19TH DECEMBER 1885, N

No. 2964, PUBLIC.

Govt. of {1885} Madras.

REVENUE.

20 d.C.

5

Issued

Recd. 8/11/86. Encl.

G.O., 30th November 1885, No. 1329.

NOVEMBER.

Government Botanical Gardens and Parks.

Reviewing annual report of — for 1884-85.

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Read—the following papers :—

Budget estimate of the Revenue Secretariat, dated 11th December 1885.
Budget estimate of the Local Fund Establishment in the Chief Secretariat, dated 18th December 1885.
Budget estimate of the Chief Secretariat, dated 23rd December 1885.

Order—dated 7th January 1886, No. 8, Financial.

The Government resolve to review the budget estimate of charges under "18, *General Administration*," under Provincial and Imperial Services, for 1886-87, in the order of the several minor heads included therein.

PROVINCIAL.

2. Salary of His Excellency the Governor.—A sum of Rs. 1,20,000 will be provided as usual under this head.

			Rs.
Actuals ..	1882-83		1,27,412
	1883-84		1,20,000
	1884-85		1,20,000
Grants ..	1885-86		1,20,000
	1886-87		1,20,000

3. Staff and Household of His Excellency the Governor.—The charges under this head, comprising (i) the salaries, establishment and contingencies of the Private Secretary to the Governor, (ii) the expenses connected with the Governor's band, and (iii) the lascar establishment, &c., of His Excellency's camp equipage, have been fixed at Rs. 36,894, as shown below :—

							Rs.
(i)	G.O., No. 1283,	Financial,	dated	16th	September	1885 ..	24,671
(ii)	„ „ 1256	„	„	8th	„	„	9,750
(iii)	„ „ 1538	„	„	23rd	November	„	2,473

A sum of Rs. 1,706 will be added under the first head to provide for the assessment on Government House. The total grant will thus be raised to Rs. 38,600, against Rs. 38,000 sanctioned for the current year :—

	Years.	Salaries.	Establishments.	Contingencies.	Governor's band.	Camp equipage.	Total.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Actuals ..	1882-83	18,000	4,596	9,254	9,712	..	41,562
	1883-84	18,000	4,596	2,907	9,659	..	35,162
	1884-85	21,284	4,671	3,481	9,450	2,167	41,053
Grants ..	1885-86	18,000	4,596	3,204	9,700	2,500	38,000
	1886-87	18,000	4,896	3,481	9,750	2,473	38,600

			Rs.
Actuals ..	1882-83		90,885
	1883-84		85,558
	1884-85		90,000
Grants ..	1885-86		90,000
	1886-87		90,000

4. Expenditure from Contract Allowance.—The fixed amount of Rs. 90,000, passed in G.O., Financial, No. 1283, dated 16th September 1885, will be provided as usual under this head.

		Rs.
Actuals	1882-83	3,460
	1883-84	3,486
	1884-85	2,636
Grants	1885-86	4,500
	1886-87	4,500

5. TOUR EXPENSES.—These constitute the travelling expenses, &c., of the Private and Military Secretaries and of the Surgeon and Aides-de-camp to the Governor, and have been fixed at Rs. 4,500 in G.O., No. 1283, Financial, dated 16th September 1885.

		Rs.
Actuals	1882-83	1,24,667
	1883-84	1,23,716
	1884-85	1,25,640
Grants	1885-86	1,22,900
	1886-87	1,24,500

6. EXECUTIVE COUNCIL.—A sum of Rs. 1,24,500, the average of the last 3 years' expenditure, will be provided under this head for the salaries, travelling allowances and contingencies of the two civil Members of Council.

7. LEGISLATIVE COUNCIL.—Under this head appear—(i) allowances for broken periods, which are paid in this Presidency to the Madras Member of the Viceroy's Legislative Council, and which are ultimately recovered from the Government of India by means of "*Inter-provincial adjustments*," (ii) the travelling allowances of non-official members attending the Legislative Council at the head-quarters of Government, when at Ootacamund, and (iii) the cost of the Legislative department of the Chief Secretariat, including the Assistant Secretary to Government. Provision will be made under the foregoing heads with reference to past actuals, and the total grant fixed at Rs. 14,300, as shown below:—

Years.		Members of the Viceroy's Council.	Travelling allowances of non-official Members.	Salary of Assistant Secretary.	Establishment in the Chief Secretariat.	Total.
		Rs.	Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	..	484	7,950	3,235	11,669
	1883-84	1,806	190	8,772	2,452	13,220
	1884-85	1,881	138	9,682	2,743	14,444
Grants	1885-86	..	..	9,600	2,700	12,300
	1886-87	1,800	200	9,600	2,700	14,300

8. CIVIL SECRETARIATS—(A) *Public, &c., departments.*—Besides the expenditure properly belonging to the Chief Secretariat, it has been the practice to exhibit under this head (i) the cost of the annual movement of Government offices to the hills, including the charges incurred by Members of Council and the Revenue and Military Secretariats; (ii) the allowances of the chobdars attached to His Excellency the Commander-in-Chief and the other Members of Council, amounting respectively to Rs. 396 and Rs. 1,536 per annum; (iii) the salary and establishment of the officer entrusted with the preparation of the annual Administration Report; and (iv) the expenses incurred by other officers deputed on special duty, *e.g.*, in connection with the compilation of the Manual of Administration. The Accountant-General will report whether these charges cannot be transferred to more appropriate headings, or exhibited separately like the cost of the Translators' department. The estimate of the *Chief Secretariat* is fixed at Rs. 1,18,000 (including the charges on account of the chobdars of His Excellency the Commander-in-Chief and Members of Council), and is accepted. For the cost of the movement of Government offices to the hills, a sum of Rs. 37,000 will be provided. For the preparation of the Administration Report, the current year's grant of Rs. 3,000 will be repeated. The Accountant-

