfactory results. It has again to be recorded that *kepayang* in the experimental plot did not flower.

A *yemane* nursery was formed for experimental purposes.

41. SELANGOR.—Further experimental planting of *yemane* was carried out on a small scale. The results are so far satisfactory. The growth of this plant is very rapid, trees from seed sown in 1920 being now well over 30 feet high. The object of this experiment is to test the species as to its suitability for raising a quick growing firewood crop.

The mangrove plantations were increased to the extent of 50 acres at a cost of \$2.63 an acre.

There are no regular plantations in the other States.

Details are given in Form VII.

(ii).—CULTURAL OPERATIONS.

42. PERAK.—Eight acres in Trolak Reserve were planted 12' x 12' with *taban merah* seedlings. Trees other than *taban* had previously been removed from this area under permit and the stock of naturally sown *taban* seedlings was found to be deficient. The cost was \$12.19 an acre.

In the 34 acres of *taban* planted in lines under shade in the Trolak Reserve in 1922 failures to the number of 5,087 were replaced at a cost of \$130, 59 per cent. of the original plants having failed to survive.

In the Behrang *taban* reserve 11 acres were added to the area planted in lines in shade at a cost of \$26.11 an acre. Thirty thousand *taban* seedlings were sold at 5 cents each in the nursery.

43. SELANGOR.—There is nothing to record.

44. NEGRI SEMBILAN.—In the Senawang Reserve 46 acres were cleaned at a cost of \$1.15 an acre. This work consisted in keeping clear of weeds young *penak* and *kapur* resulting from previous dibbling, and in transplanting 1,368 *taban merah* seedlings from beneath parent trees to adjoining areas which were deficient in natural regeneration.

45. PAHANG.—No cultural work.

(c).—Operations for the Improvement of Growing Stock.

\* 46. PERAK.—In Kurau mangrove reserve operations were carried out over 15 acres with the object of exterminating *api-api* in order to encourage the development of the more valuable *berus* with which it is associated. In Kledang-Saiong Reserve seedlings of class I trees were freed from undergrowth over an area of 50 acres on which the class II trees had recently been exploited for firewood. Bertam was cut on 24 acres with the same object. In Parit Reserve cleanings in favour of class I seedlings were carried out over 276 acres at a cost of \$6.37 an acre, a figure which is above that of former years. In the same reserve 215 acres were treated for the second time at a cost of \$2.81 an acre. Both areas have been previously worked for class II poles and firewood, with the result that there is rapid growth of class II saplings which would suppress the class I if not kept in check. It may be mentioned that the revenue obtained from these poles and firewood greatly exceeds the cost of the sylvicultural work. One hundred and seventy-eight acres were similarly treated in Chikus Reserve, at a cost of \$3.35 an acre, and the stock of class I seedlings was found to average over 300 to the acre. Extensive improvement fellings were carried out in the *taban merah* forests in Trolak, Behrang and Besout Reserves over areas similarly treated in previous years. The total area dealt with was 1,470 acres, and an enumeration made at the same time showed that 89,134 trees were attended to, giving an average stock of 60 trees an acre. The total cost of these operations was \$5,263, which gives an average of \$3.58 an acre and 6 cents a tree. *Taban* responds rapidly to the admission of light, and is a quick growing tree in open positions. The results of past improvement fellings are very satisfactory, large areas being now completely stocked with *taban* which formerly appeared to the casual observer to contain only ordinary mixed forest. The *taban* at the Waterfall in Larut Hills Reserve was treated in the same way.

47. SELANGOR.—The restocking of mangrove forests is largely dependent on seed dispersed by the tides. In the ordinary course of exploitation, streams have to be deepened or canals made, and in so doing banks are thrown up which prevent the dispersal of seed at high tides. In the Klang mangrove these banks were broken after exploitation in order to allow seed to be carried on to newly felled areas.

In Bangi Reserve improvement fellings in favour of *taban merah* were made over 205 acres, and cleanings in mixed forest over 64 acres. The cost of the operations being \$2.24 and \$1.67 an acre respectively. Cleanings after exploitation of class II poles and firewood were made over 392 acres in Sungai Buloh Reserve in areas formerly treated under the improvement fellings system. The cost was \$1.90 an acre.

48. NEGRI SEMBILAN.—Six hundred and nineteen acres of improvement fellings in mixed forest were made in Senawang, Senaling-Inas, Serting and Pasoh Reserves, over areas previously treated, at an average cost of \$3 an acre. The class II trees in Senaling-Inas Reserve are unsaleable owing to the long distance from a market. An experiment was therefore made in ringing these trees and painting the ring with a chemical solution which has elsewhere been found effective in killing trees quickly.

49. PAHANG.—In Benchah and Putat Reserves improvement fellings in favour of *taban merah*, costing \$2.15 an acre, extended over 950 acres of forest previously treated. In at least one part of the Putat Reserve the felling was too drastic. Big trees were felled in an area where the stock of *taban* was too small and too scanty to hold its own in the rush of quick growing class II trees which may be expected as a result of the heavy felling. Frequent cleanings will be necessary on this area during the next few years to save the *taban* from suppression.

Improvement fellings in favour of *chengal* and *kulim* were carried out for the second time over 40 acres in Bukit Goh Reserve.

50. Details are shown in Form VII.

51. The exploitation of class II poles and firewood referred to in paragraph 59 below has all the effects of improvement fellings in favour of class I species, but it is not included in Form VII as its primary object is revenue. This felling is carried out under certain rules which experience has shown will produce the required sylvicultural effect. The extent of this felling is only limited by the demand for poles and firewood within an economic distance of the forest.

## V.—EXPLOITATION.

(a).—*Timber, Fuel and Charcoal.*

## (i).—GENERAL DISCUSSION.

52. Details are given in Form VIII and Appendix B.

53. The total outturn was 789,412 tons, giving an increase of 138,811 tons over the 1923, and 166,873 tons over the 1922 totals. Timber and poles accounted for 159,258 tons, and firewood and charcoal for 630,154 tons, the increase over the figures for 1923 being 48,362 tons and 90,449 tons respectively. These large increases are chiefly due to the high prices of tin ruling throughout the year. It is interesting to compare the output of timber and fuel with the price of tin. The figures for the last five years are as follows:

Year.	Outturn of timber and fuel in tons.	Average price of tin per pikul. \$
1920	961,851	150
1921	726,734	85
1922	622,539	81
1923	650,601	102
1924	789,412	124

In 1920 the Railway Department used very large quantities of firewood. Consumption by the Railway Department was much reduced in 1921, and in 1922 and subsequent years the quantity was negligible.

There are other factors beside tin which affect the demand for timber. The most important of these are the Railway and Public Works Department programmes of work. The rise in the price of rubber has no doubt had some effect in that it has increased the general prosperity of the community, but tin by its direct demand for both timber and fuel as well as by indirect means is by far the most important factor.

54. There was a marked revival of the railway sleeper industry. The number of sleepers paid for during the year was 257,989 representing 11,811 tons of timber, which is 8,948 tons more than the outturn of 1923.

55. The consumption of inland firewood only in Perak South was approximately 226,000 tons of 100 cubic feet. To meet this demand it would be necessary to open 7,500 acres of forest reserve annually. With existing means of communication it would be impossible to open more than 4,000 acres of accessible forest reserve. During the year under review 87 per cent. of the supply came from State or alienated land. The surest means of meeting the demand is the extension of roads both in and outside forest reserves. The cost of firewood varies considerably according to locality. At the end of the year the price of inland firewood per stack of 50 cubic feet delivered on road in the Kinta district of Perak was about \$6.50, including the Government royalty of 50 cents.

56. Having visited the Kinta district the Forest Research Officer recently wrote as follows:

“The Kinta district is very impressive as an example of a region where very large tracts of land have been denuded of forest during the life-time of men now living, where the demand for firewood is very great and where perhaps the most intensive utilization in the Peninsula is now practised, and where the future supply of firewood is a matter of serious concern.”

## (ii).—SOURCES OF SUPPLY.

## (a).—RESERVED FORESTS.

57. The total outturn of timber, firewood and charcoal in Perak was 193,071 tons, being 5,753 tons more than in 1923. The mangrove reserves accounted for 4,123 tons of the increase, the balance being in firewood from inland reserves.

58. There were two changes in the system of management of the Matang Mangrove Reserves. The restriction which required that at least one tree over 15 inches in girth should be left as a seedbearer on every square chain was abolished, and in its place contractors were forbidden to fell any tree under 15 inches in girth. Clear felling may be permitted only with the written approval of the District Forest Officer, and this approval is only given where regeneration is established. Seven coupes were closed during the year. The average yield per acre was 77 tons. This figure is somewhat lower than the results obtained from fair average forest owing to the fact that one coupe comprised some areas of inferior and immature forest which were not worked. The area of new forest opened to exploitation was 965 acres which is very much below the area allowed by the working plan. The reason for this was the slow rate of work in the coupes of former years. During the year there were in this reserve no less than 5,866 acres under exploitation. The rate of royalty was reduced

from \$7.50 to \$4.00 per 100 pikuls. The coupes were disposed of by tender, the premium tendered being payable in eight monthly instalments. Taking 80 tons an acre as an average outturn the premium paid for the 1924 coupes was equivalent to \$2.18 per 100 pikuls. The total payment was therefore \$6.18 per 100 pikuls (= \$1.04 per ton) compared with \$7.50 when royalty only was paid. This disposes of the frequently made assertion that the premium system raises the cost of firewood to the consumer. It has also been said that only wealthy contractors can afford to tender, and that in consequence the number of contractors is restricted and competition thereby reduced. In 1924 there were 15 individual contractors working, whereas in 1923 there were only 10.

59. The exploitation of inland reserves was continued, and is being extended as working schemes are prepared and roads extended. Felling is at present mainly restricted to class II trees. The felling of the class I timber will take place as soon as the establishment of the next crop is assured, some three or four years after the class II trees have been removed. The outturn from this source was 31,772 tons, which is a small increase over the previous year. A light railway with a steam locomotive was installed in Tanjong Toh Alang Reserve.

60. In Selangor the forest reserves produced 121,910 tons of wood, being 27,821 tons more than in the previous year, of this total 83,020 tons was mangrove firewood and over 38,000 tons was firewood from inland reserves. In the mangrove reserves 961 acres of new forest were opened, and many old coupes were still working throughout the year. The average outturn in completely exploited coupes was 66 tons an acre, the revenue per acre \$72, and the revenue per ton \$1.08.

61. Negri Sembilan shows an increased outturn from this source of 5,661 tons which is almost entirely accounted for by firewood taken from Senawang Reserve by the Tongkah Compound Mining Company.

62. There was an increase of 180 tons in Pahang. Out of a total outturn of 727 tons mangrove firewood, local use at Rompin accounted for 596 tons.

(b).—FROM STATE AND ALIENATED LAND.

63. The outturn of wood on which royalty was paid amounted to 467,287 tons, being 99,396 tons more than in the preceding year. Perak North shows an increase of 40,416 tons of which a little over 3,000 tons is in timber and the rest in class II poles and firewood. Practically all of this was used on mines. In Perak South there was a rise of 48,967 tons. It is noteworthy that the outturn increases, even in the Kinta district, in which the forests have been so heavily worked for many years.

64. Selangor records a decreased outturn of 5,400 tons, exclusive of timber and fuel taken under free grants, which clearly indicates that the accessible forests of the State, apart from forest reserves, are nearly exhausted, and points to the necessity of opening up access to the more remote forests.

65. In Negri Sembilan and Pahang there were increases from 28,314 to 32,919 tons and from 25,729 to 36,536 tons, respectively. This is largely accounted for by the revival of the railway sleeper industry.

(b).—Other Forest Produce.

(i).—GENERAL DISCUSSION.

Details are given in Form IX.

66. *Damar*.—The departmental *damar penak* business developed considerably, and the financial results are highly satisfactory. The outturn for the year was 2,312 pikuls, compared with 1,442 pikuls in 1923. The only obstacle to a very large increase in outturn is the difficulty of obtaining regular labour for tapping. The damar itself continues to attract attention in Europe and America, and there is no doubt that any increase in outturn will readily be sold at a remunerative price. A trade-mark has been registered, and selling agents have been appointed in London. The British Empire Exhibition at Wembley afforded an excellent opportunity for advertising, and full advantage was taken of that opportunity with satisfactory results. An article explaining the origin of the *damar* and the methods of its preparation was published in trade journals. This article was translated into Dutch and German, and is being distributed. There is still much to be learnt about the industry both as regards production and preparation, and it is highly probable that, if sufficient attention is given to the scientific side of these problems, great improvement will be effected in the course of a few years.

67. The total number of trees in various stages of tapping was 25,815, but 10,575 of these in Pahang were only tapped within eight feet of the ground. The yield per tree varies considerably, and an average is difficult to estimate, owing to the fact that a tree does not yield fully until it has been in tapping for a year or more.

68. As in former years Negri Sembilan was the biggest producer, with 1,710 pikuls, which is 409 pikuls more than the 1923 outturn.

69. A settlement of foreign Malays was organised at Langkap, and has proved most successful. There are 188 persons in the settlement, 55 of whom are men, and of these 44 are regular tappers. They have to date brought nearly 2,000 trees into tapping. Efforts are being made to establish other settlements on similar lines.

70. Pahang produced 441, and Perak 160 pikuls. The development of the industry in these States is disappointing. Hundreds of thousands of reasonably accessible trees are waiting to be tapped, but there is no labour available for the work. The Malays are able to live without undertaking regular work, and they have no desire to improve their conditions of life by the somewhat hazardous means of climbing trees.

71. The total revenue from *damar penak* sales was \$106,295. This includes a small quantity of *damar mata kuching*. The net profit for the year was \$32,277.63.

72. The trade in inferior *damars* was about the same as in 1923, the outturn for the year being 14,388 pikuls.

73. *Gutta-percha (getah taban merah)*.—The outturn of this product obtained by tapping remains small, the total for the year being 71 pikuls, most of which was sent to the British Empire Exhibition. When the Exhibition was closed the whole stock, some of which had deteriorated by exposure, was sold at 5s. a lb.

