# GOVERNMENT NOTIFICATION.—No. 252.

The following Report of the Acting Superintendent of the Botanical and Afforestation Department, for the year 1900, which was laid before the Legislative Council on the 23rd instant, is published.

By Command,

T. SERCOMBE SMITH, Acting Colonial Secretary.

Colonial Secretary's Office, Hongkong, 26th April, 1901.

No. 11.

BOTANICAL AND AFFORESTATION DEPARTMENT, Hongkong, 28th February, 1901.

Sir,--I have the honour to submit for the information of His Excellency the Governor the Annual Report on this Department for the year 1900.

#### STAFF.

The Superintendent, Mr. C. Ford, f.l.s., left for home on the 31st March, on six months' leave, on account of sickness, and his leave was extended for another period of six months from the end of September.

The Assistant Superintendent, Mr. W. J. TUTCHER, was acting as Superintendent from the 1st April to the end of the year.

The Head Clerk, Mr. Wong Kwong-ming, resigned on the 31st March, and the Second Clerk, Mr. Wong Lung-i, was promoted to the vacant post.

Mr. Yam Kwai-un was appointed to fill the post of Second Clerk, and he commenced his duties on the 6th April.

The Head Foreman of the Gardens, Hui San-yau, was removed from his office in February, under circumstances already reported in C.S.O. No. 346 of 1900, and Li Kau, who had been previously employed in the Gardens for a great number of years, but who resigned on 31st December, 1899, was re-engaged and appointed as Head Foreman.

The Foreman of the Propagating Department, and one of our best men, Li Shing, resigned on the 15th July, having obtained a much better situation at Macao, at a salary of \$15 per mensem. His salary here was \$9 per month. The man appointed to succeed him, Hui Yuk-cha, was a very capable man, and began his career in the Gardens as an apprentice. He left, however, after having been in the post about six weeks, for a more lucrative appointment at Matupi, at a salary of \$25 per month, under an agreement for 3 years.

In addition to the above, the changes in the staff were very numerous, no less than 41 others, making a total of 45. leaving the service during the year, compared with a total of 18 in 1899. Of these, 30 left, 9 were dismissed, and 2 were sent to Gaol.

This rendered the carrying on of the work of the Department extremely difficult, as the men who were brought in to fill vacancies were just ordinary coolies without any technical training whatever, no others being obtainable at the wages offered.

It was thought that when the system of apprentices was instituted between 20 and 30 years ago, that in time the Department would be possessed of a staff of trained men, but unfortunately this has not been the case.

Of the many boys who have passed through their course of apprenticeship only five remain on the staff, the reason being that as soon as they have got a knowledge of their work they are able to obtain more remunerative posts elsewhere. The only way to remedy this is to give deserving men better wages.

Sickness amongst the Chinese Staff was very great as usual, there being a total of 559 days. Although this compares favourably with the previous year, with 858 days, it is still anything but satisfactory. Fifty-nine different men were sick, against 62 in 1899.

The apprentices have continued to attend the Police School during the year, by the kind permission of the Hon. F. H. May, C.M.G., Captain Superintendent of Police.

# BOTANIC GARDENS.

# PLANT SALES.

Plant sales continue to increase, as during the year 3,451 plants were disposed of, being an increase of 641 over the previous year's sales.

Of these, nearly 3,000 were sold for decorative purposes, no less than 2,042 Maindenhair Ferns being included in this number, of which 1,370 were the ordinary Adiantum cuneatum.

The sale of plants was instituted in 1884 to supply the public with rare and newly introduced

plants, (C.S.O. 1885), but very few of the plants sold now, come under this category.

The introduction, propagation, and growing of plants for distribution for economic purposes is undoubtedly one of the first duties of a Botanical Department, but the cultivation and sale of plants for decorative purposes should be undertaken by private individuals.

The revenue from plant sales was \$761.80, an increase of \$135.20 over that for 1899.

#### LOAN OF PLANTS.

The number of plants on loan for decorative purposes was 3,651, being 584 less than in 1899.

The revenue obtained from this source was \$168.32, being \$55.39 less than in the previous year. I should state that the Government does not make any profit out of the sale of plants and plant

loans, the public getting them at a price which only covers the actual cost of production.

It would be a good thing if some enterprising Chinaman would take up both the sale and loan of plants, as no doubt he would be able to make a very satisfactory living out of the business.

