Report on Forests of Malacca. 1889—
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*Annual Report on Forests of
Alaska for year 1889*

(pages 15/16 missing)

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Annual Report on the Forests of Malacca for the year 1889.

Bukit Sabuk Experimental Garden.

1. The garden has been maintained in good order throughout the year, and much propagating and preparing trees for roadside and general planting has been done.

2. Altogether 12 000 young trees - consisting of 30 kinds - have been prepared for planting and distribution.

The principal kinds are:-

Sembur,	<i>Fagraea peregrina</i> ,	4460
Sina,	<i>Pterocarpus indicus</i>	2500
Meribau,	<i>Azelia palembanica</i>	1000
Bentangor,	^{Cal} Chlorophyllum <i>inophyllum</i> ,	460
Chempadak,	<i>Artocarpus Chempadak</i> ,	300
Pulai,	<i>Alstonia scholaris</i> ,	230
Malogany,	<i>Swietenia macrophylla</i> ,	700
Kempas,	<i>Humphria malaccensis</i> ,	120
Bentangor bunut,	^{Cal} Chlorophyllum <i>sp.</i> ,	050
Rotan Manau,	<i>Calamus sp.</i> ,	300
Miscellaneous,		1780

3. Fruit trees and other economic have also been propagated largely, but the failure of the fruit crop during the year has prevented so large a stock being prepared

prepared as might be considered necessary

4. A collection of ornamental and flowering shrubs has been maintained for supplying government buildings and distribution.

5. Besides the work specified the nursery staff have been employed in clearing and preparing new ground for planting as much as possible.

6. The ground adjoining the lake has been planted temporarily with annatto, assam tea, and Patchouli.

7. About two-thirds of an acre has been cleared and holes dug for planting Liberian coffee. 203 plants have been planted, and a stock prepared ready for the next rainy season.

8. Altogether two acres have been cleared and holes dug for the reception of timber and other trees.

9. It is intended to plant up ~~the~~ poor soils of the garden with timber trees, nibung, and bamboos.

10. The following notes are made on ~~economic~~ plants which are growing in the garden.

11. Mahogany, (*Swietenia mahoganii*), has proved a failure, but another species

(*S. macrophylla*), a valuable timber, and apparently a more robust tree, has grown vigorously.

Seeds were received from Calcutta Botanic gardens in March, and most of the seedlings are now two feet high.

12. Camphor, (*Cinnamomum Camphora*)

A small stock has been raised from seeds received from the Hong Kong botanic gardens in February.

The seedlings have grown very rapidly.

13. Crab-oil tree, (*Carapa guyanensis*)

Three plants were received from Singapore at the commencement of the year and are growing well.

A useful oil is extracted from the seeds, and the wood is highly valued for cabinet work, it takes a good polish, and is almost equal to mahogany.

14. Cloves (*Eugenia caryophyllata*)

Grow vigorously. Most of the seedlings planted eighteen months ago are now five feet high, and are exceedingly healthy.

Two young trees that were in the garden at the time of its transfer are now fruiting.

15. Cloves require no special cultivation, and might be grown profitably in the Settlement.

16. Nutmegs (*Myristica fragrans*)
 a large stock of seedlings has been raised
 from seeds purchased in the Settlement.
 Nutmegs fruit well in Malacca on the
 poorest soils if manured liberally.
17. Maltese lemons, (*Citrus medica*, var.)
 are growing well, two trees have fruited.
 The fruits were very fine.
18. Liberian Coffee, a stock has been
 prepared for planting and distribution.
 Liberian coffee grows well in the Settlement
 with ordinary treatment.
19. Asam Tea (hybrid), *Thea chinensis*-
 var. *asiatica*, seeds were received from
 Singapore in October 1888, many of the
 seedlings are now two feet high, and have
 been planted for experiment.
20. Castor oil (*Ricinus communis*)
 seeds were received from the Botanic Gardens,
 Calcutta, the plants have grown well, and
 fruited freely, and a stock are now being
 raised for more extensive planting.
 Castor oil requires a light soil.
21. Cotton (*Gossypium arboreum*)
 seeds were received from Szeang Yung.
 The seedlings are not very strong, but this may
 be due to the dry season.
22. Mauritius hemp (*Furcraea gigantea*,

Planted on the stiff clayey soil in the garden Mauritius hemp grows well, but slowly. It would appear to take about five years to become full grown.

23. Patchouly (*Pogostemon patchouli*)
Grows as readily as a weed, but the demand for the oil is too limited to recommend the plant to be cultivated.