Years.		Salaries.	Establishments.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	54,584	51,470	9,158	1,15,212
	1883-84	64,377	48,537	12,141	1,25,055
	1884-85	54,218	53,494	14,698	1,22,410
Grants	1885-86	55,300	51,450	9,450	1,16,200
	1886-87	55,300	53,300	9,400	1,18,000

		Rs.
Actuals	1882-83	35,465
	1883-84	34,540
	1884-85	37,065
Grants	1885-86	30,000
	1886-87	37,000

		Rs.
Actuals	1882-83	2,132
	1883-84	2,915
	1884-85	3,652
Grants	1885-86	3,000
	1886-87	3,000

General is requested to report, in future, beginning with the preparation of the present "Manual of Administration," the *extra* cost entailed by the deputation of any officer on special duty, on the termination of such duty (giving in detail in each case the charges incurred on account of salaries, establishments and contingencies and the heads of account to which the charges are debited).

Languages.	Government Order. No.	Government Order. Date.	Salaries.	Establishments.	Contingencies.	Total.
			Rs.	Rs.	Rs.	Rs.
Tamil ..	1285	16th Sept. 1885.	3,600	3,360	65	7,025
Telugu ..	1299	18th ,, ,,	3,600	3,360	60	7,020
Canarese ..	1281	15th ,, ,,	3,000	3,180	60	6,240
Malayalam ..	1303	21st ,, ,,	3,000	3,180	50	6,230
Persian and Hindustani.	1304	21st ,, ,,	3,600	3,360	430	7,390
		Total ..	16,800	16,440	665	33,905

(B) *Translators' department.* — The grant for 1886-87 under this head has been fixed at Rs. 33,905 in the Government orders quoted on the margin, and will be entered in round numbers, as shown below, in the consolidated budget:—

Years.		Translators.	Establishments.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	16,562	11,330	1,028	28,929
	1883-84	16,148	15,979	1,214	33,341
	1884-85	15,527	16,669	568	32,764
Grants	1885-86	16,800	16,440	560	33,800
	1886-87	16,800	16,440	660	33,900

(C) *Revenue department.*—The charges are estimated at Rs. 86,538. Assuming that the cost of the additional establishment provided for (viz., three servants on Rs. 324 per annum) will be sanctioned in due course, and deducting Rs. 2,000 on account of subscriptions to the Civil Service Annuity Fund, the grant under this head will be fixed at Rs. 84,500 in round numbers, against Rs. 84,100 sanctioned for the current year as shown below:—

Years.		Salaries.	Establishment.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	59,523	28,866	5,187	93,576
	1883-84	44,713	28,629	5,812	79,154
	1884-85	49,653	32,773	4,581	87,007
Grants	1885-86	47,520	31,254	5,326	84,100
	1886-87	47,500	31,578	5,422	84,500

The total grant under *Civil Secretariats* will then stand at Rs. 2,76,400, as compared with Rs. 2,67,100 sanctioned for the current year.

9. MILITARY SECRETARIAT.—The grant under this head for 1886-87 has been fixed at Rs. 63,886 in G.O., No. 1309, Financial, dated 21st September 1885, and will be included in the consolidated budget in round numbers at Rs. 63,900, as shown below:—

Years.		Salaries.	Establishment.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	26,181	31,739	2,720	60,640
	1883-84	28,384	29,853	3,825	62,062
	1884-85	19,103	32,619	3,805	55,527
Grants	1885-86	21,000	30,948	1,952	53,900
	1886-87	30,000	30,948	2,952	63,900

10. BOARD OF REVENUE.—The amount passed for the current year—Rs. 2,60,000—is repeated for 1886-87, and has been accepted in G.O., No. 1384, Revenue, dated

19th December 1885. It is observed that this head also includes charges on account of the salary of the officer who compiled the Manual of Administration which, in accordance with the instructions given in paragraph 8, will in future be shown under a separate head :—

Years.		Salaries.	Establishments.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	78,630	81,780	11,830	2,72,240
	1883-84	54,884	81,894	13,706	2,50,484
	1884-85	81,028	80,387	15,836	2,77,251
Grants	1885-86	1,60,420	81,980	17,600	2,60,000
	1886-87	1,60,420	81,980	17,600	2,60,000

11. Local Fund Establishments in Imperial and Provincial Offices.—The cost of the establishment in the Chief Account's Office has been accepted in G.O., No. 1342, Financial, dated 28th September 1885, at Rs. 28,320, *inclusive of contingencies* amounting to Rs. 3,220. That in the Chief Secretariat (including the establishment attached to the office of the Board of Revenue up to 31st March 1885) is now estimated at Rs. 19,488, *exclusive of contingencies*; as it is considered undesirable to burden Local Funds with the *Provincial* expenditure on account of contingencies, the estimate will be accepted. The total grant for both offices will then stand at Rs. 47,800 in round numbers. The Accountant-General is requested to report the actual expenditure incurred in the first instance by Imperial and Provincial Services under this head during the last three years in each of the three offices above named, together with the actual amounts recovered from Municipalities and Local Fund Boards, including pensions, contingencies, &c.

		Rs.
Actuals	1882-83	46,431
	1883-84	38,658
	1884-85	41,427
Grants	1885-86	41,300
	1886-87	47,800

IMPERIAL.