#### PLANT HOUSES.

The new plant house, No. 1, mentioned in last year's report, was completed during the year, and the Ferns from No. 3 transferred to it. It has proved an admirable structure as the Ferns have done exceedingly well in it. The Orchids have now been placed in No. 3. The centre house, No. 2, next requires to be taken in hand and reconstructed, and this will be done as soon as time and funds per-

### WALKS.

The re-surfacing of walks with disintegrated granite and cement was continued so far as funds would allow, but much still requires to be done.

#### Typhoon.

On the 9th and 10th of November, a severe typhoon passed over the Colony, doing much damage to vegetation generally. A special report on the damage done in the Gardens, as well as in the Plantations, was forwarded in Botanical and Afforestation Department Letter No. 35. Large trees in the Gardens suffered less than was to be expected, but shrubs and annuals came off badly.

The frequency of these storms (there was one in 1894 and another in 1896) retards the work of the Department considerably, as a fresh start has to be made in many directions after every severe

#### Interchange of Plants and Seeds.

The chief donors were:

Acclimatizing Association, South California.

Acclimatization Society, Queensland. Belilios, c.m.g., Hon. E. R.

Blake, G c.m. G., H.E. Sir Henry.

H.E. Lady.

Botanic Gardens, Aburi, Gold Coast.

British Guiana.

Durban. " "

Jamaica. ,,, ,,

Nagpur.

Government, Ootacumund.

Penang.

Royal, Calcutta. ,, :;

Saharanpur. ,, ,,

Sydney.

The following were the principal recipients:-

Acclimatizing Association, South California.

Acclimatization Society, Queensland.

Agricultural Department, Saigon.

Botanic Gardens, Aburi.

British Guiana.

Ceylon. " ,,

Durban. ,, ,,

Jamaica. ,,

Penang. Royal, Kew. ,, " ,,

Sydney.

,, ,,

Trinidad. ,, "

Tokyo.

Brown, Edmund A., Province Wellesley.

Conservator of Forests, Bengal.

Cooke, Mrs. R.

Draper, W., Egypt. Edwards, C. C., Amoy.

Hahn, A.

Hodgins, Captain A. E. Jardine, Matheson & Co., Messrs.

Logan, J. C.

Public Museum, Milwaukee, U.S.A.

Roebelin, C.

Ricketts, C. B., Foochow. State Gardens, Baroda.

Veitch, Messrs. J. & Sons.

Cooke, Mrs. R.

Cundall, C. H.

French Convent.

Gascoigne, c.m.g., H.E. Major General. Keswick, Hon. J. J.

Koebele, A., Honolulu.

May, c.m.g., Hon. F. H.

Mount Gough Police Station.

Public Museum, Milwaukee.

Roebelin, C.

The Magistracy.

Veitch, Messrs. J. & Sons, Chelsea.

Victoria Gaol.

#### RAINFALL.

The rainfall as registered in the Gardens amounted to 80.61 inches, as compared with 83.91 inches in 1899. The daily statistics are given in Appendix A.

#### VISITORS

During the year, amongst others, the following gentlemen interested in Botany, Horticulture, &c., have visited the Gardens:

Mr. Peter Barr of the well-known firm of Messrs. Barr & Son, Bulb and Seed Merchants, London.

Mr. D. F. FAIRCHILD of the U. S. Department of Agriculture, who was here making investigations in regard to economic plants, natives of China, likely to succeed in different parts of the United States.

Mr. B. HAYATA, a student of the Imperial University, Tokyo, who came for the purpose of study in the Gardens.

Mons. Sauvale, an official of the new French Colony of Kwong Chau-wan, who came up to make enquiries as to the most suitable trees for planting at that place, and also as to what economic plants would be likely to succeed there.

Mr. E. M. Wilcox, Travelling Fellow in Economic Botany of Harvard University.

Mr. E. H. Wilson of Messrs. J. Veitch & Sons, the eminent firm of Nurserymen, London.

# MOUNTAIN LODGE GARDEN.

The old summer residence of H. E. the Governor, "Mountain Lodge," having been demolished, and another site chosen for the new structure, considerable alterations in the gardens there have become necessary. Beyond turfing the new banks, very little could be done during 1900, but it is hoped that the new building will be sufficiently advanced before the end of 1901 to allow of the gardens being completed.

# PUBLIC RECREATION GROUND, KOWLOON.

A piece of land immediately to the north of Austin Road, and east of Garden Lots 21 and 48, comprising about 11 acres, was placed under this Department by C.S.O. 120, for converting into a public recreation ground, and a vote of \$2,000 has been placed in the Estimates to commence the work in 1901. After the land had been placed under this Department, the Kowloon Bowling Club made an application for a piece of ground (30,000 square feet) on the site of the proposed recreation ground, and obtained a lease from the Government for the same. The original plans, therefore, of Mr. FORD, for draining and laying out the ground will have to be abandoned, and others substituted.