74. The outturn of leaf gutta rose from 3 pikuls in 1923 to 84 pikuls in 1924, but at the end of the year the business was at a standstill, owing to the difficulty of selling the product at profitable prices. The market for gutta-percha is a restricted one, a fact of which the buyers are not slow to take advantage. The collection of *taban* leaves for sale fell off, owing to the fact that the Selborne Plantation Company produced an increased quantity of leaves from their own plantation.

75. *Canes*.—The royalty on canes rose from \$27,954 in 1923 to \$37,285 in the year under review. This is satisfactory as far as it goes, but the whole industry is in native hands, and is in consequence without organization or efficiency. It is undoubtedly capable of development.

76. *Jelutong*.—Trade in this product has increased remarkably, the outturn for the year being 5,897 pikuls compared with 2,221 pikuls in the previous year. The distribution of the outturn among States was Perak 293 pikuls, Selangor 1,463 pikuls, Negri Sembilan 564 pikuls, and Pahang 3,578 pikuls. The total number of trees tapped was 14,895. The quality of the refined *jelutong* turned out by the largest producer is said by consumers to be much superior to any *jelutong* obtainable elsewhere. It is of great importance that the quality of the Federated Malay States *jelutong* should be of the highest standard, and for this reason the issue of licences and permits to collect is being restricted to those who can turn out a high class product. Satisfactory methods of coagulation and refining are still the secrets of a few persons. The Agricultural Chemist has this important problem in hand, and it is to be hoped that he will be able to solve it early. The methods of tapping are receiving careful attention, and this is very necessary in order to protect the trees from damage. Those who remember the difficulties of controlling the tapping of plantation para rubber trees in the early days of the rubber industry will realize the still greater difficulties of controlling the tapping of *jelutong* trees scattered, far and wide, in the jungle. The potentialities of this trade are very great, but its development is likely to be retarded by the insufficiency of labour.

77. There was no development worthy of comment in other minor products, the total revenue from which increased from \$21,887 in 1923 to \$23,274 in 1924. It is probable that there are many forest products in which business could be done at a profit if sufficient information about them and their markets was available.

78. The syndicate which obtained a bamboo concession in Upper Perak for the manufacture of paper pulp has not yet brought its scheme to fruition. Further reference to minor forest products will be found in paragraphs 93 to 95.

(ii).—SOURCES OF SUPPLY.

(a).—RESERVED FORESTS.

79. The revenue for the year was \$115,785 compared with \$107,777 in 1923. The increase is under canes, *damar* and gutta-percha.

(b).—STATE AND ALIENATED LAND.

80. Revenue from this source increased from \$56,268 in 1923 to \$79,611 in 1924. Canes account for an increase of \$7,409, *damar* for \$3,978 and gutta-percha for \$6,903.

81. The details given on Form IX are fuller than those of previous years and all weights are now expressed in pikuls.

## (c).—SUMMARY OF OUTTURN.

82. The outturn of all kinds of forest produce is summarised in the following statement, produce cut free of royalty being excluded. Apparent errors are due to the elimination of fractions. *Jelutong* appears for the first time as a separate item. *Damar* is divided into two classes in order to show separately that obtained by departmental agency. Rubber is included in "Other Produce".

Kind of produce.		From reserved forests.	From other forests.	Total	
				for the year.	for the previous year.
Timber and poles	... Tons	14,192	145,066	159,258	110,896
	Rev. \$			608,466	449,139
Fuel and charcoal	... Tons	307,933	322,221	630,154	539,705
	Rev. \$			673,342	570,307
Canes	... Rev. \$	7,090	30,195	37,285	27,954
Gutta-percha (getah)	... Pkls.	47.44	127.64	175.08	159.70
	Rev. \$	(a) 1,992	11,395 (b)	13,387	8,232 (c)
Gutta-percha (leaves)	... Pkls		58.69	58.69	170.57
	Rev. \$		29	29	85
Jelutong	... Pkls.	642.39	5,254.87	5,897.26	2,221.40
	Rev. \$	1,550	5,567	7,117	2,382
Damar (penak and mata-kuching)	... Pkls.	961.47	1,350.17	2,311.64	16,020.07 (e)
	Rev. \$	(d) 95,960	10,335	106,295	103,503 (e)
Damar (batu and others)	... Pkls.	3,457.13	10,930.52	14,387.65	
	Rev. \$	1,997	5,788	7,786	
Other produce	... Rev. \$	6,972	16,301	23,274	21,887

## CHAPTER III.

## ECONOMIC FORESTRY, SYLVICULTURAL EXPERIMENTS, RESEARCH, AND EDUCATION.

## I.—STAFF.

83. The Forest Research Officer was on duty in Kelantan from January 29th to April 7th, and in the Federated Malay States until April the 25th, when he left for England in connection with certain litigation and did not return before the end of the year.

84. While in England, the Forest Research Officer arranged for the making of plates for illustrations in the manual on Malayan timbers which is in preparation. He also continued his study of the Dipterocarpaceae at the Royal Herbarium at Kew, having taken with him to England local herbarium specimens for comparison with the Kew material. In the absence of the Forest Research Officer, his duties were carried out by Captain H. W. Woolley, the Assistant Forest Research Officer.

85. Mr. J. A. Barrett, Assistant Conservator of Forests, who was making a special study of gutta-percha, went on leave in November, 1923, on medical certificate, and it is recorded, with regret, that he died shortly after his arrival in England. It has not yet been found possible to detail another officer to continue the study of this important subject.

86. The proposal to appoint a whole-time Chemist for forest work was not sanctioned. The urgent need for more laboratory work becomes daily more apparent. Valuable assistance has from time to time been rendered by the Agricultural Chemist and by the Institute of Medical Research, but intermittent work of this kind scarcely does more than expose our ignorance of the products with which we deal and emphasizes the necessity of more extended research and experiment.

87. A Chinese lad with marked artistic talent was engaged to make pen-and-ink drawings of herbarium specimens. His work is good, and will be useful for illustrating descriptive publications.

(a) Excludes \$850 paid by the Selborne Plantation Co. as rent on a seed-collecting area in the Trolak Reserve, \$1,500 sale of taban seedlings and \$222 sale of gutta-percha seeds.

(b) Includes \$66 sale of inferior getahs credited to II (d).

(c) Excludes \$850 paid by the Selborne Plantation Co. as rent on a seed-collecting area in the Trolak Reserve.

(d) Includes \$91,805 from sale of damar worked by departmental agency in reserved and unreserved forests, which cannot be shown separately.

(e) Includes damar batu and other inferior damars.

## II.—EXHIBITIONS.

(a).—*Agri-Horticultural Show at Kuala Lumpur.*

88. A competitive exhibition was provided for furniture makers with the object of encouraging the use of local woods, but it attracted few entries, due chiefly to the fact that Chinese carpenters do not usually stock furniture but make to order. An obstacle to the development of this industry is the difficulty of getting supplies of any special wood, a difficulty which is due to the lack of enterprise on the part of the timber-cutters. The only article exhibited by the Forest Department was a writing table made of *buey* and *meranti pahang*. The *buey* attracted a good deal of attention and enquiries for supplies were subsequently received.

89. Advantage was taken of the temporary presence in the country of two expert Australian loggers to demonstrate the advantages of modern axes and saws compared with the antiquated tools in general use among Chinese timber-cutters. The loggers visited various areas where Chinese wood-cutting was being carried on and gave exhibitions of their skill in felling and sawing. The Chinese were much impressed. At the Kuala Lumpur show competitions in felling, sawing and splitting were organized and attracted a large number of entries. The exhibitions and competitions were repeated with equal success at the Agri-Horticultural Show at Seremban.

(b).—*The British Empire Exhibition at Wembley.*

90. The Forest Section of the Malaya Pavilion received gratifying appreciation, both from those who were interested in its technical side and from the public. The display included exhibits of timber, rattans, gutta-percha, *damar*, *jelutong*, and other minor forest products. The prediction made last year that the Forest Section would pay is well on its way to fulfilment. It is impossible to express the value of the exhibition in figures, but the commercial interest that has been roused is clearly indicated by the large number of enquiries that have been received from all parts of the world, some of which will undoubtedly lead to business. Samples were given to manufacturers, descriptive pamphlets were distributed to the trades concerned, and the interest of trade associations was aroused. The exhibition also proved of great value on account of the opportunity it afforded to the Forest Department to learn about the products with which it is concerned. It brought forest officers into direct and frequent touch with manufacturers, and enabled them to acquire more knowledge of the requirements of each trade than they could ever have obtained in any other way. The only direct trading undertaken in the pavilion was in walking sticks of local canes and woods and the sale of these realised about £600. Agents have since been appointed in London for the sale of Government gutta-percha and *damar*.

There were several points in which there was room for improvement, but on the whole the results were distinctly satisfactory and credit is due to the officers who did the preliminary work, among whom Mr. J. G. Watson was conspicuous for his energy and good work.

The Malaya Pavilion will be opened at Wembley in 1925, and there is reason to hope that the success of 1924 will not only be repeated but will be surpassed. The gutta-percha, *damar* and rattan exhibits are to a large extent being replaced with fresh material, and as a result of the lessons learnt last year there will be considerable improvement in the condition of the exhibits. The number of the minor products exhibits will be increased, and in addition to the sale of walking sticks there will be direct sales of small articles made of local woods.

## III.—SYSTEMATIC STUDY OF THE FOREST FLORA AND FOREST PRODUCTS.

(a).—*Systematic Botany.*

91. The Forest Research Officer and the Sylvicultural Assistant spent over two months in examining a part of the forests of Kelantan, and the results of their observations have added to our knowledge of the flora and the composition of the forest of the Peninsula. Eight new cases were added to the herbarium, and alterations were made in the arrangement of the specimens with the object of facilitating reference. The number of specimens received during the year was 400, of which 110 came from Sarawak, 66 from the Director of Botanical Gardens, Singapore, and the rest from local forest officers.

The special study of the Dipterocarps was continued by the Forest Research Officer.

(b).—*Commercial Timber and Trees.*

92. Small additions have been made to the collection of specimens of local timbers, and over one hundred specimens were received from Sarawak. The latter are valuable for purposes of comparative study.

(c).—*Minor Forest Products.*

93. The collections of rattan specimens were provided with new cases in the museum, and are now for the first time displayed in an attractive and instructive manner. Further enquiry was made in England into the commercial value of local rattans, and as to their preparation for the market. The results indicate that some of our rattans are of excellent quality and are in constant demand.

94. DAMAR.—Investigations in this important product have been greatly retarded by the lack of a Chemist. This is not merely a question of the analysis of a single and uniform product. It involves many kinds of *damar* and many grades in each kind. As an instance the product which is known as "dead *damar*" may be mentioned. This is an opaque form, white or pale yellow in colour, which occurs in considerable quantities, and is entirely wasted, having at present no market value. We know nothing of the cause of its occurrence, of its nature, or of its possible uses. It is quite likely that chemical research will show that it has some value. Not only is analysis required, but also experimental work on methods of cleaning and preparation for the market. These remarks apply to a large number of so-called inferior *damars* of which we know very little, as well as to *damar penak*.

95. The Agricultural Chemist carried out some useful work on *jelutong*, but there is still much to be learnt about this product. In view of the great possibilities of the industry it is of the utmost importance that a high standard of quality should be established as soon as possible. Investigations are proceeding as far as the Agricultural Chemist can spare the necessary time.

## IV.—EXPLOITATION AND UTILIZATION.

(a).—*Timber.*

96. Mr. H. T. M. Kent, Controller of Timber Supplies, visited India and Burma, and made a tour of the principal saw-mills and wood-working establishments. The object of this tour was to collect information which would enable Government to come to a decision as to the best means of improving the prevailing methods of logging, converting and utilizing timber. That the existing state of affairs is very unsatisfactory is obvious, and it is unlikely that private enterprise can effect any substantial improvement. Mr. Kent has written a valuable report which, when printed, will be considered by a committee appointed to advise Government as to what should be done to improve existing practices.

97. The manufacture of furniture and small articles from fancy woods was continued and these articles found a ready sale. It is however disappointing to have to record that this venture has not so far inspired others to experiment and develop the industry. This item of Forest Department work has however another use. It affords an opportunity to study the behaviour of the different woods when worked and their suitability for various purposes. It is also a great convenience to have carpenters working regularly on the premises. They prepare timber specimens, make museum show-cases, and prepare specimens for the durability and seasoning tests. Incidentally the profits on sales go some way towards paying for these latter services.

98. SEASONING EXPERIMENTS.—These experiments have given very useful interim information. Observation of twenty-five kinds of timber over a period of 12 months proved that 1" planks may be considered air dry, when they have reached a moisture content of about 16 per cent. Light, and moderately light, timbers reached this condition in two months, five months or more being necessary for heavy timbers. Investigations were made, and are being continued, on the questions of moisture absorption and shrinkage.

99. DURABILITY TESTS.—These tests were continued on the same lines as in previous years. Sixty-four new untreated specimens were put into the testing grounds bringing the total number up to 1,841 pieces.

100. PRESERVATIVE TREATMENT.—Timber specimens treated with seven new preservatives were put into the testing grounds, bringing the total number of preservatives undergoing test to 32. Experiments were made in the impregnation of timber by the Boucherie process. The experiments are not yet complete, but it has been shown that under a pressure of 12 lbs. to the square inch the preservative penetrated a 10-foot log of *keruing* in the direction of the grain, in 15 minutes, but the penetration was only in the sapwood.

101. MECHANICAL TESTS.—The required machinery not being available nothing could be done under this important head.

The whole question of seasoning, testing, and preserving will be considered by the committee referred to in paragraph 96.