Years.		Salaries.	Establishments.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	76,378	1,25,741	6,265	2,08,384
	1883-84	83,109	1,21,488	8,336	2,12,933
	1884-85	76,922	1,22,609	6,912	2,06,443
Grants	1885-86	88,190	1,28,166	7,244	2,23,600
	1886-87	80,700	1,26,983	6,517	2,14,200

12. Chief Office of Account and Audit.—The estimate under this head has been passed in G.O., No. 1306, Financial, dated 21st September 1885, for Rupees 2,14,218, and will be included in the consolidated budget in round numbers, as shown on the margin.

Years.		Salaries.	Establishments.	Contingencies.	Total.
		Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	1,200	21,035	4,520	26,755
	1883-84	1,200	21,339	3,789	26,328
	1884-85	1,200	20,830	2,419	24,449
Grants	1885-86	1,200	21,429	5,371	28,000
	1886-87	1,200	20,844	3,356	25,400

13. Currency department (*including the circle of issue at Calicut*).—The grant under this head has been fixed at Rupees 25,454 in G.O., No. 1343, Financial, dated 28th September 1885, and may be entered in round numbers at Rs. 25,400, as shown on the margin.

		Rs.
Actuals	1882-83	
	1883-84	
	1884-85	544
Grants	1885-86	279
	1886-87	1,500
		500

14. Reserve Treasury.—Considering the small expenditure under this head during the last three years, a provision of Rs. 500 should suffice for 1886-87.

15. Allowances to Presidency Banks.—The current year's provision of Rs. 64,900 may be repeated under this head, pending the modifications to be introduced on the contemplated renewal of the present agreement with the Bank of Madras.

Years.		For General Treasury duties.	For Government Savings Banks business.	For Public Debt Office duties.	For service postage stamps.	Total allowances to Presidency Banks.
		Rs.	Rs.	Rs.	Rs.	Rs.
Actuals	1882-83	13,000	15,859	35,766	808	65,433
	1883-84	12,000	15,213	36,268	228	63,789
	1884-85	12,000	15,363	37,044	678	65,085
Grants	1885-86	12,000	15,300	36,800	800	64,900
	1886-87	12,000	15,300	36,800	800	64,900

16. The total grants under Provincial and Imperial Services will then be Rupees 10,43,000 and 3,05,000, respectively, as shown below :—

18. General Administration.	Actuals.			Grants.	
	1882-83.	1883-84.	1884-85.	1885-86.	1886-87.
Provincial.	Rs.	Rs.	Rs.	Rs.	Rs.
Salary of His Excellency the Governor.	1,27,419	1,20,000	1,20,000	1,20,000	1,20,000
Staff and Household of the Governor ..	41,502	35,162	41,053	38,000	38,600
Expenditure from contract allowance ..	90,885	85,558	90,000	90,000	90,000
Tour Expenses	3,460	3,486	2,636	4,500	4,500
Executive Council	1,24,567	1,23,716	1,25,640	1,22,900	1,24,500
Legislative do.	11,669	13,220	14,444	12,300	14,300
Civil Secretariats	2,75,314	2,75,005	2,82,899	2,67,100	2,76,400
Military Secretariat	60,640	52,062	55,527	53,900	63,900
Board of Revenue	2,72,240	2,50,484	2,77,251	2,60,000	2,60,000
Local Fund Establishments in Imperial and Provincial offices	46,431	38,658	41,427	41,300	47,800
Total ..	10,54,187	10,07,351	10,50,877	10,10,000	10,40,000
Imperial.					
Chief Office of Account and Audit ..	2,08,384	2,12,933	2,06,443	2,23,600	2,14,200
Currency Office	26,755	26,328	24,449	28,000	25,400
Reserve Treasury	..	544	279	1,500	500
Allowances to Presidency Banks ..	65,433	63,789	65,085	64,900	64,900
Total ..	3,00,572	3,03,594	2,96,257	3,18,000	3,05,000
Grand Total ..	13,54,759	13,10,945	13,47,134	12,28,000	13,45,000

(True Extract.)

Acting Chief Secretary.

To all departments of the Secretariat.
„ the Private Secretary to His Excellency the Governor.
„ the Military „ „ „
„ the Accountant-General.

Exd. A. Raitt.

No 114 Wdf Jan: 14. 1886

Recorded

14/1/86

Govt. of {1886} Madras.

FINANCIAL.

Issued

Recd. 12/1/86. Encl.

G.O., 7th January 1886, No. 8.

No 114 Wdf Jan. 14. 1886

JANUARY.

Budget Estimates.

Reviewing the — of charges connected with the Revenue and Chief Secretariats for 1886-87.

With order

REPORT

ON

THE PROGRESS AND CONDITION

OF THE

GOVERNMENT BOTANICAL GARDENS AND PARKS ON THE NILGIRIS,

FOR THE YEAR

1883-84.

MADRAS:
PRINTED BY E. KEYS, AT THE GOVERNMENT PRESS.

1884.

REPORT

ON THE

PROGRESS AND CONDITION OF THE GOVERNMENT BOTANICAL GARDENS AND PARKS, NILGIRIS, FOR THE OFFICIAL YEAR 1883-84.

In conformance with the desire expressed in G.O., No. 204-B, Revenue, 10th February 1883, and G.O., No. 443, Revenue, 14th April 1883, I took over charge of the several Government Gardens and Parks, Nilgiris, on the 18th June 1883, from Mr. Jamieson, who had been in control of them since the year 1871, and the following is a list of those horticultural establishments over which I now exercise supervision:—

I.—Ootacamund.