# HERBARIUM AND LIBRARY.

Owing to the absence on leave of the Superintendent, no time could be devoted to herbarium work. My time was fully occupied in carrying on the practical work of the Department.

Annual Reports, Bulletins, &c. have been received from the following establishments, to the chiefs of whom our thanks are due:—

British Guiana, Calcutta, Ceylon, Durban, Haarlem, Jamaica, Kolonial Museum Haarlem, Milwaukee, Mysore, Lagos, New South Wales, Saharanpur, Straits Settlements, Sydney, Trinidad, Agricultural Departments of Cape of Good Hope, England, United States of America, Western Australia, University of California, Tokyo, Zanzibar, Forest Administration in Ajmer Merwara, Assam, Baluchistan, Bengal, Bombay, Burma, Central Province, Coorg, Hyderabad, Madras, North-West Provinces and Oudh, Punjab, and Imperial Department of Agriculture, West Indies.

The following works have been added to the library:—

#### Purchased:--

Flora Capensis, Vol. VII., Part III. Gardeners' Chronicle. Journal of Botany. Botanical Magazine.

#### Presented:-

Forestry in British India, by Inspector General of Forests to the Government of India. Hand-list of Tender Dicotyledons cultivated in the Royal Gardens, Kew, 1899.

Hooker's Icones Plantarum, by Royal Gardens, Kew. Kew Bulletin.

Kew Bulletin, do., do. Icones Floræ Japonicæ, Vol. I., Part I., from the Imperial University, Tokyo. Tentamen Floræ Lutchuensis, from the Botanical Institute, Tokyo. Natal Plants, Vol. 2, Part 2, and Vol. 3, Part 1.

#### FORESTRY.

Planting has been carried on in Hongkong, Kowloon and the New Territory. The planting in the New Territory has been confined to the new Road leading from Yaumati past Cheung Sha Wan to Shatin, and around the Police Stations at Taipo, Ping Shan and Au Tau. Statistics are given in Appendix B.

#### THINNING OF PLANTATIONS.

This branch of work has been carried on in various localities, a total of 34,706 trees having been removed, and sold for \$824.45. The net revenue for forest products was \$888.98. In Appendix C, particulars of the work are given.

#### PROTECTIVE SERVICE.

During the year, 623 trees were reported as having been illicitly cut down and removed. This is slightly less than the number (640) for the previous year. The Forest Guards brought forward 54 cases, and obtained 49 convictions, against 25 cases and 24 convictions in 1899.

#### FIRES.

The year has been fortunate as regards fires, only 25 being reported with a destruction of 2,067 trees, compared with 52 fires and 13,299 trees in the previous year. Eight of the fires did no damage to trees, only grass being burnt. A fire which destroyed 600 trees occurred near Tytam Reservoir, and was caused by a party of Europeans picnicking on 26th December. Many of the fires are undoubtedly caused by the careless use of matches by pedestrians, and this is probably how the fire near Pokfulum occurred, which destroyed nearly 800 trees. Statistics are given in Appendix D.

#### FIRE BARRIERS.

Old barriers were cleared to the extent of  $21\frac{1}{2}$  miles, and new on s made to the extent of  $1\frac{1}{4}$  miles.

#### CATERPILLAR PLAGUE.

In the beginning of the year, caterpillars (Metanastria punctata, Walker) were discovered on pine trees in various parts of the island, and the Superintendent at once made plans for coping with the pest by inviting Chinese coolies to collect, at a certain price per catty. The caterpillars were more prevalent on the Shun Wan peninsula, near Aberdeen, and on Aplichau Island than elsewhere, and at these places 7,030 catties, or nearly  $4\frac{1}{4}$  tons were collected, at a cost of \$447, during March. In May they again became troublesome, and during that month and the following, 409 catties were collected at Aberdeen and Aplichau, and 500 catties at Kowloon. Towards the end of July, the second crop appeared at Kowloon, and during that month and August a further quantity of 226 catties was collected.