(b).—*Other Products.*

102. The methods employed in the production of *jelutong* were given special attention. The *jelutong* trees being scattered, systematic observation is difficult, but it became evident that revision of the existing practices is necessary, and steps are being taken to effect this. It is estimated that a tree of medium size if tapped only 12 or 15 times a month on a single V incision will yield two pikuls of refined *jelutong* a year. The product when shipped has a moisture content of about 30 per cent., and it is said that this is necessary in order to keep it in good condition. There seems here to be scope for investigation with the object of eliminating the payment for handling, freight and insurance charges on the water content. Experiments in the tapping of *damar penak* are being carried out, but more extensive experiments are required.

103. It has come to light that the leaves of some of our local bamboo are suitable for opium wrappings. The Government Opium Monopoly Department has in previous years used some 40 millions of such leaves annually, the whole of which have been imported from China. An effort is being made to have the leaves collected locally in future.

104. The attempt was made to tap *kemenyén*, commonly known as gum benjamin or benzoin, but so far without success. Trade returns show that over 26,000 pikuls of this gum, valued at \$739,716, was exported from the Straits Settlements in 1923, and that nearly the whole of this came from Sumatra. The Federated Malay States tree is identical with that found in Sumatra.

## V.—SYLVICULTURE.

(a).—*Sample Plots.*

105. Ten new sample plots were started for recording the annual growth increase in trees. The total number of such plots now established is 53. Owing to the prolonged absence of the Forest Research Officer, the identification of trees in sample plots was not completed.

(b).—*Experimental Planting.*

106. The experimental plantation near Kuala Lumpur was maintained, and some useful information was recorded as to the rates of growth of certain seedlings and saplings, but further work of this kind awaits the final selection of a permanent site.

(c).—*Gutta-percha.*

107. Research in connection with gutta-percha was checked by the death of Mr. J. A. Barrett, who had been wholly employed on this work. The sylvicultural plots were upkept and the usual records maintained. It is hoped that these investigations may be continued shortly.

## VI.—ENTOMOLOGY.

180. Twenty-three identifications were received from the Imperial Bureau of Entomology, one species being previously unknown. The damage occasioned to *jelutong* trees received special attention and observation and enquiries are still in hand. As far as our information goes at present, it appears that the principal damage is caused by the larva of a large Cerambycid beetle, which toward the end of the larval stage has its habitat just below the bark. The presence of the larvae is unconnected with tapping operations, but the damage occurs when tapping reaches the area of bark immediately over the larval tunnels. The sapwood having been exposed is liable to the attacks of a small Scolytid borer. Various protective liquids are being tried as a defence against the latter, but hitherto no certain protection has been found.

## VII.—PUBLICITY AND EDUCATION.

109. The Conservator of Forests attended the Imperial Forestry Conference which was held in Canada in July, 1923. The statement which he prepared on forestry in Malaya was very comprehensive, and has been widely distributed.

There were no publications during the year except those in connection with the Empire Exhibition to which reference is made in paragraph 90.

110. The additions to the museum were few in number, but, when the exhibits for Wembley had been got rid of, it was possible to rearrange much of the material and to make the display generally more attractive. Until the whole museum collection can be moved into a larger building, it will not be possible to add to the exhibits. Additional material will have to be stored.

111. Owing to an unexpected shortage of staff, it was impossible to give a course of instruction to selected subordinates as was done in 1923. This is to be regretted as such instruction is undoubtedly valuable.

112. Two probationary Sub-Assistant Conservators of Forests were given a course of practical instruction locally. One Sub-Assistant Conservator of Forests obtained a nomination for a two years course of training at Forest College, Dehra Dun, and one entered on a similar course at University College, Rangoon.

113. No final decision was reached as to the site for proposed forest research institute, experimental plantations and school.

## CHAPTER IV.

## FINANCIAL RESULTS.

114. The following table shows the financial results of the year, and compares them with the estimates and with previous actuals. The estimates exclude provision for the clerical establishment and for temporary allowances. The actual expenditure shown under personal emoluments includes those items, which amounted during the year to \$178,110. Figures for the Timber Branch, which works on a suspense account, and which showed a small profit after payment of interest on loans from the Government, are also excluded.

The complete financial position is not shown in this statement, owing to the fact that such important items as pensions and expenditure on buildings and surveys are met from non-departmental votes.

State.	Revenue.	Expenditure.			Surplus or deficit.	Percentage of expenditure to revenue, and remarks.
		Personal emoluments.	Other charges.	Total.		
	\$	\$	\$	\$	\$	
Head-quarters ...	1,379	138,293	14,349	152,642	-151,263	Apparent errors in this statement are due to the elimination of cents
Perak North ...	389,193	82,390	31,342	113,732	+275,461	
Perak South ...	436,120	85,454	56,091	141,545	+294,575	
Selangor ...	238,949	88,021	29,284	117,504	+121,645	
Negri Sembilan ...	207,958	72,885	67,132	140,016	+67,941	
Pahang West ...	175,502	58,471	32,689	91,160	+84,342	
Pahang East ...	54,800	27,972	12,435	40,408	+14,392	
Total ...	1,503,901	553,486* 35,477*	243,322	796,808	+707,094	53.
		518,008	...	761,330	+742,571	50.6
Approved Estimates, 1924	1,292,800	496,021†	417,715	913,736	+379,064	70.7
Revised Actuals, 1923	1,338,611	536,583§	215,868	752,451	+456,705	62.2
Average actuals for five years, 1918-22	1,352,314	453,754	601,001	1,054,756	+297,558	78.

115. The surplus figure shows an amazing increase on that of any previous year. The excess of revenue over that for 1923 is \$294,745, and of this excess timber and firewood together account for \$260,000. Deducting from actual expenditure those items which are recoverable, the surplus of revenue over expenditure was \$742,571. These results are not due to increased charges, nor to abnormal receipts. If the price of tin is maintained, there is every probability that the figures for 1925 will be equally satisfactory. One result of the unforeseen expansion of revenue is that the proportion of expenditure to revenue was only 50 per cent. It is to be hoped that this will be adjusted in the future by a larger appropriation for improvement of the forests and the development of forest industries. Of the total revenue of \$1,503,901 no less than \$1,281,808 was derived from timber, firewood, and charcoal. Sixty per cent. of this revenue was from State and alienated land and so involved the virtual destruction of the forest. Forests being part of the country's capital, ordinary prudence demands that this money should be reinvested in the forests, which have been definitely set aside to provide for the needs of future generations. The greatest needs at the moment are an institution for forest research and education, and an equipment for timber testing, seasoning and impregnation.

\* Includes \$35,477 recoverable from the Straits Settlements and Kelantan Governments.

† Includes \$41,564.00 arrears of 1922 salaries and temporary allowances paid in 1923.

‡ Excludes \$12,800 recovered from the Colony on account of salaries and temporary allowances and credited to item 27 of the Federal Estimates.

§ Excludes Timber Branch.

## CHAPTER V.

## ADMINISTRATION AND GENERAL.

116. SENIOR ESTABLISHMENT.—Mr. G. E. S. Cubitt was in charge of the department until July 4th, when he went on leave and his duties were taken over by the writer. Mr. P. Phillips, who retired from the administrative branch of the service in 1923, assumed the duties of Forest Economist. Mr. A. E. Wells, Deputy Conservator of Forests, retired in June. Mr. G. J. Henbrey was promoted to fill the vacancy in the rank of Deputy Conservator of Forests caused by the retirement of Mr. Wells. During the year Messrs. J. P. Edwards, G. W. Somerville, E. J. Strugnell, H. J. T. Bonar and E. J. Shrubshall joined the department as Assistant Conservators of Forests. Two Assistant Conservators of Forests were again on deputation as Conservators of Forests in Johore and Kedah. Senior officers who were on leave in England did short spells of duty at the British Empire Exhibition at Wembley.

117. LOCALLY RECRUITED ENGLISH-SPEAKING ESTABLISHMENT.—Mr. V. P. Borges, Extra Assistant Conservator of Forests, retired and Mr. G. E. Neal, Sub-Assistant Conservator of Forests, resigned during the year. Messrs. G. M. O'Hara and V. O'Hara, Sub-Assistant Conservators of Forests, were promoted to be Extra Assistant Conservators of Forests. Mr. C. Foston, Sub-Assistant Conservator of Forests, went to Dehra Dun Forest College in March for a course of training, and in June Mr. V. L. Bain, Sub-Assistant Conservator of Forests, went to University College, Rangoon, for a similar purpose. Inche Baba, Sub-Assistant Conservator of Forests, went on deputation to Johore in place of Mr. Bain. Two probationers were given a course of practical training locally.

118. Among the subordinate staff there were three deaths, five resignations, seven retirements and thirteen dismissals. A new salary scheme was sanctioned during the year, and its provisions offer very good prospects to the Malays of the country. The difficulty remains of making the Malay fit for the duties required of him, and this can only be solved by the establishment of an institution where he can be given elementary professional training.

119. CONTROLLER OF TIMBER SUPPLIES.—The operations of this branch of the department were confined to buying timber for the Railway Department and for the Public Works Department Factory at Kuala Lumpur. As no machinery was in use stocks of timber were not accumulated. The revival of the railway sleeper industry was referred to in paragraph 54. In this connection the Controller of Timber Supplies writes:

“A system of part payment for cartage along a road or river was introduced and contributed largely to the revival of the industry. It is however significant that the allowance was paid on 133,535 sleepers out of a total of 295,702 purchased. This shows clearly that the prospective sleeper supply within three miles of the railway line is rapidly diminishing, and that hardwood sleepers will have to be sought further away from line side, with the prospect of enhanced prices, in the future. In some cases sleepers were cut 30 miles and more from rail side. The position is one which demands attention.”

The value of sleepers purchased was \$454,964. The total turnover was \$580,824. The committee appointed to consider the proposal that sawmilling and wood working should be undertaken by Government agency came to the conclusion that it had insufficient information at its disposal to make definite recommendations. The subsequent action taken is indicated in paragraph 96.

120. CULTIVATION IN FOREST RESERVES.—The policy of encouraging settlements in reserves was continued, but no particular settlement calls for comment. The general idea is that such settlements, when once established, will provide labour for forest work.

KUALA LUMPUR,  
9th April, 1925.

B. H. F. BARNARD,  
Acting Conservator of Forests, F.M.S. & S.S.

APPENDIX A.  
LIST OF TREES, ETC., MENTIONED IN THE REPORT.

Vernacular or English name.	Botanical name.	Uses.
Api-api ... ..	Avicennia spp. ... ..	Fuel for smoking fish and rubber
Bakau ... ..	Rhezophora spp. ... ..	Firewood, cutch
Bertam ... ..	Eugeissonia tristes <i>Griff</i> ... ..	Thatch
Berus ... ..	Bruguiera caryophylloides, <i>Bl.</i> ... ..	Firewood
Buey ... ..	Diospyros sp. ... ..	Ornamental timber
Chengal or Penak ... ..	Balanocarpus Heimii <i>King</i> , and Balanocarpus Wrayi <i>King</i> .	Timber; damar
Damar mata kucing ... ..	Hopea sp. ... ..	" "
Damar minyak or sanum ... ..	Agathis alba <i>Foxw.</i> ... ..	" copal
Gutta-percha ... ..	Palaquium spp. ... ..	Gutta-percha
Jelutong ... ..	Dyera spp. ... ..	Gum, timber; veneer for matches; clogs
Kapur ... ..	Dryobalanops aromatica <i>Gaertn. f.</i> ... ..	Timber; camphor
Kepayang ... ..	Pangium edule <i>Miq.</i> ... ..	Oil
Kemenyan ... ..	Styrax benzoin <i>L.</i> ... ..	Gum Benjamin
Keruing ... ..	Dipterocarpus spp. ... ..	Timber; wood-oil
Kulim ... ..	Scorodocarpus borneensis <i>Becc.</i> ... ..	Timber
Lalang ... ..	Imperata cylindrica <i>Beaur.</i> ... ..	(Weed)
Meranti ... ..	Shorea spp. ... ..	Timber; damar
" pahang ... ..	" Kunstleri <i>King.</i> ... ..	Timber
Meraga ... ..	Canthium didymum ... ..	"
Merbatu ... ..	Parinarium rubiginosum ... ..	"
Petaling ... ..	Ochanostachys amentacea <i>Mast.</i> ... ..	"
Penak or Chengal ... ..	Balanocarpus Heimii <i>King</i> , and Balanocarpus Wrayi <i>King</i> .	Timber; damar
Resam ... ..	Gleichenia spp. ... ..	(A weed)
Rotan sega ... ..	Calamus Caesius <i>Bl.</i> ... ..	Canes
Taban ... ..	Palaquium and Payena spp. ... ..	Gutta-percha
" merah ... ..	" Gutta <i>Burck.</i> ... ..	"
Yemane (Burmese) ... ..	Gmelina arborea <i>Linn.</i> ... ..	Timber

## APPENDIX B.

## STATEMENT OF SLEEPERS PAID FOR DURING THE YEAR.

Species.	Class I No.	Class II No.	Class III No.	Cross- ing.	Rejec- tion.	Total.		Revenue.
						No.	Tons.	
								\$
PERAK NORTH.								
Chengal ...	71	31	...	...	5	107	5	42
Merbau ...	2,028	619	...	...	31	2,678	121	1,118
Resak ...	22	32	...	...	8	62	3	21
Meranti ...	...	...	...	...	86	86	4	15
Total ...	2,121	682	...	...	130	2,933	132	1,197
PERAK SOUTH.								
Chengal ...	155	58	...	...	11	224	10	89
Merbau ...	537	457	...	...	76	1,070	48	396
Resak ...	125	148	...	...	12	285	13	106
Total ...	817	663	...	...	99	1,579	71	591
NEGRI SEMBILAN.								
Chengal ...	765	194	...	...	29	988	44	410
Merbau ...	18,462	4,532	...	114	473	23,581	1,071	9,986
Resak ...	35,122	16,679	...	547	2,186	54,534	2,503	23,179
Tembusu ...	81	30	...	...	3	114	5	46
Rengas ...	...	...	...	...	5	5	...	...
Kumus ...	677	374	...	...	64	1,115	50	431
Mersawa ...	...	...	...	...	51	51	2	9
Total ...	55,107	21,809	...	661	2,811	80,388	3,677	34,061
PAHANG WEST.								
Chengal ...	31,458	6,319	...	356	476	38,609	1,769	16,760
Merbau ...	45,367	14,261	...	738	1,803	62,169	2,864	26,237
Resak ...	49,413	20,284	...	483	1,770	71,950	3,281	29,689
Tembusu ...	258	103	...	...	...	361	16	150
Total ...	126,496	40,967	...	1,577	4,049	173,089	7,931	72,837
ALL STATES.								
Chengal ...	32,449	6,602	...	356	521	39,928	1,829	17,302
Merbau ...	66,394	19,869	...	852	2,383	89,498	4,104	37,737
Resak ...	84,682	37,143	...	1,030	3,976	126,831	5,800	52,995
Meranti ...	...	...	...	...	86	86	4	15
Tembusu ...	339	133	...	...	3	475	21	197
Rengas ...	...	...	...	...	5	5	...	...
Kumus ...	677	374	...	...	64	1,115	50	431
Mersawa ...	...	...	...	...	51	51	2	9
Total, 1924 ...	184,541	64,121	...	2,238	7,089	257,989	11,811	108,686
„ 1923 ...	38,708	19,717	971	81	3,987	63,464	2,863	24,565
„ 1922 ...	10,100	5,955	754	338	2,173	19,320	900	3,973
„ 1921 ...	202,175	54,119	13,842	2,807	4,098	277,041	12,719	57,396

Apparent errors in this statement are due to the elimination of cents and fractions of a ton.  
The numbers given for each species are only approximately accurate.