24. Karma suru (*Euphorbia pilulifera*)
Some plants received from Singapore have grown well, and the plant has since been found wild near Bukit Beruang in a thriving condition.

25. Annatto (*Bixa orellana*) Has been planted extensively in the garden and is growing freely. Although of South American origin annatto is now naturalized in the Settlement.

Some experiments will be made during the ensuing year in preparing the seeds for export.

26. Tapioca (*Jatropha manihot*)
Six varieties were received from Singapore about fifteen months ago, and are being propagated as largely as possible. All are growing well, but it is too early to form an opinion as to their utility.

27. Black Pepper (*Piper nigrum*)

A stock are being prepared for planting in the garden. Pepper grows well in the settlement trained on posts.

28. Some cuttings of dadap (*Euphorbia-umbrosa*) planted in the garden for the pepper vine to grow on were all destroyed by white ants, although dadap trees grow successfully in Malacca.

Roads and Drives

29. The main drive through the garden has been maintained in good order by the garden staff.

30. A drive round the extent of the garden is in contemplation, and can be opened by the garden staff when a dam has been erected across the lake.

31. A cutting of some feet which would be necessary is now being done by the P.W.D. to supply material for the roads in the neighbourhood.

32. The entrances to the garden from the Bukit Bruang and Batu Berendam roads have been much improved by the erection of pillars.

Formation.

33. Nothing has been done to the lake during the year, but it is hoped a vote

will be sanctioned next year, as the formation of the garden cannot proceed until the completion of this work, and the want of a proper water supply has been felt.

Forest Reserves.

34 Several applications have been received from intelligent and leading Malays during the year, for employment as forest watchmen, and the work has become popular, but much difficulty still exists in keeping the men from frequently absenting themselves from their stations, owing to their quarters not being large enough to ~~accommodate~~ ^{accommodate} their families, and in one instance two men were dismissed.

35 Sanction has been given to enlarge the quarters at three stations during the ensuing year, and it is important for the proper supervision of all the reserves, that the remaining stations are enlarged at an early date.

36 Two cases of illicit wood-cutting have occurred during the year, in one instance a fine of \$10⁰⁰ was inflicted, and the other was settled by the defendant paying \$4⁰⁰ the value of the wood, which had

had been taken by mistake.

37. A fire broke out in the early part of the year on some waste land at Singgiadang, but no damage was done.

Bukit Bruang Reserve.

38. Since the commencement of the year the boundaries of the reserve have been recleared, and the swampy places made passable, by the watchmen in charge, and are now in good order.

39. A path from the foot of the hill over the highest spur has also been opened by the watchmen.

40. In November planting on a small scale was commenced on some waste land shown on plan a.

41. Altogether 1099 trees were planted as follows:-

Merebau,	<i>Apzelia palembanica</i> ,	373
Bentangor,	<i>Chrysophyllum inophyllum</i> ,	318
Chempadak,	<i>Artocarpus Chempadak</i> ,	107
Bentangor bunut,	<i>Chrysophyllum</i> sp,	63
Pulai,	<i>Aletonia scholaris</i> ,	147
Kempas,	<i>Rumfussia malaccensis</i> ,	64
Kayu Malaka,	<i>Phyllanthus emblica</i> ,	27

42. A commencement has also been made on the swamp adjoining for planting sago, an area of three acres has been

has been cleared, and the soil thrown into ridges - as the swamp is deep at this point, and the root cuttings of sagos have been planted.

43. The total cost of these operations was \$157²⁵.

Sungei Udang Reserve.

44. A band of six coolies ^{have} ~~been~~ assisted the watchmen for seven months reclearing the boundaries which had become overgrown, and opening inspection paths. Boundaries extending fifteen miles have been put in order, and inspection paths amounting to six miles, have been opened, at a total cost of \$199⁵⁰.

45. The central compartment of the reserve has now been marked into blocks by means of inspection paths, as shown on plan b. About a mile remains to be opened to complete the work, and it will be seen on the plan, that as the remaining compartments of the reserve are chiefly young forest, no further demarcation need be considered urgent.

Merlimau Reserve.

46. The western boundary (plan c) two miles long, has been opened during the year, and an inspection path two miles long has

has also been opened.

47. The southern boundary running westwards, which is about two miles long and entirely swamp, has been made passable.

48. In these operations the watchmen were assisted by a band of coolies for two months, at a total cost of \$105 ⁹⁵/₁₀₀.

49. The boundaries west of the Char chain road are now in good order. Those of the eastern compartment, in the direction of the river, are swampy, and still require to be made passable. This will be attended to as early as possible.