(*a*) Government Gardens.
(*b*) Government House Gardens with the Eucalyptus Forest attached.
(*c*) Stonehouse Park.
(*d*) Church Hill.
(*e*) Crewe Hall Estate and adjoining grounds.

II.—Coonoor.

Sim's Park.

III.—Barliyar.

Experimental Garden.

IV.—Kalhatti.

Experimental Garden.

2. On my taking over charge, Government desired me to submit to them my views as to what was necessary in order that the gardens might be put into a perfect state of repair. This I did. The Government approved of my proposals, and granted the money, which was required for carrying into effect the many much needed alterations.

3. I. Ootacamund—(*a*) Government Gardens.—The staff of officers is the same as heretofore. They have all performed their duties to my entire satisfaction, and I take this opportunity of thanking them for the heartiness with which they have responded to my demands for increased assiduity. I wish especially to record my obligations to the Curator, Mr. Jamieson, for the loyal manner in which he has on every occasion supported me in designing the alterations I wished to introduce, and for the skill and perseverance which he has evinced in carrying out those alterations to a satisfactory conclusion.

4. *Alterations.*—Of those changes which I stated in my letter to Government, dated 19th August 1883, as being desirable, the following have been already completed, or are now in the course of being carried out:—

(1) The more swampy portions of the gardens have been thoroughly drained; and to this end open drains have for the most part been preferred to the closed ones, which were proposed in my letter of 19th August 1883, quoted above. The reason for making this change was that I could obtain drain-pipes of second-rate quality only, and these too at a cost much greater than I could approve.

(2) All the old lawns between the entrance gates and the lower terrace have been levelled and the greater part of them re-grassed. The broad walk also, which formerly extended from the entrance gates to the lower conservatory, has been dug up and laid down in grass. All this portion of the gardens, with the exception of a few trifling works which have still to be executed, may be regarded as finally completed. The lawns to the left of the entrance gates as you approach the gardens, together with the environments of the old Cinchona Laboratory, are being proceeded with, and will, I hope, be finished before the end of the present year. Mowing machines and rollers have been purchased and the grass, though by no means yet in perfect order, is greatly improved in appearance. When these works connected with the lawns are completed, visitors on entering the gardens will have presented to their view a very much more extensive sweep of smooth sward than was to be had formerly.

(3) All the roads and walks of the lower gardens have been re-made, and are now in good order. Some of them, however, will shortly need more gravel, and this will be supplied during the ensuing winter. The road and walks in front of the entrance gates will also be completed about the same time.

(4) Nearly all the plants which have flowered during the past year have been identified, and the trees and shrubs have been labelled. Great difficulty was experienced in finding any one who could paint the labels properly, and this must account for the delay which took place in respect of their being put down.

(5) Very little has yet been done in the way of making an *herbaceous botanical garden*, and nothing at all in the way of making the proposed *experimental kitchen garden*, as the labor which would have been required for these objects has been expended upon other more pressing works; but I hope that, during the course of next year, I shall be able to establish both.

(6) Nothing has yet been done towards making the *meteorological observations* which are taken daily in the gardens more complete, beyond instituting preliminary inquiries as to the cost of instruments. At present the only observations which are recorded are those connected with the rainfall; these are punctually and trustworthily made.

5. *Repairs.*—The Arbor and Bandstand have been either rebuilt or substantially repaired, and some slight repairs have been done also to the lower conservatory. This latter building is, however, in a very bad condition; and it will be a matter for not distant consideration, whether or no it had not better be pulled down. If it should be determined to pull this building down, I would recommend that it should not be rebuilt on its present site, but in some other part of the gardens, as then there would be one unbroken sweep of lawn extending from the entrance gates to the lower terrace. The other two conservatories are in fair order. The Propagating houses are, on the other hand, in bad condition and need considerable alterations. The usual annual repairs have been made to the Curator's house as well as to those of the head and under Overseers, and all are now in good condition. It is, however, desirable that the present tile and matting roofs of these three houses should be replaced before long by iron ones. New cooly lines containing fifteen substantial brick-houses have been put up during the past year, and it is intended to supplement these by another set of lines which shall contain ten houses. The lines are intended to give accommodation to the more permanent laborers on the establishment.

6. *Nuisances.*—The chief annoyances in the maintenance of these gardens arise from the trespass of cattle, the depredation of porcupine, and the inveterate habit which the coolies have of making short cuts in every direction over the lawns and grass slopes. The first and second of these nuisances I hope to remedy; the one by fencing the more exposed boundaries of the gardens, and the other by the administration of poisoned favorite foods. To attempt a remedy for the third nuisance seems useless.

7. *Season.*—The light monsoon of last year and the, as yet, almost total failure of the present one has been very favorable for carrying on work connected with the alterations and repairs mentioned in paragraphs 4 and 5, but the want of rain has thrown the planting season back to an unusually late period. There was abnormally severe frost in January, the thermometer falling on more than one occasion to below 20° Fr. This extreme cold destroyed many of our more tender plants in the gardens and has temporarily spoiled the appearance of many others. So great was the intensity of the frost that even large shola trees were killed on the less sheltered parts of the hills. Water placed in an earthenware chatty is said to have frozen to the depth of more than two inches, and ice, the thickness of a rupee, was of constant occurrence in the early morning on shallow ponds.

(*b.*) Government House Gardens.—These gardens and grounds, which were in a very rough and unfinished state, are now undergoing reconstruction. A large amount of work was got through during the past year, and it may be expected that the forthcoming season will see their completion. Little more remains now to be done beyond clearing the grass slopes of the more unsightly scrub and planting trees in clumps. The annexation of the Eucalyptus wood adjoining the house has added greatly to the charm of the grounds. The wood requires thinning and a few more walks might with advantage be made through it.