#### Banian Trees in Queen's Road.

The widening of Queen's Road made it imperative that the large Banian trees (Ficus retusa) growing in front of Webington Barracks and in front of the Naval Yard should be either cut down or transplanted. On account of the great age of the trees (they were probably growing there when Hongkong was a fishing village), it was a serious problem as to whether they would survive transplanting, but I decided to make the experiment. Several of these were nearly a hundred feet high, with trunks 2 feet in diameter at 4 feet from the ground. I had them all lopped to within 15 or 20 feet from the ground, and then bound round with straw, before attempting to remove them. When their respective sites had been prepared, they were moved with balls of soil and roots, 8 to 12 feet in diameter, by means of wire ropes and derricks. After they were in position the soil was filled in around the roots; they were then watered and the trunks and branches kept constantly wet. Syringing was also carried on during removal. There were altogether 35 trees treated in this way, and I am glad to say that they are all starting to push forth new growths.

#### BRUSHWOOD CLEARING.

It having been proved conclusively that certain species of Anopheles were intermediate hosts of the malaria parasite, certain experiments were made, towards the end of the summer, with the object of lessening the numbers of these mosquitoes in well known fever districts. In connection with these experiments, the brushwood around the Military Sanatorium, Mount Gough, was cleared, for a space of three or four hundred yards, by the Military Authorities, so as to give the mosquitoes as little cover as possible. Similar work was likewise undertaken by this Department, by order of the Government, at Kennedy Town. It is hoped that this, in conjunction with the filling up of the breeding pools of the mosquitoes, will effect the desired result.

#### NEW TERRITORY.

# TREE PLANTING.

Tree planting was commenced in the New Territory around the Police Stations at Ping Shan, Au Tau and Taipo, and on both sides of the Sham shui-po-Shatin Road, as previously mentioned. In all 81,154 trees were planted, particulars of which are given in Appendix B.

#### SUGAR CANE.

In February, 145 cuttings of seedling canes were received from the Assistant Superintendent of Forests, Penang, Mr. C. Curtis, f.l.s., and about one half of these were planted in the Sookunpo Nursery, and the others at Ha Tsun; Mr. Tang Hing-tong having promised to make a trial of them. I regret to say, however, that only 15 plants were obtained from the whole lot of cuttings, as those put in at Ha Tsun all failed.

Another lot of 318 cuttings was received in July, from Mr. E. A. B. Brown, Province Wellesley, through the instrumentality of Mr. Curtis, and these were divided between Sookunpo and Ha Tsun as before. Those planted at Sookunpo have done very well so far, and as regards size are a great improvement on the ordinary Chinese cane. Only a few, however, of the cuttings put in at Ha Tsun succeeded.

As it was the middle of July before the cuttings were planted, the summer was too far advanced to permit of the full development of the canes.

Cuttings will be taken from them in the spring so that by next winter there should be a sufficient quantity of mature canes to test their sugar-producing qualities.

In September, a consignment of 2,200 cuttings, in five varieties, was received from Java, through the kindness of Messrs. Jardine, Matheson & Co. The cuttings arrived in excellent condition, great care having been taken in the packing.

They were planted at Ha Tsun, but owing to the lateness of the season they have not done well, only some two or three hundred plants surviving.

Mr. Ford thought it would be well to know the quantity of land under sugar cultivation in the New Territory, and the Foreman Forester who was sent over to make enquiries on the subject estimated it at over 7,000 acres.

## EXPERIMENTAL GARDEN.

As there is a considerable quantity of agricultural land in the New Territory, 1 would strongly recommend the establishment of an Experimental Garden for testing economic plants likely to succeed in the district. The Chinese themselves are not likely to take the initiative in introducing new industries, but if this Department were to show them that certain plants could be grown with success, no doubt the natives would then take to cultivating such plants.

The Japanese in Formosa have already established experimental Stations, and the French at Kwong Chau-wan, and the Germans at Kiaut-chau have also under censideration similar schemes.

There are many kinds of fruits which could be grown, and if this were done we should not only have better varieties than those already in the market, but new kinds as well.

Agave sisalana is a plant likely to succeed here, and although Sisal Hemp is not such a good fibre as Manila Hemp, it is one which will well repay cultivation.

## TREE CUTTING.

A great deal of tree cutting has gone on in the past year, and at present there are no means of stopping it. Nearly all the people who have been brought before the Magistrates in connection with this subject have produced papers, purporting to be leases from the Chinese Government, giving them power to cut down trees growing on the land mentioned in the leases. •This not only applies to the common Pine tree, but to every other kind of tree growing within the areas mentioned. Before anything can be done to stop the practice the Land Court will have to decide the validity of the various leases.

I have the honour to be,

Sir, .

Your most obedient Servant,

W. J. TUTCHER,
Acting Superintendent,
Botanical and Afforestation Department.

Honourable J. H. STEWART LOCKHART, Colonial Secretary,

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&с.,

&c.

Appendix A.