APPENDIX C.

TIMBER BRANCH.

ASSETS AND LIABILITY STATEMENT, 1924.

Liabilities.				\$	c.	Assets.				\$	c.
Amount authorized for suspense account	...	...	...	600,000	00	Furniture and Fittings	...	...	...	4,008	99
F.M.S. Treasury for advance on suspense account	...	...	...	300,000	00	Stores Stationery, etc.	...	...	...	2,709	65
Sundry Creditors:						Timber Stocks, Sleepers	...	...	...	\$290,290.93	
On contracts	...	...	...	\$ 63.40		Scantlings	...	...	...	583.87	
Salaries and wages	...	...	...	2,064.57						290,874	80
On open account	...	...	...	1,515.48		Sundry debtors	...	...	...	12,188	97
Government forms	...	...	...	154.60		Cash in hand	...	...	...	Nil	
				—————	3,798 05	Cash in Bank	...	...	...	16,904	35
Reserv.s. Depreciation	...	...	...	834.69							
Passage	...	...	...	2,581.07							
Leave pay	...	...	...	9,189.57							
Interest	...	...	...	9,957.54							
				—————	22,562 87						
Balance at profit and loss account	...	...	...	325	84						
				—————	326,686 76					326,686	76

The total turnover for 1924 is \$140,132.67.

APPENDIX D.

NEGRI SEMBILAN DAMAR ACCOUNT.

<i>Dr.</i>	TRADING AND PROFIT AND LOSS ACCOUNT FOR THE YEAR 1924.				<i>Cr.</i>					
	Expenses in forests.		Expenses at receiving stations.		Expenses at central store.		Total.			
	\$	c.	\$	c.	\$	c.	\$	c.	\$	c.
To stock on hand and in transit on 1st January, 1924 ... ..	...	...	...	...	...	...	3,280	53		
„ payments to tappers ... ..	18,854	50	...	...	...	...	18,854	50		
„ tools and plant ... ..	89	80	...	...	...	...	89	80		
„ carriage, portorage and freight ... ..	20	43	...	...	978	68	999	11		
„ rent ... ..	128	18	113	00	1,198	71	1,439	89		
„ proportion of salaries of foresters and guards ... ..	5,220	00	1,800	00	504	00	7,524	00		
„ equipment ... ..	...	...	4	70	75	02	79	72		
„ packing, sorting and grading ... ..	...	...	...	...	5,141	23	5,141	23		
„ bagging and despatching ... ..	...	...	959	55	2,011	59	2,971	14		
„ sundries and repairs ... ..	44	92	7	00	56	58	108	50		
„ purchases from other States ... ..	...	...	...	...	...	...	14,550	54		
	24,357	83	2,884	25	9,965	81	55,038	96		
Gross profit carried down ... ..	...	...	...	...	...	...	41,080	42		
							96,119	38		
To proportion of staff salaries, etc. ... ..	...	...	...	...	...	...	3,900	00		
„ agent's commission ... ..	...	...	...	...	...	...	1,639	92		
„ expenses at Singapore in connection with sales and despatch to Europe ... ..	...	...	...	...	...	...	967	51		
„ books and stationery ... ..	...	...	...	...	...	...	222	84		
„ insurance, stamp duty, etc. ... ..	...	...	...	...	...	...	1,262	67		
„ sundries ... ..	...	...	...	...	...	...	91	30		
„ refunds ... ..	...	...	...	...	...	...	718	55		
	...	...	...	...	...	...	8,802	79		
„ nett profit for the year 1924 ... ..	...	...	...	...	...	...	32,277	63		
							41,080	42		
									91,804	94
									4,314	44
									41,080	42

## Form I.

## AREA OF CONSTITUTED AND PROPOSED RESERVED FORESTS.

State and District.	Name of forest.	Constituted reserves.				Proposed reserves preliminarily notified but not constituted.	No. of notification and remarks.
		Area on 1-1-1924.	Added during year.	Excluded during year.	Area on 31-12-1924.		
		Acres.	Acres.	Acres.	Acres.	Acres.	
PERAK NORTH.							
Upper Perak ... ..	Padang Chong	8,898	...	...	8,898	...	
Do. ... ..	Lapang Nining	14,900	...	...	14,900	...	
Do. ... ..	Papulut	36,000	...	...	36,000	...	
Do. ... ..	Kendrong	...	...	...	...	115,000	8167 of 28-11-24
Do. and K. Kangsar	Piah	166,500	...	...	166,500	...	
Upper Perak, Selama, Larut, and K. Kangsar	Bintang Hijau	147,750	...	...	147,750	133,305	5608 of 17-12-20
Selama ... ..	Ijok	11,661	...	...	11,661	...	
Selama, Larut and Krian	Pondok Tanjong	26,388	...	546	25,842	...	8546 of 12-12-24
Krian ... ..	Kurau Mangrove	5,274	...	...	5,274	...	
Do. ... ..	Semanggol	2,778	...	...	2,778	...	
Matang ... ..	Bukit Naga	2,530	...	...	2,530	...	
Krian and Matang	Matang Mangrove	98,097	...	...	98,097	...	
Larut ... ..	Assam Kumbang	31	...	...	31	...	
K. Kangsar and Larut	Larut Hills	27,292	...	1	27,291	1,283	1796 of 21-3-24 and 6543 of 19-10-23
K. Kangsar, Larut, and Matang	Bubu	95,826	...	...	95,826	120	5084 of 8-8-24. Includes 4,480 acres in Perak South
Kuala Kangsar	Chior	10,700	...	...	10,700	...	
Do. ... ..	Plus	13,600	...	...	13,600	...	
Do. ... ..	Kledang Saiong	86,357	...	...	86,357	...	Includes 27,537 acres in Perak South
PERAK SOUTH.							
Kuala Kangsar	Bruas	16,355	...	...	16,355	...	
Do. ... ..	Parit	24,044	...	265	23,779	...	8547 of 12-12-24
Kinta ... ..	Tanjong Toh Alang	8,870	...	...	8,870	...	
K. Kangsar and Lower Perak	Raja Hitam	13,500	...	...	13,500	...	
Lower Perak	Pulau Tiga	395	...	...	395	...	
Do. ... ..	Changkat Jong	9,650	...	...	9,650	...	
Do. ... ..	Telok Bharu	1,356	...	...	1,356	...	
Do. ... ..	Rungkup	10,081	...	...	10,081	...	
Do. ... ..	Erong	15,500	...	...	15,500	...	
Do. ... ..	Utah Melintang	...	...	...	...	27,750	1795 of 21-3-24
Lower Perak and Batang Padang	Kroh	10,395	...	...	10,395	19,253	4427 of 28-7-22. Survey correction
Batang Padang	Chikus	13,454	...	...	13,454	...	
Do. ... ..	Bikam	9,350	...	...	9,350	...	
Do. ... ..	Trolak	18,085	...	...	18,085	...	
Do. ... ..	Besout	4,865	39,270	...	44,135	...	741 of 8-2-24
Do. ... ..	Behrang	5,372	...	...	5,372	...	
Do. ... ..	Srigala	...	7,760	...	7,760	...	742 of 8-2-24
	Total Perak	915,854	47,030	812	962,072	296,711	
	Square miles	1,431.02	73.48	1.27	1,503.24	463.61	
SELANGOR.							
Ulu Selangor	Bukit Kutu	15,770	...	...	15,770	...	
Do. ... ..	Kuang	1,768	...	...	1,768	...	
Do. ... ..	Kanching	1,180	...	...	1,180	...	
Do. ... ..	Bukit Belata	32,100	...	...	32,100	...	
Do. ... ..	Rantau Panjang	23,395	...	...	23,395	...	
Do. ... ..	Bukit Tarek	11,474	...	...	11,474	...	
Do. ... ..	Semangko	3,430	...	...	3,430	...	
Do. ... ..	Gading	13,375	...	...	13,375	...	
Do. ... ..	Batang Kali	22,700	...	...	22,700	...	
Ulu Selangor and Kuala Lumpur	Bukit Lagong	7,650	...	...	7,650	2,124	41 of 12-1-23 4046 of 13-7-23 and 6992 of 2-11-23
Kuala Selangor	Banjar	8,451	1,330	53	9,728	...	1065 of 22-2-24 and 8,169 of 28-11-24
Do. ... ..	Bukit Badong	4,415	...	...	4,415	...	
Do. ... ..	K. Bernam	4,654	...	...	4,654	...	In charge of D.C.F., Perak South
Do. ... ..	Panchang Pedena	...	...	...	...	4,000	In charge of D.C.F., Perak South 6991 of 2-11-23

## Form I—(cont.)

## AREA OF CONSTITUTED AND PROPOSED RESERVED FORESTS.—(cont.)

State and District.	Name of forest.	Constituted reserves.				Proposed reserves preliminarily notified but not constituted.	No. of notification and remarks.
		Area on 1-1-1924.	Added during year.	Excluded during year.	Area on 31-12-1924.		
		Acres.	Acres.	Acres.	Acres.	Acres.	
SELANGOR—(cont.).							
Kuala Selangor & Klang	Bukit Cheraka...	24,263	...	4,710	19,553	11,000	3892 of 13-6-24 and 388 of 25-1-24 3543 of 30-5-24
Do.	Kapar ...	14,124	344	...	14,468	...	
Klang ...	Klang Islands ...	21,817	...	...	21,817	...	
Do. ...	Pulau Lumut ...	15,465	...	...	15,465	...	
Do. ...	Teluk Gedong ...	6,182	...	...	6,182	...	
Do. ...	Pulau Tengah ...	1,335	...	...	1,335	...	
Klang and K. Langat ...	Teluk ...	8,856	...	...	8,856	...	
Do. ...	Jugra ...	8,626	...	...	8,626	...	
Kuala Langat ...	Kelambu ...	8,620	...	...	8,620	46,800	3325 of 15-6-23 and 2893 of 2-5-24 In charge of D.C.F., Negri Sembilan
Do.	Sepang Kechil ...	1,382	...	...	1,382	...	
Kuala Lumpur ...	Weld's Hill ...	43	...	...	43	...	
Do. ...	Sungai Buloh ...	16,205	...	...	16,205	...	
Do. ...	Circular Road ...	13	...	...	13	...	
Do. ...	Ulu Gombak ...	43,093	...	...	43,093	6,014	1157 of 9-3-23
Do. ...	Ampang ...	7,273	...	...	7,273	...	
K. Lumpur & U. Langat	Bukit S. Puteh ...	4,594	...	...	4,594	150	3544 of 30-5-24
Ulu Langat ...	Gunong Itam ...	5,170	...	...	5,170	...	
Do. ...	Sungai Lallang ...	12,965	...	...	12,965	...	
Do. ...	Ayer Itam ...	11,239	...	...	11,239	...	
Do. ...	Bangi ...	2,214	...	...	2,214	...	
Do. ...	Bukit Tunggul ...	1,980	...	...	1,980	...	
Do. ...	Bukit Enggang ...	3,045	...	...	3,045	...	
Do. ...	Ulu Langat ...	...	...	...	...	41,000	5372 and 5374 of 8-9-22
	Total Selangor	368,866	1,674	4,763	365,777	111,088	
	Square miles ...	576.35	2.62	7.44	571.53	173.57	
NEGRI SEMBILAN.							
Jelebu ...	Triang ...	23,265	...	...	23,265	...	
Jelebu and Kuala Pilah	Pasoh ...	57,498	...	...	57,498	...	
Jelebu, Kuala Pilah, and Seremban	Berembun ...	52,650	...	...	52,650	...	
Kuala Pilah ...	Senaling-Inas ...	19,941	...	...	19,941	...	
Do. ...	Serting ...	3,908	...	...	3,908	...	
Do. ...	Kepis ...	6,791	...	...	6,791	...	
Do. ...	Bahau ...	19,610	...	...	19,610	...	
Do. ...	Jeram Padang N.	2,507	...	...	2,507	...	
Do. ...	" " S.	1,856	...	...	1,856	...	
Kuala Pilah, Seremban, and Tampin	Angsi ...	...	30,160	...	30,160	...	5126 of 22-8-24
K. Pilah and Tampin ...	Jelai-Gemas ...	23,989	...	...	23,989	18,000	2198 of 4-4-24 Survey correction
Do. ...	Palong ...	93,000	6,340	...	99,340	...	
Seremban ...	Senawang ...	1,864	...	...	1,864	...	
Do. ...	Lenggeng ...	4,347	...	...	4,347	...	
Do. ...	Labu ...	13,858	...	...	13,858	...	
Do. ...	Galla ...	...	...	...	...	11,612	2438 of 2-6-21. Sur vey correction 3227 of 16-5-24
Do. ...	Bukit Tunggul (Extension)	...	1,704	...	1,704	...	
Tampin ...	Gunong Tampin	5,689	...	...	5,689	...	
Do. ...	Tebong ...	6,549	...	...	6,549	...	
Do. ...	South Gemas ...	17,170	...	...	17,170	...	
Do. ...	Pedas ...	16	...	...	16	...	
Coast ...	Sepang ...	1,651	...	...	1,651	...	
Do. ...	Sendayan ...	2,862	...	...	2,862	...	
Do. ...	Jimah ...	1,326	...	...	1,326	...	
Do. ...	Pasir Panjang ...	1,335	...	...	1,335	...	
Do. ...	" Puteh ...	55	...	...	55	...	
Do. ...	Port Dickson ...	12	...	...	12	...	
Do. ...	Menyala ...	5,723	...	...	5,723	...	
Do. ...	Lukut ...	1,959	...	...	1,959	...	
	Total N.S. ...	369,431	38,204	...	407,635	29,612	
	Square miles ...	577.24	59.69	...	636.93	46.27	