(*c.*) Stonehouse Park.—Many of the isolated and more ungainly trees have been cut down and fresh ones planted in groups. I wish particularly to draw the attention of Government to the absolute necessity of protecting these young plantations from the ravages of straying cattle. Further plantations of trees and shrubs will be required when the builders and road-makers shall have completed their present works.

(*d.*) Church Hill.—The usual upkeep has been maintained. No extra work has been carried out, and none is required.

(*e.*) Crewe Hall Estate and adjoining Grounds.—This has only quite recently been placed under my superintendence. Propositions for its future management and ornamentation will be made in my budget estimate for next year.

II. Coonoor—Sim's Park—(1) *Alterations.*—Nothing of much importance has been carried out during the past year under this head in the old portion of the park. The general upkeep has been well maintained. Some few of the roads and paths have been re-made, and the remainder have been repaired. The summer houses have been rebuilt.

(2) *Private Lawn Tennis Ground.*—This has been taken back into the park as the club to whom it was lent had failed to carry out certain stipulated improvements.

(3) *Labelling.*—Most of the plants have been identified, and I am having labels painted for all the more conspicuous trees and shrubs. These labels I hope to put down before the end of the year.

(4) *New Shola.*—The wood which lies between the lower end of Sim's Park and the upper end of the Wellington Race-course has been handed over by the Forest Department. A three-foot path has been cut through this wood so that persons may now walk through the park from Coonoor to Wellington, and I propose next year to convert this path into a carriage road.

(5) *Cattle Trespass.*—This plague is not so great as it is in the corresponding grounds belonging to Government at Ootacamund, nevertheless it will be necessary to erect a substantial fence round that portion of the newly added shola which is bounded by the public road.

III. Barliyar—*Upkeep.*—This has been the same as in past years, and I do not think that any changes are required. The garden continues to have the same bad reputation for unhealthiness, but from inquiries which I have made concerning the inhabitants of the neighbouring village, I cannot help thinking that the unwholesomeness of the place has been exaggerated. The trees and shrubs which have been planted out here thrive wonderfully well; and I consider this garden, for its size, to be the most important one, which the Government possesses on the slopes of the Nílgiri plateau.

IV. Kalhatti.—With the exception of planting out a few thousand seedlings of *Cinchona morada* and *C. verde*, which had been raised by Mr. Jamieson in the Government Gardens, Ootacamund, from seed purchased last year from Messrs. Christie and Co., nothing of importance has been added to these gardens during the past twelve months. The position and climate of Kalhatti resemble so closely those of Sim's Park, Coonoor, that I doubt if it is worth the while of Government to continue its cultivation. I should prefer seeing it abandoned, and a plot of about the same size taken up somewhere in the neighbourhood of Gúdalúr in the Wynaad. Gúdalúr possesses deep rich soil, and has all the characteristics of the Wynaad climate. By establishing a garden here, Government would be able to grow successfully many plants, especially palms, which they cannot grow now in any of their other gardens. The cost of opening out and fencing such a plot of ground ought not to be great, while the annual charge for maintaining the garden would not be much greater than what is at present incurred at Kalhatti. An experimental garden at Gúdalúr would be easily supervised, as it would be within easy reach of the Government plantations at Naduvatam.

Herbarium.—Since the time of my first landing in India, I have occupied much of my leisure in the collection and preservation of Indian plants, as without such a collection it is not possible to determine with any degree of accuracy many of the plants which are being constantly sent for identification. The herbarium contains now some four thousand species, the most part of which are correctly named. The specimens having been poisoned to protect them from the attacks of insects, are mounted on paper and enclosed in genus covers, and arranged according to the "Flora of British India," now in the course of publication by Sir J. D. Hooker, Director of the Royal Gardens, Kew. For this large number of species I am to no small extent indebted to the following gentlemen for their liberal assistance:—

(1) *Mr. Hollingsworth, Government Apothecary*, for many rare plants collected about Madras and Ootacamund, as well as for much critical information respecting many of our more doubtful species.

(2) *Mr. Gamble, Conservator of Forests, Northern Circle*, for a very valuable and extensive series of beautifully preserved specimens, being duplicates from his own very rich and magnificent collections.

(3) *Mr. Ferguson of Colombo, Ceylon*, for about 150 specimens of named Ceylon grasses.

(4) *Dr. Trimen, Director of the Royal Gardens, Peradiniya, Ceylon*, for many of the rarer plants of Ceylon, and for much novel and valuable information concerning them.

(5) *Dr. Bidie, Central Museum, Madras*, for duplicate specimens from the herbarium under his control. Also for the loan of the *Wight Herbarium* lately received from Kew. This Herbarium was presented to the Madras Government by Sir J. D. Hooker and contains the greater part of the *Thalamifloræ*, *Gamopetalæ*, as well as many of the *Orchids* of Wight's collections, from the specimens in which nearly all the figures in the "*Icones Plantarum Indiæ Orientalis*" were drawn. Dr. Wight may be said to have been the first scientific botanist who carefully examined and described the plants of Southern India on any large scale, and I consider it a cause for much congratulation that Madras should have been put in possession of so large a portion of his plants.

(6) *Mr. Wilson, Director of Revenue Settlement and Agriculture*, for specimens of plants of economic interest and information respecting them.

(7) *Mr. Weld, Assistant Collector, South Arcot*, for plants sent from the neighbourhood of Cuddalore.

(8) *Mr. Wedderburn, Head Assistant Collector, Wynaad*, for specimens of plants collected in the neighbourhood of Devála.