50. The demarcation of the western compartment into blocks, so that a valuation survey can be made as well as for practical working, will be continued during the ensuing year.

Ayer Pomas Reserve.

51. The boundaries of the new reserve have been maintained by the watchmen. An inspection path (plan d), was commenced by a band of coolies in December, and about three-quarters of a mile opened at a cost of \$26 ⁷⁵/₁₀₀.

52. The demarcation of the new reserve into blocks by means of inspection paths will

will form part of the first operations for the year 1890.

Bukit Panchor Reserve.

53. The maintenance of boundaries in this district is particularly heavy, owing to the extent of lalang and swamp.

54. Towards the latter end of October a band of coolies were engaged until the close of the year, to assist the watchmen in getting the boundaries in good order.

55. The whole of the boundaries - about eleven miles - have been recleared or made passable by felling trees to walk on, and are now in good order.

The total cost of this work was \$125.00.

56. It is not considered urgent to demarcate the reserve into blocks except the compartment north of the Machap road (plan c).

57. Some timber has been supplied for building government quarters in the district from this compartment, which is well wooded with a rich young forest.

Brissu Reserve.

58. The demarcation of private rights and of an extension of the reserve have been the principal operations in this district.

59. The private rights within in the reserve have been demarcated by the watchmen, and a small band of coolies, and boundaries extending six miles have been opened.

60. An addition to the reserve by 1000 acres has also been demarcated.

This area is situated between the Brissu and Jungi Siput main road, and the frontier - between Bukit Jelutong and Bukit Putus - as shown on plan f.

61. The total cost of both works was ~~£258~~ ⁵².

62. The extension is well wooded and includes some large timber, especially near the frontier. ^{Ceraya} ~~Seraya~~ and Meranti are the most abundant.

63. Owing to the area which has been excluded by demarcating private rights, it is possible the extension has not increased the area of the reserve.

Jus District.

64. The forests lands in this district have been divided into three reserves viz:- Bukit Sadanan, Bukit Batu Liga, and Batang Malaka.

65. During the year the demarcation of Bukit Sadanan reserve has been completed, and Bukit Batu Liga reserve commenced.

Bukit Sadanan Reserve.

66. This reserve is situated between the districts of Machap, Telung, Batang-Malaka, and Selandar, and comprises about 9000 acres. (Plan 3)

67. The land is undulating, and (Bukit Sadanan) reaches an elevation of 1094 feet. It is well watered with several small streams, the soil is fertile, and for the most part the reserve is exceedingly well wooded, and includes a fair abundance of rotans.

68. On the western side the reserve is demarcated by the Machap-Telung road, and on the eastern side by the Batang-Malaka-Selandar road.

The north and south boundaries - a distance of eight miles - have been demarcated by the forest watchmen, and a band of cordis, for the small cost of \$185- $\frac{25}{100}$.

69. The most notable kinds of timber are :-

Seraya,	<i>Hopea cernua</i> ,	abundant
Seraya		
Gombang,	<i>Dipterocarpus crinitus</i> ,	do
Meranti,	<i>Hopea meranti</i> ,	do
Kilat merah,	<i>Eugenia gelanica</i> -var.,	do
Kayu minyak,	<i>Dipterocarpus laevis</i> ,	fairly do
Sembun,	<i>Fagraea peregrina</i> ,	do do
Kambang sa-mangko,		do do

Jelutong,	<i>Ayera costulata</i> ,	fairly abundant
Berombong,		do do
Puaga,		do do
Kempas,	<i>Kumpusia malaccensis</i> ,	do do
Rambai dam,	<i>Shorea acuminata</i> ,	do do
Miriaban,	<i>Azalia palumbanica</i> ,	^{rare} do do
Pisak,	<i>Vatica nasuta</i> ,	do
Petalang,	<i>Strombosia javanica</i> ,	do
Krang,	<i>Sialum indium</i> ,	do
Bilian wangi,		do

Bukit Batu Tiga Reserve.

70. Towards the close of the year the Batu Tiga reserve was commenced, and a line four miles long opened, at a cost of \$88 ¹⁰/₁₀₀.

71. When completed it is estimated that this reserve will contain about 6000 acres.

72. It will not be possible to place watchmen in charge of the reserve until accommodation can be provided, but it is intended to complete the demarcation, as well as of the Batang-Malaka reserve, during the year 1890, and if quarters can be built at Gapis, a central position for both reserves, both can be supervised from the one station.

at the present time.