## Form I—(cont.)

## AREA OF CONSTITUTED AND PROPOSED RESERVED FORESTS.—(cont.)

State and district.	Name of forest.	Constituted reserves.				Proposed reserves preliminarily notified but not constituted.	No. of notification and remarks.
		Area on 1-1-1924.	Added during year.	Excluded during year.	Area on 31-12-1924.		
		Acres.	Acres.	Acres.	Acres.	Acres.	
PAHANG WEST.							
Lipis ... ..	Jelai ... ..	6,490	...	...	6,490	...	
Do. ... ..	Kechau ... ..	6,138	...	...	6,138	...	
Do. ... ..	Yong ... ..	97,000	...	...	97,000	...	
Do. ... ..	Benchah ... ..	11,330	659	...	11,989	...	Survey correction
Do. ... ..	Som ... ..	32,750	...	...	32,750	...	
Do. ... ..	Mangsok ... ..	671	...	...	671	...	
Do. ... ..	Putat ... ..	2,008	...	...	2,008	...	
Do. ... ..	Tekam ... ..	120,000	...	...	120,000	...	
Do. ... ..	Terengun ... ..	...	...	...	...	1,137	743 of 8-2-24
Do. ... ..	Tekai ... ..	...	83,000	...	83,000	...	1453 of 7-3-24
Lipis and Raub ... ..	Tersang... ..	...	...	...	...	60,000	( 1027 of 24-2-22 ( Survey correction
Raub ... ..	Ulu Dong ... ..	2,814	...	...	2,814	...	
Do. ... ..	Jahit ... ..	768	...	...	768	...	
Do. ... ..	Rotan Tunggal ... ..	1,724	...	...	1,724	...	
Do. ... ..	Bukit Kajang ... ..	...	...	...	...	8,600	7632 of 15-12-22
Raub and Bentong ... ..	Kelau ... ..	69,466	...	...	69,466	...	
Bentong ... ..	Benus Telemong ... ..	...	...	...	...	117,000	( 2723 of 2-7-20 ( 4049 of 13-7-23
Bentong and Temerloh ... ..	Kemasul ... ..	121,057	...	...	121,057	...	
Raub and Temerloh ... ..	Lakum ... ..	72,000	...	...	72,000	...	
Temerloh ... ..	Jinka ... ..	...	...	...	...	125,000	1292 of 10-5-18
Do. ... ..	Kerdau ... ..	15,000	...	...	15,000	...	
Do. ... ..	Krau ... ..	6,957	...	...	6,957	...	
PAHANG EAST.							
Kuantan ... ..	Baloh ... ..	28,894	...	...	28,894	...	
Do. ... ..	Bukit Goh ... ..	20,939	...	...	20,939	...	
Do. ... ..	Kuantan ... ..	1,424	...	...	1,424	...	
Do. ... ..	Berkelah ... ..	15,500	...	...	15,500	...	
Pekan ... ..	Lepar ... ..	60,506	...	...	60,506	...	
Do. ... ..	Chini ... ..	29,800	...	...	29,800	...	
Do. ... ..	Aur ... ..	123,500	...	...	123,500	...	
Do. ... ..	Lesong ... ..	328,700	...	...	328,700	...	
Do. ... ..	Mentas ... ..	1,435	...	...	1,435	...	
Do. ... ..	Perah ... ..	503	...	...	503	...	
Do. ... ..	Menchali ... ..	1,522	...	...	1,522	...	
Do. ... ..	Rompin Mangrove ... ..	393	2	...	395	...	Survey correction
Do. ... ..	Pulau Lang ... ..	59	...	...	59	...	
Do. ... ..	Pontian Mangrove ... ..	470	...	...	470	...	
	Total Pahang ...	1,179,818	83,661	...	1,263,479	311,737	
	Square miles ...	1,843.47	130.72	...	1,974.19	487.09	

## SUMMARY.

Perak ... ..	915,854	47,030	812	962,072	296,711
Selangor ... ..	368,866	1,674	4,763	365,777	111,088
N. Sembilan ... ..	369,431	38,204	...	407,635	29,612
Pahang ... ..	1,179,818	83,661	...	1,263,479	311,737
Total ...	2,833,969	170,569	5,575	2,998,963	749,148
		164,994			
Square miles ...	4,428.08	266.51	8.71	4,685.88	1,170.54
		257.80			
Total 1923 ...	2,337,178	507,510	10,719	2,833,969	787,026
		496,791			
Square miles ...	3,651.84	792.98	16.75	4,428.08	1,229.73
		776.24			



## STATEMENT OF SURVEYS DURING THE YEAR 1924.

Locality and nature of survey.	By Survey Department.				By Forest Department.				Remarks.
	Acres.	Miles.	Chains.	Expenditure.	Acres.	Miles.	Chains.	Expenditure.	
				\$				\$	
PERAK NORTH.									
Bintang Hijau Reserve—									
Damar tapping areas ... ..	...	...	...	...	...	3	...	...	By Forest Staff
Matang Reserve—									
Coupe boundaries ... ..	...	...	...	...	2,850	15	...	...	..
Total ...	...	...	...	...	2,850	18	...	...	..
PERAK SOUTH.									
Interior details—									
Kroh Reserve ... ..	...	...	...	...	...	9	24	50	
Chikus „ ... ..	...	...	...	...	...	14	27	65	
Teluk Bharu Reserve ... ..	...	...	...	...	...	1	40	8	
Rungkup Reserve ... ..	...	...	...	...	...	6	...	23	
Enumeration Rentises—									
State Land, Batang Padang ... ..	...	...	...	...	...	5	...	22	
Parit Reserve ... ..	...	...	...	...	...	30	...	450	
Coupe Boundaries—									
Parit Reserve ... ..	...	...	...	...	...	4	31	...	By Forest Staff
Paths, Parit Reserve ... ..	...	...	...	...	...	1	31	...	..
Firewood areas—									
Kledang Saiong Reserve ... ..	...	...	...	...	478	4	36	...	..
Sample Plot—									
Behrang Reserve ... ..	...	...	...	...	...	...	40	3	
Boundary Survey—									
Kroh Extension ... ..	19,253	28	58	11,978	...	...	...	...	
Topo. Survey—									
Parit Reserve ... ..	...	...	...	9,865	...	...	...	...	In hand. Paid from Forest Department vote
Total ...	19,253	28	58	21,842	478	76	69	621	
SELANGOR.									
Klang Mangrove—									
Coupe boundaries ... ..	...	...	...	...	...	8	...	...	By Forest Staff
Cheraka Reserve—									
Catchment area ... ..	...	...	...	...	...	10	...	8	
State Land—									
Rubber area ... ..	...	...	...	...	...	1	...	8	
Kanching Reserve—									
Kapur area and new paths ... ..	...	...	...	...	...	4	...	59	

## STATEMENT OF SURVEYS DURING THE YEAR 1924—(cont.)

Locality and nature of survey.	By Survey Department.				By Forest Department.				Remarks.
	Acres.	Miles.	Chains.	Expenditure.	Acres.	Miles.	Chains.	Expenditure.	
				\$				\$	
SELANGOR—(cont.)									
Boundary Surveys—									
Bukit Arang Reserve ... ..	...	...	...	5,440	...	...	...	...	In hand
Bukit Lagong Extension ... ..	97	1	20	185	...	...	...	...	
Access Road—									
Endong Reserve ... ..	46	2	...	230	...	...	...	...	
Total ...	143	3	20	5,855	...	23	...	76	
NEGRI SEMBILAN.									
Gunong Angsi—									
Agathis Alba area ... ..	...	...	...	...	200	...	...	14	
Langkap—									
Damar tappers settlement ... ..	...	...	...	...	6	...	...	...	By Forest Staff
Boundary Surveys—									
Bukit Tunggul Reserve ... ..	1,704	8	20	82	...	...	...	...	Office work
Bukit Galla Reserve ... ..	11,612	37	...	226	...	...	...	...	
Palong Reserve... ..	99,340	55	40	1,160	...	...	...	...	"
Total ...	112,656	100	60	1,468	206	...	...	14	
PAHANG WEST.									
Boundary surveys—									
Bencha Reserve ... ..	11,989	31	28	8,067	...	...	...	...	
Kelau " ... ..	...	15	43	...	...	...	...	...	
Bukit Kajang Reserve... ..	...	7	51	...	...	...	...	...	In hand
Kemasul Reserve ... ..	...	6	00	...	...	...	...	...	
Jinka Reserve ... ..	...	66	00	...	...	...	...	...	"
Access Road—Kemasul Reserve ... ..	...	8	40	...	...	...	...	...	
Total ...	11,989	135	02	8,067	...	...	...	...	
PAHANG EAST.									
Boundary surveys—									
Pontian Reserve ... ..	470	4	30	332	...	...	...	...	
Total ...	470	4	30	332	...	...	...	...	
GRAND TOTAL ...	144,511	272	10	37,565	3,534	117	69	712	

## COMMUNICATIONS AND BUILDINGS, 1924.

NEW WORK UNDERTAKEN DURING THE YEAR.						ALTERATIONS AND REPAIRS EXECUTED DURING THE YEAR.											
Roads and Bridges.			Buildings.			Other works.			Roads and Bridges.			Buildings.			Other works.		
Description of road or path.	Miles.	Cost.	Description of building.	Cost.	Description of work.	Cost.	Description of road and nature of repairs.	Miles.	Cost.	Description of building and nature of repairs.	Cost.	Description of work and nature of repairs.	Cost.				
		§		§		§			§		§		§				
PERAK.																	
Inspection path— Parit Reserve ...	25	1,279	Temporary quarters in Matang Mangrove Reserve ...	98	Asam Kumbang F'Gds. quarters— Cement drain...	148	General repairs— Perak (N) ...	28	391	General repairs— Perak (N) ...	1,599	Maintenance of compounds— Perak (N) ...	198				
			Quarters for damar staff— Sumpitan ...	620	Wells— Semat ...	16	" (S) ...	148	523	" (S) ...	3,157	" (S) ...	136				
			Lines for damar tappers— Selat Pagar ...	100	Utah Melintang	21	<i>By P.W.D.</i>			General repairs— Perak (S) ...	306	Caretaker ...	216				
			Temporary Checking Stations— Kroh Reserve...	380	Water tanks— Pasir Hitam ...	18	<i>By P.W.D.</i>					<i>By P.W.D.</i>					
			Parit Reserve...	420	K. Bernam ...	10	Repairs to approach road— Sungei Siput		95			Fixing safe— Matang Office ...	13				
			Latrines to Checking Stations— Batu Gajah ...	68	Fencing— Menglembu ...	48	Checking Station ...										
			Kampar ...	40													
			Pulai ...	75													
			Gopeng ...	60													
			Tronoh ...	75													
			Removing and re-building F.G.'s quarters— Papan ...	200													
			Kuala Bernam	173													
			Coolie Lines— Parit Reserve...	650													
			Trolak Reserve	1,200													
			<i>By P.W.D.</i>														
			Subordinates' quarters— Padang Gajah	1,350													
			A.C.F.'s quarters, K. Kangsar Garage ...	1,030													
Total ...	25	1,279	Total ...	6,540	Total ...	262	Total ...	176	1,009	Total ...	5,061	Total ...	562				