(9) *Captain Quentin Agnew*, for about one hundred and thirty excellently chosen and well-preserved specimens of plants from the neighbourhood of Guindy.

(10) *Captain Evans Gordon*, for two packets of plants from Central India.

(11) *Mr. J. Cameron, Lal Bagh, Bangalore*, for about 200 specimens of plants indigenous to the district of Bangalore, or which had been cultivated by him in the Lal Bagh.

The cabinets which had been specially made to contain these collections are at present housed in one of the lodges at the entrance to Government Gardens. The accommodation which this lodge affords is growing insufficient, and next year I shall propose that the old cinchona laboratory, which is now being used temporarily as an office, should be fitted up for their reception.

Museum.—A small collection of woods, fruits, seeds and other vegetable products of botanical or economic interest to those living on the Nílgiri plateau has been brought together. This collection is unarranged for want of space and cases, and is therefore at present of no practical value, but I would venture to suggest the desirability of having this small collection added to, and provision being made eventually for its exhibition to the public. I think that while Madras ought to possess the first museum in the Presidency, inasmuch as it is the most important town, it would not be exorbitant to ask that small museums, containing typical collections of objects of interest in their special neighbourhood, should be established in various centres over the country. If Government should sanction a museum in Ootacamund, I would advise that it should contain such objects only as would be of interest to those living on the Nílgiri plateau and the Wynaad. I would like also to see the museum take in all the chief branches of Natural Science—Botany, Zoology, Geology, Mineralogy and Ethnology. I am sure that such a museum of local products would be of service to those who are engaged in commercial, agricultural or other pursuits in this district, and I do not think that it would cost very much to set one on foot.

Library.—The botanical books at present in keeping at the gardens are chiefly benefactions from the Forest Department or loans from the library of the central museum in Madras. The very liberal grant which Government made last year for the purchase of botanical works will enable me to add many books which are pressingly needed.

Receipts and Expenditure.—The following is a summary of moneys granted for the maintenance of the various Government gardens for the year ending 31st March 1884, a detailed account of which will be found in Appendices 5—13:—

	Rs.	A.	P.	Rs.	A.	P.
Ootacamund Government Gardens, budget grant	10,380	0	0			
Grant for cooly lines	911	9	2			
Supplemental grant	2,400	0	0			
Sale of plants, &c.	3,101	14	4			
Seed supplied to the Cinchona Department	60	0	0			
				16,853	7	6
Sim's Park budget grant	1,600	0	0			
Grant for fencing	148	12	0			
Barliyár	350	0	0			
Kalhatti	200	0	0			
Stonehouse Park	600	0	0			
Upper Norwood	1,000	0	0			
Medicinal Gardens	350	0	0			
Church Hill Park	100	0	0			
				4,348	12	0
Total ...				21,202	3	6

EXPENDITURE—

	Rs.	A.	P.
Ootacamund Government Gardens	16,339	3	0
Sim's Park	1,732	3	5
Barliyár	346	5	8
Kalhatti	193	0	0
Stonehouse Park	591	7	0
Upper Norwood	1,000	4	6
Medicinal Garden	317	1	6
Church Hill Park	72	8	0
Total ...	20,592	1	1

Short Notices of some of the more interesting Plants which have been grown in the Gardens during the past year.

1. *Liberian Coffee.*—Although this grows vigorously and fruits abundantly wherever it has been cultivated, there is very little demand for it. The outer portion of the pericarp are much less succulent than in *C. Arabica*; and this accident makes it more difficult to pulp.

2. *Ipecacuanha.*—The stock of plants of this species, which at the end of last year consisted of 170 plants, has been increased to 630. All the plants are in a healthy and growing condition, and there will be in the future no difficulty in increasing the number to an indefinite degree. 12 plants well established were sent to Mr. Hadfield, Assistant Conservator of Forests, for cultivation at Nilambúr, 24 plants are also nearly ready to be despatched to each of the following gentlemen, viz., Mr. T. J. Ferguson of Calicut, to Mr. R. Morgan, District Forest officer of the Wynaad and Malabar, and to the Forest Ranger at Pálghat. Detailed directions for their cultivation have been sent with the plants. I have remarked on a former occasion that I do not think the production of Ipecacuanha will ever become a part of forestry proper, but I feel sure that in the moister climates of the West Coast and the Wynaad it may be cultivated profitably in gardens.

3. *Cinchona Santa Fé.*—In October last I had one specimen of this species left alive in the Propagating house belonging to the Cinchona Department, but as it was in a very bad condition, I had it removed and placed it under the care of Mr. Jamieson. Since then it has gradually improved and is now in a perfectly healthy state. Mr. Jamieson has already taken from this stock plant no less than thirteen cuttings. Of these, ten are rooted and thriving, and the remaining three, though not yet rooted, are looking quite healthy.

4. *Cinchona Carthagena.*—The cultivation of this species has been carried on most successfully. A few of the plants raised during the past year have been distributed to the public for experimentation, while some hundreds have been planted permanently out at Naduvatam, and some score at the Wood estate. The habit of this plant (in its young state at least) is peculiar. The lateral branches exceed considerably in growth the terminal shoot and the tendency of the plant is to become more or less like a ball stuck upon the end of a stick.

5. *Cuprea bark.* (*Remijia Purdieana*).—Out of the packet of seed, which was sent from Kew, about 250 seedlings have been raised. This is much less than was hoped for, as a great deal of the seed appeared to be quite sound. The seed was sown in nearly pure sand and watched carefully every day, and as soon as the radicle pierced the outer covering they were removed to pans containing suitable soils.