RAINFALL OBSERVATIONS MADE AT THE BOTANICAL GARDENS, DURING 1900.
RAIN GAUGE, ABOUT 300 FEET ABOVE SEA LEVEL.

	Date.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1,		•••			.98		.56	2.12		.56	***	•••	
2,		•••	•••		•••	1,31		.08	•••		•••		•••
3,		.19		.02	1.28	.02	.80		· } •••			• • • •	•••
4,		.48	•••	.24	.29	•••	.66	.97		•••			
5,		.01	· · · ·	.32	.16	· • • •	1.51		• • • • • • • • • • • • • • • • • • • •				.01
6,	••••	.14	•••	.02	.05	.01			• • • •				•••
7,		.01	•••	.20	.01			.13			•••	•••	.08
8,	•••••	08	•••	.10	•••			.54		.18	•••		•••
9,	***************************************	. • • •		.12	•••	•••	.26	.74	.02	.26	.40	.73	•••
10,	•••••	•		.79			.31	.91		.01	.53	5.89	•••
11,	•••••	•••	•••		••.	· · · ·	3.14	.03		2.99	1.29	.04	
12,			•••	.05	•••	1.03	1.02	.16	•••	1.67	.02	.02	•••
13,		•••		.02	•••	.89	.03	.21	•••	.20			•••
14,	•••••	•••	•••		.06	4.55	2.42	.27	.10	•••			.07
15,		•••		•••	•••	1.93	5.06			•••	.06	•••	•••
16,	••••••	•••		.01	•••	.01	2.45	.02		•••	•••		•••
17,		•••	.01		•••	.03	.19		•••	•••	•••	•••	***
18,		•••	.71	.15		•••	.11		.09			.08	•••
19,		•••	.16	.16		.02		.21	.02			.15	•••
20,	••••••	•••	1.04		•••			.37	.25	.29	•••		4
21,		•••	.11	.01	•••	.01	•••	.03	1.73	.01	•••		
22,		.01	·	.02	.01	.01	.68	.01	1.10	•••	•••		•••
<b>2</b> 3,		•••	•••	.01	•••	.06	.01	.17	.20	•••			•••
24,		•••	.02	.18	•••		1.28	.16	.02	•••	•••		•••
25,		• •••		.05	.06	•••	.06	.76					•••
26,		•••	•••	.03	.01		.04	1.36	.67				•••
27,		•••	•••	.02	.29		.08	1.14	•••				
28,	******	.02	.05	.04			.01	1.20	•••			.01	
29,	•••••	.02					1 33	.30					•••
30,		•••	•••	.26	•••	.01	5.76	.31	.82			•••	
31,			•••	.75				•••	.35	•••	•••		•••
	Total,	,96	2.10	3.57	3.20	9.89	27.77	12.20	5.37	6.17	2.30	6.92	.16

Total inches for the year=80.61. Observations made at 10 A.M.

W. J. TUTCHER, Acting Superintendent, Botanical and Afforestation Department.

Appendix B.

STATISTICS OF PLANTING OPERATIONS.

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7	4
C	2
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C	5
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C	)
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Camphor Area Grand sown in Acres.
Pines sown in situ.
Celtis.
Bamboo.
Albizzia Lebbek.
Ptero- carpus.
Aleur- rites.
Mela- leuca.
Trista- nia conferta.
Eucalyp- tus.
Cam- phor.
Pinns Massoni- ana.
Locality.

W. J. TUTCHER,
Acting Superintendent,
Botanical and Afforestation Department.

# Appendix C.

# SALE OF FORESTRY PRODUCTS.

Locality.	Quantity.	Amount realized.	
. Pine Trees.		\$ c.	
Aberdeen,	10,810 7,166 5,581 6,839 1,637 2,723	292.46 49.79 39.79 301.05 56.78 84.58	
Free Prunings,	168,357 catties. 44,689 ,,	49.96 14.57	
Total Revenue for Forestry Produ	nets	888.98	

W. J. TUTCHER,
Acting Superintendent,
Botanical and Afforestation Department.

# Appendix D.

# STATISTICS OF GRASS FIRES.

Date.	Localities.	Number of Fires.	Number of Trees Destroyed.	
1900.				
January March August October  " " " " " " " " " November " " " " " " " " " " " " " " " " " " "	21 Stanley,	1 1 1 1 1 1 1 1 1 1 1	 20 6  7  11 25 250 50 284   784  30 600	
	28   Stanley,	25	2,067	

W. J. TUTCHER,

Acting Superintendent,
Botanical and Afforestation Department.