## COMMUNICATIONS AND BUILDINGS, 1924—(cont.)

NEW WORK UNDERTAKEN DURING THE YEAR.						ALTERATIONS AND REPAIRS EXECUTED DURING THE YEAR.											
Roads and Bridges.			Buildings.			Other works.			Roads and Bridges.			Buildings.			Other works.		
Description of road or path.	Miles.	Cost.	Description of building.	Cost.	Description of work.	Cost.	Description of road and nature of repairs.	Miles.	Cost.	Description of building and nature of repairs.	Cost.	Description of work and nature of repairs.	Cost.				
		\$		\$		\$			\$		\$		\$				
SELANGOR.																	
Inspection paths--			<i>By P.W.D.</i>		Well—		Paths—			General repairs ...	1,394	Caretaker—					
Sungei Buloh ...	3	87			Rantau Panjang	3	General repairs	90	237			Rantau Panjang	252				
Kanching ...	2	46	Subordinates' quarters—				Bukit Kutu Sanitorium ...	3	183	<i>By P.W.D.</i>		General repairs and maintenance of compounds ...	33				
Sungai Gapis Estate Road ...	½	499	Jugra ...	2,420			Roads—			General repairs ...	3,384						
			Teluk Merbau ...	3,345			Sungai Buloh ...	½	91	Colour washing and general repairs D.C.F.'s Office ...	2,258						
			Temporary quarters—				Sungai Gapis Estate ...	½	206								
			Sungai Luit ...	500													
			Rantau Panjang	500													
			Latrines—														
			Klang ...	51													
<i>By P.W.D.</i>																	
Sungai Buloh Road (unfinished) ...	1	2,785															
Total ...	6½	3,418	Total ...	6,816	Total ...	3	Total ...	94	717	Total ...	7,036	Total ...	285				
NEGRI SEMBILAN.																	
			<i>By P.W.D.</i>		Fencing—		General repairs ...	136½	457	General repairs ...	4	Caretakers	268				
			Subordinates' quarters—		Tebong checking Station ...	25				<i>By P.W.D.</i>		Miscellaneous ...	8				
			Selaru ...	490						General repairs ...	2,571						
Total ...	...	...	Total ...	490	Total ...	25	Total ...	136½	457	Total ...	2,576	Total ...	276				
PAHANG.																	
			Inspection Bunga-		Fencing—		General repairs—			General repairs—		Mentakab Office—					
			low—		Mentakab ...	102	Pahang (W) ...	43½	234	Pahang (W) ...	1,618	Watchman's salary ...	220				
			Jambu Rias ...	725	Well—		" (E) ...	28½	132	" (E) ...	966	General repairs and maintenance of compounds—					
			Tanjong Pasir	525	Chegar Perah ...	8						Pahang (W) ...	14				
			Office, Mentakab—		Notice Board—					<i>By P.W.D.</i>		" (E) ...	93				
			Final payment ...	100	Checking Station, Raub ...	5				General repairs—	43						
			Temporary quarters, Kuala Medang ...	100													
			Checking Station—														
			Chegar Perah ...	400													
			Subordinates' quarters—														
			Baloh ...	875													

		<i>By P.W.D.</i>									
		Checking Station and Store—									
		Kuala Lipis ...		3,000							
		Quarters for Ranger & Guard, Mentakab—									
		Final Payment		300							
		Checking Stations—									
		Raub ... ..		995							
		Cheroh ... ..		985							
		Karak ... ..		1,000							
		Ginting Simpah		850							
		Kuala Bera ...		500							
		Clerk's quarters—									
		Mentakab (incomplete) ...		1,981							
Total ...		...		Total ...		12,336		Total ...		115	
								Total ...		72	
										366	
								Total ...		2,628	
										Total ...	
										327	

SUMMARY.

PERAK ... ..	25	1,279	...	6,540	...	262	...	176	1,009	...	5,061	...	562
SELANGOR ... ..	6½	3,418	...	6,816	...	3	...	94	717	...	7,036	...	285
NEGRI SEMBILAN ... ..	...	...	...	490	...	25	...	136½	457	...	2,576	...	276
PAHANG ... ..	...	...	...	12,336	...	115	...	72	366	...	2,628	...	327
Total ...	31½	4,697	Total ...	26,182	Total ...	404	Total ...	478½	2,549	Total ...	17,301	Total ...	1,451
				\$31,283					\$21,301				

Total spent by Forest Department ... .. \$21,830  
 „ Public Works Department ... .. 30,753  
 Grand Total ... .. \$52,584

Apparent errors in this form are due to the elimination of cents.

## SUMMARY OF FOREST OFFENCES FOR THE YEAR 1924.

State.	Pending from previous year.		New Cases.								Cases disposed of																Confiscated property sold or released (sections 44 and 47).		Compensation for damage to trees or timber (section 45).		Still pending.				
			Unauthorized felling, removal, or appropriation of Forest Produce.		Other offences.		Total.		Grand total of pending and new cases.		Convictions.								Acquitted or discharged (without caution).		Total.														
			Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	%	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Cases.	%	Cases.							%	Cases.	Persons.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30						
Perak (North)	A	...	...	47	63	3	7	50	70	50	70	...	...	44	60	783	3	5	47	65	3	5	50	70	22	102	...	...	...	...					
	B	3	3	127	156	2	14	129	170	132	173	...	...	122	158	806 <sup>a</sup>	7	12	129	170	1	1	130	171	68	606	...	...	2	2					
	C	...	...	17	23	...	...	17	23	17	23	...	...	...	...	...	...	...	...	...	...	...	17	23	12	38	...	...	...	...					
Total	...	3	3	191	242	5	21	196	263	199	266	...	...	166	218	1,589	10	17	176	235	4	6	197	264	102	746 <sup>b</sup>	...	...	2	2					
Perak (South)	A	...	...	62	86	1	1	63	87	63	87	...	...	57	78	1,249	2	4	59	82	2	3	61	85	45	291	...	...	2	2					
	B	...	...	199	237	9	10	208	247	208	247	...	...	206	245	2,966 <sup>c</sup>	...	...	206	245	...	...	206	245	70	1,157	1	5	2	2					
	C	...	...	25	39	...	...	25	39	25	39	...	...	...	...	...	...	...	...	...	...	...	25	39	19	193	...	...	...	...					
Total	...	...	...	286	362	10	11	296	373	296	373	...	...	263	323	4,215	2	4	265	327	2	3	292	369	134	1,641 <sup>d</sup>	1	5	4	4					
Selangor	A	...	...	32	52	6	16	38	68	38	68	4	5	28	52	2,277	2	2	34	59	4	9	38	68	20	37	1	1	...	...					
	B	5	7	222	289	...	...	222	289	227	296	...	...	225	294	2,287 <sup>e</sup>	...	...	225	294	...	...	225	294	17	158	8	71	2	2					
	C	...	...	9	13	1	5	10	18	10	18	...	...	...	...	...	...	...	...	...	...	...	10	18	4	24	...	...	...	...					
Total	...	5	7	263	354	7	21	270	375	275	382	4	5	253	346	4,564	2	2	259	853	4	9	273	380	41	218 <sup>f</sup>	9	72	2	2					
Negri Sembilan	A	...	...	8	8	...	...	8	8	8	8	...	...	6	6	125	2	2	8	8	...	...	8	8	3	52	...	...	...	...					
	B	1	1	49	51	13	13	62	64	63	65	...	...	63	65	678	...	...	63	65	...	...	63	65	27	279	...	...	...	...					
	C	...	...	...	...	2	2	2	2	2	2	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...					
Total	...	1	1	57	59	15	15	72	74	73	75	...	...	69	71	803	2	2	71	73	...	...	73	75	30	331 <sup>g</sup>	...	...	...	...					
Pahang (West)	A	...	...	13	14	...	...	13	14	13	14	...	...	5	5	17	...	...	5	5	8	9	13	14	5	5	...	...	...	...					
	B	3	3	50	52	...	...	50	52	53	55	...	...	51	53	646	...	...	51	53	...	...	51	53	2	13	...	...	2	2					
	C	...	...	1	1	...	...	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...					
Total	...	3	3	64	67	...	...	64	67	67	70	...	...	56	58	663	...	...	56	58	8	9	65	68	7	17	...	...	2	2					
Pahang (East)	A	...	...	7	7	...	...	7	7	7	7	...	...	6	6	275	...	...	6	6	1	1	7	7	5	97	...	...	...	...					
	B	...	...	34	39	...	...	34	39	34	39	...	...	34	39	411	...	...	34	39	...	...	34	39	3	29	...	...	...	...					
	C	...	...	1	1	...	...	1	1	1	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...					
Total	...	...	...	42	47	...	...	42	47	42	47	...	...	40	45	686	...	...	40	45	1	1	42	47	8	126 <sup>h</sup>	...	...	...	...					
Total for F.M.S.	A	...	...	169	230	10	24	179	254	179	254	4	5	146	207	4,727	9	13	159	225	18	27	177	252	100	584	1	1	2	2					
	B	12	14	681	824	24	37	705	861	717	875	...	...	701	854	7,794	7	12	708	866	1	1	709	867	187	2,241	9	76	8	8					
	C	...	...	53	77	3	7	56	84	56	84	...	...	...	...	...	...	...	...	...	...	...	56	84	35	254	...	...	...	...					
Grand Total	...	12	14	903	1131	37	68	940	1199	952	1213	4	5	847	1061	12,521	16	25	867	1091	19	28	942	1203	322	3,079	10	77	10	10					

(a) Excludes \$3,231 breach of agreement and forfeiture of tender deposits. (b) Includes \$23 sale of implements, credited to IVC. (c) Excludes \$3,291 breach of agreement. (d) Includes \$32 sale of implements, credited to IVC, and excludes \$141 sale of Forest Produce on termination of permit. (e) Excludes \$1,598 breach of agreement. (f) Includes \$26 sale of implements, credited to IVC, and excludes \$119 sale of unclaimed firewood. (g) Excludes \$22 sale of unclaimed timber. (h) Excludes \$1 sale of 16 ketties unclaimed jelutong.

NOTE.—In column 1  
 A = Cases taken into Court.  
 B = Cases dealt with departmentally.  
 C = Undetected cases.

Apparent errors in this form are due to the elimination of cents.

## WORKS OF REPRODUCTION AND IMPROVEMENT.

Reserve.	Kind of plantation or nature of work done.	Area in acres.					Receipts. \$	Charges.		Remarks.
		On 1-1-24.	Added during year.	Excluded.	Retreated.	On 31-12-24.		Creation. \$	Upkeep. \$	
1	2	3	4	5	6	7	8	9	10	11

## Perak—

## I.—REGULAR PLANTATIONS.

Matang ... ..	Mangrove ... ..	646	67	...	...	713	...	389	...	VIe
Kurau ... ..	" ... ..	5	...	...	...	5	...	...	...	
Assam Kumbang ...	Para rubber ... ..	31	...	...	31	31	420	...	96	VIg
Pondok Tanjong ...	Rotan ... ..	5	...	...	5	5	...	...	39	VIe
" ... ..	Kepayang ... ..	$\frac{1}{2}$	...	...	...	$\frac{1}{2}$	...	...	...	
" ... ..	Yemane (nursery) ... ..	...	...	...	...	...	...	82	...	VIe
	Total ... ..	$687\frac{1}{2}$	67	...	36	$754\frac{1}{2}$	420	472	135	
Selangor—										
Circular Road ...	Various species ... ..	13	...	...	13	13	...	...	546	VIII d
Weld Hill Reserve	Para rubber ... ..	6	...	...	...	6	...	...	...	
Sungai Buloh ...	Batai, yemane, chengal, and merbau	10	...	...	...	10	...	...	...	
Ulu Gombak ...	Yemane ... ..	$\frac{1}{2}$	$\frac{1}{2}$	...	...	1	...	26	...	VIe
Klang Mangrove ...	Mangrove ... ..	346	50	...	...	396	...	131	...	VIe
Kuang ... ..	Para rubber and cocoanuts ... ..	2	...	...	...	2	...	...	...	
Kapar ... ..	Malabera ... ..	2	1	...	...	3	...	23	...	VIe
	Total ... ..	$379\frac{1}{2}$	$51\frac{1}{2}$	...	13	431	...	180	546	
	Total F.M.S. ... ..	1,067	$118\frac{1}{2}$	...	49	$1,185\frac{1}{2}$	420	652	680	

## II.—CULTURAL OPERATIONS.

(Planting and sowing in shade in the forests.)

## Perak—

Pondok Tanjong ...	Chengal, merbau, kulim, and kemuning	537	...	...	...	537	...	...	...	
" ... ..	Rotan ... ..	203	...	...	...	203	...	...	...	
Parit ... ..	Broadcasting meranti ... ..	3	...	...	...	3	...	...	...	
Tanjong Toh Alang	Chengal ... ..	2	...	...	...	2	...	...	...	
Bikam ... ..	" ... ..	1,067	...	...	...	1,067	...	...	...	
" ... ..	Merbau ... ..	30	...	...	...	30	...	...	...	
Trolak ... ..	Taban ... ..	238	8	...	34	246	...	97	130	
" ... ..	" (nursery) ... ..	2	...	...	2	2	...	...	58	
Behrang ... ..	Taban ... ..	4	11	...	4	15	1,500	287	172	
	Total ... ..	2,086	19	...	40	2,105	1,500	385	360	VIe

## WORKS OF REPRODUCTION AND IMPROVEMENT—(cont.)

Reserve.	Kind of plantation or nature of work done.	Area in acres.					Receipts.	Charges.		Remarks.
		On 1-1-24.	Added during year.	Excluded.	Retreated.	On 31-12-24.		Creation.	Upkeep.	
							§			
1	2	3	4	5	6	7	8	9	10	11

## II.—CULTURAL OPERATIONS.—(cont.)

(Planting and sowing in shade in the forests.)—(cont.)