6. *Rhus vernicifera or the Japan Lacquer plant.*—Upwards of 100 plants have been raised from seed sent from Kew. The plants have not made satisfactory progress as yet. I do not think that the climate of Ootacamund quite suits them, and I intend to remove them at the proper times to Coonoor, Barliyár and Kalhatti.

7. *Rhus succedanea or the Japan Wax plant.*—Some fifty plants of this have been raised from seed sent from the Agri-Horticultural Gardens, Madras. All are doing well and have made better growth than has been the case in the last species.

8. *Quilaja saponaria.*—A few only of the seeds of this Rosaceous plant which were sent from Kew have germinated. The plants, however, which have been raised are doing well. The Quilaja is a native of Chili. It grows to the height of sixty feet, and its inner bark produces a saponaceous substance. This bark after it has been ground into a powder is used largely by the natives of the country in which it grows as a substitute for soap; and is said to be superior to the ordinary mercantile soap for many purposes in the fuller's trade.

9. *Yucca Gloriosa.*—An experiment made on slices of the stem of this plant showed that it possesses saponaceous properties similar to those of the Quilaja. The slices when rubbed between the hands with water gave a copious and pleasant lather of a highly cleansing quality.

10. *Cola nut* (*Cola acuminata, R. Br*).—Four plants of this nut have been raised from seed sent to the gardens by Colonel S. P. Scott. The *Cola* or *Kola-nut* is a native of tropical Western Africa, and is eaten largely by the natives of Guinea. The nut has a bitter taste, and is said to improve the flavor of whatever is partaken of immediately after it. It is reported also that it gives to chronic inebriates a distaste for intoxicants.

11. *Kumera* (*Convolvulus Chrysorhizus, Soland*).—This is a native of New Zealand and yields tubers resembling those of the sweet potatoe. The tubers which were received from Kew have made as yet no progress. It is probable that the climate of Ootacamund is too cold to suit the plants, and I shall therefore transfer them to Coonoor and Barliyár.

12. *Arracha* (*Arracacia esculenta, &c*).—This is an umbelliferous plant, which inhabits the more mountainous tracts of the northern parts of South America. It is closely allied to the poisonous hemlock of Europe. The roots are divided into several fleshy lobes, each of which resembles the root of a carrot, and are said to have a flavor between a chestnut and a parsnip. The plants which have been raised of this esculent, are from tubers which were sent from Kew.

13. *Castilloa elastica.*—Thirty-one plants were distributed during the year to Mr. G. Murray of Hosúr in Salem, to Mr. H. P. Hodgson of Kolacambay, Coonoor, and Mr. W. Teare of Naduvatam. The stock in the Propagating house consists at the present time of eighteen healthy plants.

14. *Hevea Brasiliensis.*—Of this I have only one specimen. It is planted out at Barliyár, and during the last year grew eighteen feet.

15. *Manihot Glaziovii.*—This grows freely wherever it has been tried. At Barliyár there are many trees over thirty feet in height with a diameter at one foot above the ground of eighteen inches. The trees fruit abundantly, and produce good seed; but there is no demand for it on the part of the public.

16. *Landolphia florida.*—I am sorry to say that all the Government plants of this rubber-yielding climber are dead, but am glad in being able to report that the species is doing well at Nilambúr, where it is being grown under the auspices of Mr. T. J. Ferguson. A second unnamed species, which was sent from the Agri-Horticultural Gardens, Madras, is doing well.

17. *Carissa Macrophylla.*—This is another climber, which was reported last year might be expected to yield a valuable rubber. Mr. Gamble found it growing wild about Coonoor, and roughly tested its yielding qualities. It does not seem likely to be ever of much commercial importance.

18. *Jalap* (*Exogonium purga.*)—29,212 plants were sold last year to the public for the sum of Rs. 492-12-0 and 112 were distributed gratis.

19. *Cacao.*—This thrives well at Barliyár and the seeds germinate freely. There was no demand for plants during the past year.

20. *Mangosteen and Litchi.*—Both of these fruit trees bore heavy crops this year at Barliyár. It is to be regretted that these fruits are not more generally grown in Southern India. They would be a welcome addition to our meagre catalogue and ought to do well in many parts of the Presidency.

21. *Amherstia Nobilis.*—One plant, only six years old, of this magnificent Malacca tree flowered for the first time in Barliyár in March last.

22. *Potatoes.*—Half a ton of seed was imported from England in the early part of the season. A small portion of this stock was distributed, and the remainder planted in the gardens. The resulting crop has been a fair one and free from disease. A considerable quantity of tubers will be available for distribution next year.

23. *Paspalum Conjugatum.*—This is an excellent fodder for horses and cattle generally. In places where it takes kindly to the soil and climate it ousts the native grasses. It loves a wet climate and thrives best between the altitudes of 1,500 feet and 4,000 feet. I hope to be able to distribute seed of this next year from plants grown at Barliyár.

24. *Symphytum Asperrimum.*—Abundance of the better varieties of this fodder is to be had in the neighbourhood of Ootacamund, and it is odd that there should be such a widespread prejudice against its use. Grown in deep soil in more humid places, such as the sides of streams, it would produce a crop of most nutritious food for cattle all through the dry season.

25. *Lasiosiphon eriocephalus.*—This plant is nearly allied to the species of the same genus, which produces the Nepalese silk paper. It is extremely abundant on the Nílgiri plateau, and might I feel sure be used for the same purpose as its congener.