It is only at Bukit Sadoiran, some parts of Merlimau, Sungai Udang, and Ayer Panas, that the reserves are up to a proper density, the remaining high forests are far too open.

Conservation and Reproduction

79. In view of the demand for timber - and there is a demand - no time should be lost in dealing with the production of timber within the reserves. The area of lalang is not very large, and I do not think it could be dealt with immediately, neither would it be practicable, as waste lands become covered with a spontaneous vegetation in a few years, and such lands by the fall of leaves, decaying matter, and the shelter afforded, would have prepared a rich vegetable humus ready for the reception of seeds, or seedlings, whereas, planting such lands would involve a heavy expenditure, and possibly nothing would be gained, as the growth of young trees planted through lalang is very slow, and may not be successful.

80. There is however at the present time much land covered with secondary growth, as well as older forest, ready to be dealt with, and for first-class timbers to be reproduced by conservation, is the slowest and most expensive

expensive method.

On such lands where the soil is good, seeds of such timbers as *Mirébau*, *Kémpias*, *Ineranti* and *Pniaga*, could be planted, while seedlings of *Gombang*, *Kayuminyak*, *Sépété*, transplanted singly would answer best. Other timbers, such as *Petaling*, *Kraujii*, *Seraya*, and *Tampines*, would have to be planted in the ordinary way. On poor soils or where the soil was gravelly, and the forest light, it would also be necessary to plant.

81. It should be remarked that at the present time we are dealing with jungles, and not with forest lands which have been conserved for years, and consequently in open forest, the jungle is likely to make equal progress with the forest. This is particularly noticeable where *risam* (*Gleichenia dichotoma*) flourishes. Although this fern does not grow in dense forest, in light forest, it chokes out any other vegetation.

A special vote for Planting.

82. To meet the requirements a special vote for planting is necessary. The present staff are not able to deal with the large area that requires planting, and I would suggest a vote which would cover the whole of the planting required, and as many of the
chief

chief forest trees only fruit periodically, the vote would be available until the work was completed, or in the event of an exceptionally heavy crop, as much seed could be collected, and planted, as possible.

83. And although the planting required is a matter bearing on the future of the reserves, some return for the money expended might be expected to commence from 4 - 6 years. Lands which have been planted thickly would in that time require thinning, and this class of timber is essentially a marketable article. The demand for stakes, poles, posts and beams, is greater than for boards and planks.

84. It should be mentioned that the available high forest cannot safely be worked where there are large areas of secondary growth, unless the proposed planting is put in hand, as it would be necessary to conserve the high forest for the natural reproduction of trees in the reserve.

85. I would add, that under any circumstances the reserves cannot do more for some time than supply the wants of the settlement, but it is
essential

essential that this much should be done.

A supply of timber is necessary in all agricultural pursuits, and especially in any new industry. The present high price of pepper might induce planters to take up the cultivation, but pepper could not be grown profitably unless posts could be supplied in the district, as otherwise the transport alone would be too great, and in fact the agricultural prospects of the settlement may be made, or marred, by the supply or want of cheap timber.

Appendices.

H. Appendices are attached showing the expenditure of the year, the revenue collected, and the value of timber supplied for government uses.

Perry.

Asst Supt Forests

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Plan A

Scale { 3" = 1 Mile
26.66 ch = 1"

BUKIT BRUANG F. RESERVE

— Scale 3 inches = 1 Mile —

NOTE.

I	High Forest ———	} Approximate
II	Secondary Jungle —	
III	Patches of Lalang —	
IV	Swamp ———	

Plan **B**
 Sungai Udang
 Forest Reserve
 Scale = 40^{ch} 1"

- I High Forest
 II Bluker^a
 III Latang
- } approximate

Red lines are inspection paths, about
 a mile remain, to be opened

Plan
Bukit Sadanan
Forest Reserve
Scale 40^{ch} = 1"

Approximate { I High Forest
II Secondary Jungle
III Summ. Clearings

Plan C
Mekong Forest Reserve
Sketch.

- I High Forest
- II High Forest in Swampy
- III Secondary Jungle and Swamp.

Apprentice

Plan. D

Ayer, Daniel
Forest Reserve

32^{ch} = 1" Scale

AYER PANAS

Forest Reserve

Scale 32 Chains = 1 inch

- 1 - High Forest
- 2 - Coppice
- 3 - Old Tin Mines
- 4 - Holdings

approximate

Chief boundaries - Public Roads

Plan 7
Forest Reserve
Brisu
Scale 40 ch.