Selangor—											
Rantau Panjang ...	Taban ...	...	...	...	5	1,379 $\frac{1}{2}$	...	...	...	By subordinate staff	
Kanching ...	Camphor ...	...	...	...	...	34	...	...	...		
	Total ...	1,413 $\frac{1}{2}$	...	...	5	1,413 $\frac{1}{2}$	...	...	...		
Negri Sembilan—											
Senawang ...	Penak, merbau and taban ...	415 $\frac{1}{2}$	...	...	46	415 $\frac{1}{2}$	...	...	53	VIe	
Senaling-Inas ...	Penak, merbau, tembusu, penaga and gelam	228	...	...	...	228	...	...	...		
Serting ...	Penak, merbau, and tembusu ...	29	...	...	...	29	...	...	...		
Kepis ...	" " " " ...	263	...	...	...	263	...	...	...		
Pasir Panjang ...	Damar laut " " " " ...	86	...	...	...	86	...	...	...		
	Total ...	1,021 $\frac{1}{2}$	...	...	46	1,021 $\frac{1}{2}$	...	...	53		
Pahang—											
Bilut ...	Chengal and kulim ...	65	...	...	...	65	...	...	...		
Baloh ...	Chengal ...	47	...	...	...	47	...	...	...		
Bukit Goh ...	" " " " ...	7	...	...	...	7	...	...	...		
" " " " ...	Rotan sega ...	15	...	...	...	15	...	...	...		
Kuantan ...	Mangrove ...	$\frac{1}{4}$	...	...	...	$\frac{1}{4}$	...	...	...		
Pulau Lang ...	" " " " ...	2	...	...	...	2	...	...	...		
	Total ...	136 $\frac{1}{4}$	...	...	...	136 $\frac{1}{4}$	...	...	...		
	Total F.M.S. ...	4,657 $\frac{1}{4}$	19	...	91	4,676 $\frac{1}{4}$	1,500	385	413		

## WORKS OF REPRODUCTION AND IMPROVEMENT—(cont.)

Reserve.	Kind of plantation or nature of work done.	Area in acres.					Receipts. \$	Charges.		Remarks.
		On 1-1-24.	Added during year.	Excluded.	Retreated.	On 31-12-24.		Creation. \$	Upkeep. \$	
1	2	3	4	5	6	7	8	9	10	11
III.—WORKS OF IMPROVEMENT.										
Perak—										
Pondok Tanjong ...	Improvement fellings ...	2,612	...	...	...	2,612	...	...	...	...
Larut Hills ...	" " ...	70	...	...	70	70	...	...	183	...
Kurau ...	" " ...	...	15	...	...	15	...	61	...	...
Kledang Saiong ...	" " ...	...	50	...	...	50	...	107	...	...
" " ...	Cleaning ...	...	24	...	...	24	...	33	...	...
Parit ...	Improvement fellings ...	1,621	...	...	215	1,621	...	...	605	...
" " ...	Cleaning ...	...	276	...	...	276	...	1,758	...	...
Tanjong Toh Alang	Improvement fellings ...	245	...	...	...	245	...	...	...	...
Trolak ...	" " ...	4,861	...	...	598	4,861	...	...	1,995	...
Behrang ...	" " ...	2,191	...	...	792	2,191	...	...	3,072	...
Bikam ...	" " ...	2,728	...	...	...	2,728	...	...	...	...
Besout ...	" " ...	1,202	...	...	80	1,202	...	...	196	...
Chikus ...	" " ...	215	...	...	...	215	...	...	...	...
" " ...	Cleaning ...	...	178	...	...	178	...	596	...	...
	Total ...	15,745	543	...	1,755	16,288	...	2,555	6,051	VI f
Selangor—										
Rantau Panjang ...	Improvement fellings ...	3,000	...	...	...	3,000	...	...	...	...
" " ...	Cleanings ...	64	...	...	...	64	...	...	...	...
Kanching ...	Improvement fellings ...	1,180	...	...	...	1,180	...	...	...	...
Kuang ...	" " ...	1,534	...	...	...	1,534	...	...	...	...
Bangi ...	" " ...	2,214	...	...	205	2,214	...	...	458	...
" " ...	Cleanings ...	...	...	...	64	...	...	107*	...	...
Sungai Lalang ...	Improvement fellings ...	1,938	...	...	...	1,938	...	...	...	...
Bukit Tunggul ...	" " ...	1,794	...	...	...	1,794	...	...	...	...
Ayer Itam ...	Bertam cutting ...	924	...	...	...	924	...	...	...	...
Sungai Buloh ...	Improvement fellings ...	2,353	...	...	...	2,353	...	...	...	...
" " ...	Cleanings ...	...	...	...	392	...	...	743*	...	...
Ulu Gombak ...	Bertam cutting ...	809	...	...	...	809	...	...	...	...
Weld's Hill ...	General upkeep ...	39	...	...	39	39	...	...	730	...
Bukit Puteh ...	Improvement fellings ...	16	...	...	...	16	...	...	...	...
Bukit Cheraka ...	" " ...	1,443	...	...	...	1,443	...	...	...	...
Klang Mangrove ...	Breaking canal banks ...	...	...	...	...	...	...	84	...	...
	Total ...	17,308	...	...	700	17,308	...	934	1,188	VI f

\* Items marked are for new works in areas included under improvement fellings.

## WORKS OF REPRODUCTION AND IMPROVEMENT—(cont.)

Reserve.	Kind of plantation or nature of work done.	Area in acres.					Receipts. \$	Charges.		Remarks.
		On 1-1-24.	Added during year.	Excluded.	Retreated.	On 31-12-24.		Creation. \$	Upkeep. \$	
1	2	3	4	5	6	7	8	9	10	11
III.—WORKS OF IMPROVEMENT.—(cont.)										
Negri Sembilan—										
Senawang ...	Improvement clearings ...	1,737 $\frac{1}{2}$	...	...	60	1,737 $\frac{1}{2}$	...	...	225	
Labu ...	" " ...	45	...	...	...	45	...	...	...	
Kepis ...	" " and fellings	1,180	...	...	...	1,180	...	...	...	
Gemas ...	" " ...	135 $\frac{3}{4}$	...	...	...	135 $\frac{3}{4}$	...	...	...	
Sendayan ...	" " and fellings	990 $\frac{3}{4}$	...	...	...	990 $\frac{3}{4}$	...	...	...	
Senaling-Inas ...	" " "	1,655	...	...	187	1,655	...	...	636	
Serting ...	" " "	1,169	...	...	190	1,169	...	...	517	
Pasoh ...	" " "	1,674	...	...	182	1,674	...	...	481	
Bahau ...	" " ...	9 $\frac{1}{2}$	...	...	...	9 $\frac{1}{2}$	...	...	...	
Pasir Panjang ...	" " ...	57	...	...	...	57	...	...	...	
P. Dickson (1st mile)	" " ...	10	...	...	...	10	...	...	...	
Triang ...	" " and fellings	23	...	...	...	23	...	...	...	
	Total ...	8,686 $\frac{1}{2}$	...	...	619	8,686 $\frac{1}{2}$	...	...	1,860	VI $f$
Pahang—										
Benchah ...	Improvement fellings in favour of taban ...	1,756	...	...	550	1,756	...	...	1,074	
Ulu Dong ...	" " " ...	2,079	...	...	...	2,079	...	...	...	
Putat ...	" " " ...	2,008	...	...	400	2,008	...	...	968	
Mangsok ...	" " " ...	671	...	...	...	671	...	...	...	
Jahit ...	" " " ...	768	...	...	...	768	...	...	...	
Rotan Tunggal ...	Improvement fellings in favour of Class I trees ...	1,115	...	...	...	1,115	...	...	...	
Bilut ...	" " " ...	1,275	...	...	...	1,275	...	...	...	
Menchali ...	Improvement fellings ...	769	...	...	...	769	...	...	...	
Lesong ...	" " ...	960	...	...	...	960	...	...	...	
Perah ...	" " ...	503	...	...	...	503	...	...	...	
Mentas ...	Bertam cutting ...	200	...	...	...	200	...	...	...	
Bukit Goh ...	Improvement fellings ...	1,421	...	...	40	1,421	...	...	...	By subordinates
Baloh ...	" " ...	1,067	...	...	...	1,067	...	...	...	
	Total ...	14,592	...	...	990	14,592	...	...	2,042	VI $f$
	Total F.M.S. ...	56,331 $\frac{1}{2}$	543	...	4,064	56,874 $\frac{1}{2}$	...	3,489	11,141	
SUMMARY.										
All States ...	Regular plantations ...	1,067	118 $\frac{1}{2}$	...	49	1,185 $\frac{1}{2}$	420	652	680	
	Cultural operations ...	4,657 $\frac{1}{4}$	19	...	91	4,676 $\frac{1}{4}$	1,500	385	413	
	Works of improvement ...	56,331 $\frac{1}{2}$	543	...	4,064	56,874 $\frac{1}{2}$	...	3,489	11,141	
	GRAND TOTAL ...	62,055 $\frac{3}{4}$	680 $\frac{1}{2}$	...	4,204	62,736 $\frac{1}{4}$	1,920	4,526	12,235	

Form VIII.  
**OUTPUT OF TIMBER AND FUEL FOR 1924.**

State and District.	By Government and Purchasers.								By Free Grantees.					Grand Total.
	Class IA.	Class IB.	Class IC.	Class II.	Poles.	Fuel.	Charcoal.	Total.	Timber.	Poles.	Fuel.	Charcoal.	Total.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
RESERVED FORESTS.														
Perak (North) ... ..	5	...	413	5	1,575	157,444	...	159,443	24	63	486	...	573	160,016
Perak (South) ... ..	529	50	445	145	3,879	28,470	110	33,628	...	...	...	...	...	33,628
Selangor ... ..	36	266	727	236	5,242	114,385	1,017	121,910	...	...	...	...	...	121,910
Negri Sembilan ... ..	108	...	7	3	389	5,910	...	6,417	...	...	...	...	...	6,417
Pahang (West) ... ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pahang (East) ... ..	7	46	78	...	...	596	...	727	...	...	...	...	...	727
Total 1924 ... ..	686	362	1,670	389	11,085	306,805	1,128	322,125	24	63	486	...	573	322,698
" 1923 ... ..	521	170	2,109	395	9,359	270,150	5	282,710	6	71	300	...	377	283,087
" 1922 ... ..	285	153	485	124	7,242	232,637	...	240,926	...	160	183	...	343	241,269
" 1921 ... ..	646	1,630	650	178	11,832	262,933	...	277,869	34	430	210	...	674	278,544
" 1920 ... ..	1,009	5,657	886	396	15,877	337,765	...	361,590	51	3,786	342	...	4,179	365,769
" 1919 ... ..	640	3,393	991	278	13,950	345,548	...	364,800	...	236	...	...	236	365,036
" 1918 ... ..	488	282	1,223	97	10,068	285,787	2	297,947	71	408	223	...	702	298,649
" 1917 ... ..	144	103	1,710	124	11,253	188,958	5	202,397	303	522	10	...	835	203,132
" 1916 ... ..	105	57	39	20	7,657	149,252	...	157,130	124	888	...	...	1,012	158,142
" 1915 ... ..	166	146	257	53	9,165	114,243	...	124,030	...	...	...	...	278	124,308
UNRESERVED FORESTS.														
Perak (North) ... ..	6,636	2,501	10,315	338	21,750	47,261	5,754	94,556	664	...	22,239	...	22,903	117,459
Perak (South) ... ..	4,435	2,437	19,218	878	23,487	197,786	7,272	255,513	15	...	...	...	15	255,528
Selangor ... ..	1,511	290	7,650	59	5,642	23,942	8,669	47,762	745	223	928	...	1,896	49,659
Negri Sembilan ... ..	6,371	1,523	4,022	73	1,357	18,832	741	32,919	...	...	62,415	...	62,415	95,334
Pahang (West) ... ..	12,498	32	2,095	2	1,252	6,991	441	23,310	...	...	...	...	...	23,310
Pahang (East) ... ..	1,396	5,432	1,197	23	647	4,244	287	13,226	...	...	...	...	...	13,226
Total 1924 ... ..	32,846	12,216	44,497	1,372	54,135	299,057	23,164	467,287	1,424	223	85,582	...	87,229	554,517
" 1923 ... ..	20,802	11,851	35,772	1,605	28,311	252,015	17,535	367,891	473	85	60,169	...	60,727	428,618
" 1922 ... ..	21,540	12,827	37,028	1,444	26,348	264,696	17,729	381,613	291	99	103,954	...	104,343	485,956
" 1921 ... ..	45,252	20,467	45,340	1,846	30,650	288,722	16,587	448,865	1,504	2,916	72,031	...	76,451	525,315
" 1920 ... ..	30,547	19,178	66,640	2,983	45,744	414,816	20,353	600,261	1,537	3,638	37,347	...	42,522	642,783
" 1919 ... ..	30,392	20,342	50,393	3,615	48,911	417,359	20,148	591,161	1,294	5,103	31,293	...	37,690	628,850
" 1918 ... ..	30,773	15,700	57,387	4,278	60,676	430,193	18,026	617,033	7,028	5,663	39,953	...	52,644	669,677
" 1917 ... ..	28,843	10,315	57,108	3,447	42,420	350,062	19,048	511,243	6,687	3,813	46,178	...	56,678	567,921
" 1916 ... ..	21,470	10,944	51,880	2,972	38,240	498,718	16,327	640,551	7,846	11,276	124,200	235	143,557	784,108
" 1915 ... ..	10,403	19,227	41,659	3,636	41,184	409,409	13,586	539,104	...	...	...	...	132,178	671,282
TOTAL FOR RESERVED AND UNRESERVED FORESTS.														
1924 ... ..	33,532	12,577	46,167	1,762	65,220	605,862	24,292	789,412	1,448	286	86,068	...	87,802	877,215
1923 ... ..	21,324	12,022	37,881	2,000	37,670	522,165	17,540	650,601	479	156	60,469	...	61,104	711,705
1922 ... ..	21,825	12,980	37,514	1,568	33,590	497,333	17,729	622,539	291	259	104,137	...	104,686	727,225
1921 ... ..	45,898	22,097	45,990	2,024	42,482	551,655	16,587	726,734	1,538	3,346	72,241	...	77,125	803,859
1920 ... ..	31,556	24,835	67,526	3,379	61,621	752,581	20,353	961,851	1,588	7,424	37,689	...	46,701	1,008,552
1919 ... ..	31,032	23,735	51,384	3,893	62,861	762,907	20,148	955,960	1,294	5,339	31,293	...	37,926	993,886
1918 ... ..	31,261	15,982	58,610	4,375	70,744	715,980	18,028	914,980	7,099	6,071	40,176	...	53,346	968,326
1917 ... ..	28,987	10,418	58,818	3,571	53,673	539,020	19,053	713,540	6,990	4,335	46,188	...	57,513	771,053
1916 ... ..	21,575	11,001	51,919	2,992	45,897	647,970	16,327	797,681	7,970	12,164	124,200	235	144,569	942,250
1915 ... ..	10,569	19,373	41,916	3,689	50,349	523,652	13,586	663,134	...	...	...	...	132,456	795,590

NOTE.—Apparent discrepancies in this form are due to the elimination of fractions.

## Form IX.

## OUTTURN OF MINOR FOREST PRODUCE, 1924.

Description of produce.	Perak (North).		Perak (South).		Selangor.		Negri Sembilan.		Pahang (West).		Pahang (East).		Total.	
	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.
		\$		\$		\$		\$		\$		\$		\$
RESERVED FORESTS.														
Rotans ... ..	...	1,710	...	1,085	...	535	...	680	...	832	...	2,249	...	7,090
Bamboos ... ..	...	2	...	144	...	454	...	...	...	...	...	40	...	640
Wood-oil ... (gallons)	...	...	...	...	...	...	1,556	...	135	...	...	...	1,556	135
Damar penak and mata kuching (pikuls)	120.84	2,908	33.28	598	...	...	750.84	91,805 <sup>b</sup>	40.07	445	16.43	204	961.47	95,960
Damar batu and others (pikuls)	...	...	...	...	10.94	20	3,446.19	1,977	...	...	...	...	3,457.13	1,997
Damar torches (number)	...	...	...	...	...	...	7,800	30	...	...	...	...	7,800	30
Nipah ... ..	...	...	...	...	...	231	...	...	...	...	...	36	...	267
Getah taban merah (tapped) (pikuls)	...	119	24.89	<sup>a</sup>	3.76	721	...	476	2.19	305	...	...	30.84	1,621
Getah taban merah (from the leaves) (pikuls)	...	...	...	...	...	...	...	...	...	...	14.56	291	14.56	291
Getah percha (seeds)	22,250	222	...	...	...	...	...	...	...	...	...	...	22,250	222
Getah jelutong (pikuls)	...	...	...	...	310.82	847	...	...	330.88	692	.69	11	642.39	1,550
Getah puteh and other inferior guttas (pikuls)	2.03	80	...	...	...	...	...	...	...	...	...	...	2.03	80
Para rubber ... (lbs.)	3,020	420	...	...	...	...	...	...	...	...	...	...	3,020	420
Miscellaneous ... ..	...	629	...	257	...	4,594	...	...	...	...	...	...	...	5,481
Total ...	...	6,091	...	2,084	...	7,402	...	95,103	...	2,274	...	2,831	...	115,785

*a.*—Excludes \$850.50 paid by Selborne Plantation Company Ltd., and \$1,500, sale of taban seedlings.

*b.*—From sale of damar worked by Departmental Agency in Reserved and Unreserved Forests.

NOTE.—Apparent errors in this form are due to the elimination of fractions.

Form IX—(cont.).

OUTTURN OF MINOR FOREST PRODUCE, 1924—(cont.).

Description of produce.	Perak (North).		Perak (South).		Selangor.		Negri Sembilan.		Pahang (West).		Pahang (East).		Total.	
	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.	Quantity.	Revenue.
		\$		\$		\$		\$		\$		\$		\$
UNRESERVED FORESTS.														
Rotans ... ..	...	1,931	...	6,806	...	2,336	...	2,188	...	7,388	...	9,545	...	30,195
Bamboos ... ..	...	274	...	1,614	...	1,566	...	30	...	425	...	285	...	4,195
Wood-oil (gallons)	...	...	...	...	...	...	8,302	507	4,755	194	9,876	451	22,933	1,152
Damar penak and mata kuching (pikuls)	5.66	20	...	...	1.19	6	958.81	120	376.07	10,147	8.43	42	1,350.17	10,335
Damar batu and others (pikuls)	8.80	4	18.88	9	6,878.45	3,442	3,529.31	1,953	96.63	218	398.45	162	10,930.52	5,788
Damar torches (number)	...	...	...	...	...	...	16,962	97	29,000	72	92,441	197	138,403	366
Nipah ... ..	...	14	...	1,266	...	30	...	35	...	...	...	2,303	...	3,648
Getah taban merah (tapped) (pikuls)	1.15	377	2.15	804	9.06	...	...	...	28.19	8,140	...	...	40.54	9,322
Getah taban merah (from the leaves) (pikuls)	...	...	...	...	...	...	...	...	7.79	187	62.05	1,518	69.84	1,705
Taban merah leaves (pikuls)	...	...	...	...	...	...	...	...	58.69	29	...	...	58.69	29
Getah jelutong (pikuls)	11.91	12	281.26	459	1,152	1,178	563.73	713	2,686.82	2,646	559.15	559	5,254.87	5,567
Getah puteh and other inferior guttas (pikuls)	.11	28	17.14	339 <sup>c</sup>	...	...	...	...	...	...	...	...	17.25	368
Miscellaneous ... ..	...	841	...	2,019	...	485	...	887	...	433	...	2,276	...	6,941
Unreserved Forests Total	...	3,503	...	13,318	...	9,042	...	6,531	...	29,879	...	17,338	...	79,611
Reserved ,, ,,	...	6,091	...	2,084	...	7,402	...	95,103	...	2,274	...	2,831	...	115,785
Grand Total ...	...	9,593	...	15,402	...	16,444	...	101,634	...	32,154	...	20,169	...	195,396

c.—Includes \$66.16 sale of inferior guttas credited to II (d).

NOTE.—Apparent errors in this form are due to the elimination of fractions.

## Form X.

## STATEMENT OF REVENUE, 1924.

Revenue detailed.	Conservator.	Perak (North).	Perak (South).	Selangor.	N. Sembilan.	Pahang (West).	Pahang (East).	Total.		Difference.	
								Estimated.	Actual.	+	-
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>I.—FOREST PRODUCE REMOVED FROM THE FORESTS BY DEPARTMENTAL AGENCY—</b>											
<i>(e) Gutta-percha</i>											
Estimated	...	1,000	7,500	3,300	1,000	5,000	...	17,800	...	...	...
Actual	...	827	1,078	721	476	8,445	...	...	11,547	...	6,253
<i>(f) Damar</i>											
Estimated	...	50,000	50,000	50,000	60,000	12,000	...	222,000	...	...	...
Actual	...	2,908	598	...	91,805	10,765	204	...	106,280	...	115,720
<b>II.—FOREST PRODUCE REMOVED FROM THE FOREST BY CONSUMERS OR PURCHASERS—</b>											
<i>(a) Timber</i>											
Estimated	...	100,000	130,000	45,000	60,000	40,000	30,000	405,000	...	...	...
Actual	...	124,897	161,705	70,092	87,347	134,482	29,942	...	608,466	203,466	...
<i>(b) Firewood and charcoal</i>											
Estimated	...	250,000	200,000	100,000	12,000	10,000	3,000	575,000	...	...	...
Actual	...	249,461	247,911	146,962	16,822	8,159	4,028	...	673,342	98,342	...
<i>(c) Canes</i>											
Estimated	...	4,000	5,000	2,000	3,000	5,000	4,000	23,000	...	...	...
Actual	...	3,641	7,891	2,871	2,868	8,220	11,794	...	37,285	14,285	...
<i>(d) Rubber</i>											
Estimated	...	1,000	1,000	...	50	2,500	...	4,550	...	...	...
Actual	...	432	526	2,024	713	3,337	571	...	7,603	3,053	...
<i>(e) Gutta-percha</i>											
Estimated	...	500	4,000	...	...	3,000	3,000	10,500	...	...	...
Actual	...	...	2,350	...	...	216	1,809	...	4,376	...	6,124
<i>(f) Damar</i>											
Estimated	...	100	100	250	500	...	1,000	1,950	...	...	...
Actual	...	25	9	3,468	4,050	45	204	...	7,802	5,852	...
<i>(g) Other produce</i>											
Estimated	...	1,000	4,500	5,500	1,500	700	4,000	17,200	...	...	...
Actual	...	1,761	5,301	7,359	1,721	1,125	5,587	...	22,854	5,654	...

Apparent errors in this form are due to the elimination of cents.

Form X—(cont.)

STATEMENT OF REVENUE, 1924.—(cont.)

Revenue detailed.	Conservator.	Perak (North).	Perak (South).	Selangor.	N. Sembilan.	Pahang (West).	Pahang (East).	Total.		Difference.	
								Estimated.	Actual.	+	-
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
III.—DRIFT, WAIF, SEIZED AND CONFISCATED FOREST PRODUCE—											
Estimated ...	...	1,000	2,000	500	250	100	200	4,050	...	...	...
Actual ...	...	723	1,750	311	353	17	127	...	3,282	...	768
IV.—MISCELLANEOUS—											
(a) Compensation and fines Estimated ...	...	2,000	2,000	3,600	509	300	200	8,600	...	...	...
Actual ...	...	4,037	6,262	3,957	678	646	411	...	15,991	7,391	...
(b) Reimbursements											
Estimated ...	...	50	50	100	100	100	50	450	...	...	...
Actual ...	141	151	...	...	155	1	...	...	448	...	2
(c) Other sources											
Estimated ...	500	1,000	100	850	100	100	50	2,700	...	...	...
Actual ...	1,238	330	739	1,183	967	44	124	...	4,626	1,926	...
(d) Sale of Timber											
Estimated ...	47,000	...	...	...	...	...	...	47,000	...	...	...
Actual ...	...	...	...	...	...	...	...	...	...	...	47,000
Total Estimated ...	47,500	411,650	406,250	211,100	139,000	78,800	45,500	1,339,800	...	...	...
„ Receipts ...	1,379	389,193	436,120	238,949	207,958	175,502	54,800	...	1,503,901	339,968	175,867
Difference { + ...	...	...	29,870	27,849	68,958	96,702	9,300	...	...	164,101	...
- ...	46,121	22,457	...	...	...	...	...	...	...	...	...

Apparent errors in this form are due to the elimination of cents.

## STATEMENT OF EXPENDITURE.

	Conservator.	Perak (North).	Perak (South).	Selangor.	N. Sembilan.	Pahang (West).	Pahang (East).	Total.
	\$	\$	\$	\$	\$	\$	\$	\$
OTHER CHARGES, ANNUALLY RECURRENT.								
I. FOREST PRODUCE REMOVED FROM THE FORESTS BY DEPARTMENTAL AGENCY—								
(e) Gutta-percha ... ..	...	326	3,388	1,261	...	4,996	...	9,970
(f) Damar ... ..	...	6,038	1,236	94	47,461	4,635	634	60,097
II. FOREST PRODUCE REMOVED FROM THE FORESTS BY CONSUMERS AND PURCHASERS ... ..								
	...	629	800	72	...	...	...	1,502
III. DRIFT, WAIF, SEIZED AND CONFISCATED FOREST PRODUCE ... ..								
	...	...	...	...	4	...	45	49
IV. STORES—								
(a) Bicycles ... ..	92	471	598	465	800	293	186	2,904
(b) Boats and launches ... ..	...	1,426	481	730	345	347	151	3,479
(d) Tools and plaut ... ..	99	51	177	1	...	94	69	490
(e) Survey, mathematical, and other instruments ... ..	...	30	...	21	...	...	...	52
(f) Books, maps, and other publications ... ..	2,324	400	329	124	179	126	108	3,589
(g) Furniture ... ..	24	114	68	55	20	73	46	401
(h) Uniforms ... ..	28	1,913	2,722	2,528	2,460	2,084	902	12,638
(i) Miscellaneous ... ..	591	163	121	281	66	83	17	1,322
V. COMMUNICATIONS AND BUILDINGS—								
(a) Roads and bridges ... ..	...	391	523	851	457	234	132	2,588
(b) Buildings ... ..	...	1,736	3,330	1,394	4	1,618	966	9,049
(c) Other works ... ..	...	232	431	288	301	349	93	1,694
VI. ORGANIZATION, IMPROVEMENT, AND EXTENSION OF FORESTS—								
(a) Demarcation ... ..	...	1,670	2,363	1,861	1,530	1,735	886	10,045
(b) Surveys ... ..	...	...	9,983	76	...	...	...	10,059
(e) Cultural operations ... ..	...	515	745	180	53	...	...	1,493
(f) Works of improvement ... ..	...	383	10,073	2,122	1,860	2,042	...	16,480
(g) Other works ... ..	...	96	1,849	50	...	...	65	2,058
VII. ALLOWANCES—								
(a) Personal ... ..	...	176	132	680	...	187	48	1,224
(b) Travelling ... ..	5,057	10,118	12,952	11,174	8,641	10,542	5,497	63,981
(c) Bicycles ... ..	...	1,210	1,441	280	1,360	1,194	...	5,485
VIII. MISCELLANEOUS—								
(a) Research and collection of specimens ... ..	2,703	217	181	143	179	67	97	3,587
(b) Rewards ... ..	...	15	...	25	...	...	25	65
(c) Refunds ... ..	125	302	83	...	37	...	...	547
(d) Other charges ... ..	1,001	812	791	680	1,375	319	232	5,210
Total Other Charges, Annually Recurrent ... ..	12,043	29,436	54,795	25,437	67,132	31,017	10,199	230,058

Form X—(cont.)

STATEMENT OF EXPENDITURE—(cont.)

	Conservator.	Perak (North).	Perak (South).	Selangor.	N. Sembilan.	Pahang (West).	Pahang (East).	Total.
SPECIAL EXPENDITURE.	\$	\$	\$	\$	\$	\$	\$	\$
IV. STORES—								
(a) Bicycles ... ..	...	711	284	142	...	...	...	1,137
(b) Boats and launches ... ..	...	623	...	610	...	185	537	1,955
(e) Survey, mathematical, and other instruments ... ..	380	...	...	...	...	...	...	380
(g) Furniture ... ..	1,480	13	...	68	...	162	299	2,023
(i) Miscellaneous ... ..	446	560	494	232	...	...	...	1,732
V. COMMUNICATIONS AND BUILDINGS—								
(a) Roads and bridges ... ..	...	...	...	499	...	...	...	499
(b) Buildings ... ..	...	...	518	...	...	1,325	1,400	3,243
Drainage assessment ... ..	...	...	...	2,295	...	...	...	2,295
TOTAL SPECIAL EXPENDITURE ...	2,306	1,906	1,296	3,847	...	1,672	2,237	13,264
GRAND TOTAL ...	14,349	31,342	56,091	29,284	67,132	32,689	12,435	243,322

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