26. *Kolavayu (Helicteres Isora).*—The bark of this species yields a fibre of great strength and delicacy. It is used chiefly for making fishing nets by the natives on the West Coast, especially about Mangalore. The plant grows abundantly in the woods on the lower slopes of the Nílgiris and over the whole of the Wynaad.

27. *Cochin-China tuberous-rooted vine.*—Some tubers and a quantity of seed was presented by M. Alb. De Guigne, the French Consul at Madras. From these a large number of plants has been raised, which will be put out for experimentation in all the Government Gardens.

28. *Waras (Flemingia Grahamiana?).*—This is a strong herbaceous plant, belonging to the natural order Legumenosæ. It is extremely abundant on the grassy slopes of the Nílgiris and probably extends equally commonly all over the Wynaad. The leaves and especially the fruits are most frequently densely clothed with bright red glands, which when separated and made into a paste yield a beautiful reddish yellow dye. The following is an account of the way in which "Waras" is grown and manufactured in Arabia by Major Hunter, Resident at Aden. Major Hunter's note is extracted from a paper by Mr. W. T. Thiselton Dyer in the Pharmaceutical Journal of May 31st, 1884:—

Note on "Waras" collected at Harrav in February and March 1884.

"In the neighbourhood of the city "Waras" is not now raised from seed sown artificially, and it is left to nature to propagate the shrub in the surrounding terraced gardens. The plant springs up amongst jawari, coffee, &c., in bushes scattered about at intervals of several yards more or less. When sown as among the Gallas it is planted before the rains in March. If the soil be fairly good a bush bears in about a year. After the berries (pods) have been plucked the shrub is cut down to within six inches of the ground. It springs up again after rain and bears a second time in about six months, and this process is repeated every second year till the tree dies. Rain destroys the berry (pod) for commercial purposes, it is therefore only gathered in the dry season ending about the middle of March. The bush grows to a maximum height of six feet, and it branches close to the ground. The growth is open and the foliage sparse. Each owner has a few acres of land.

"In the middle of February 1884, the following processes were observed:—

"The leaves (? fruiting shoots) of some plants were plucked and allowed to dry in the sun for three or four days [the picking is not done carefully and a considerable quantity of the surrounding twigs, &c., is mixed with the berries (pods)]. The collected moss was placed on a skin heaped up to about six or eight inches high and was tapped gently with a short stick about half an inch thick. After some time the pods were denuded of their outer covering of red powder which fell through the mass on to the skin. The upper portion of the heap was then cleaned away, and the residual reddish green powder was placed in a flat woven grass dish with a sloping rim of about an inch high. The receptacle was agitated gently and occasionally tapped with the fingers, the result being the subsidence of the red powder and the rising to the surface of the chaffy refuse, which latter was carefully worked aside to the edge of the dish, and then removed by hand. This winnowing was continued until little remained but red powder. (No great pains are ever taken to eliminate *all* foreign matter). A rotl was sold in 1884 for about 13 piasters = 1 rupee 10 annas nearly.

"Waras is sent to Arabia, chiefly to Yemen and Hadhramaut, where it is used as a dye, a cosmetic and a specific against cold. In order to use it a small portion of the powder is placed in one palm and moistened with water, the hands are then rubbed smartly together, producing a lather of a bright gamboge colour which is applied as required."

There are several species of *Flemingia* growing on the Nílgiris and their slopes all of which produce the red glands, the richest of all being probably *F. Vestita var. Neilgheriensis.*

From inquiries which I have made, I cannot learn that anything like the preparation of "waras" is manufactured in Southern India, though I am informed by the coolies working on the Government Cinchona estate at Naduvatam that the plant is used in some places in the Wynaad for dyeing clothes.

29. *Bodu (Orobanche Nicotiana).*—Very rotten specimens of this parasite, which is so destructive to the tobacco crops, was sent me in the spring of last year, when I thought I identified it as *Orobanche (Phelipœa) Indica.* In this I was wrong as the examination of more perfect specimens, which I have since seen, show it to be the *Orobanche Nicotiana.* With respect to eradicating this pest, I could last year only suggest persistent hand-picking before it comes into flower, and I am unable now to add anything more to that suggestion.

Ootacamund,
15th September 1884.

(Signed) M. A. LAWSON,
Director.

—

Enclosures.

Meteorological Observations from April 1883 to March 1884 made on the Government Botanical Gardens, Ootacamund.

Months.	Maximum observed during the Month.	Rainfall. Inches.	Rainfall. Cents.	Days with Rain.	Days without Rain.
April 1883	70·18	4	03	8	22
May "	69·15	6	22	14	17
June "	68·10	3	12	18	12
July "	66·05	8	36	24	7
August "	66·21	6	04	22	9
September "	70·09	1	86	5	25
October "	65·26	10	43	22	9
November "	71·01	4	55	13	17
December "	70·25	4	09	9	22
January 1884	71·08	1	35	3	28
February "	71·26	..	..	..	29
March "	75·18	..	..	..	31
Annual mean ..	69·48	..	..	..	..
Total ..	..	50	05	138	228

Ootacamund,
15th September 1884.

(Signed) M. A. LAWSON,
Director, Govt. Gardens and Parks, &c.

RETURN of Seeds, Plants, &c., distributed from the Government Botanical Gardens, Ootacamund, Barliyár and Kalhatti, during the official year ending 31st March 1884.

Months.	Fruit Trees.	Value.	Timber Trees.	Value.	Ornamental Shrubs and Herbaceous Plants.	Value.
1	2	3	4	5	6	7
		RS. A. P.		RS. A. P.		RS. A. P.
April 1883	211	31 0 0	60	19 8 0	2,033	96 4 0
May ,, ...	..	..	15	4 0 0	133	42 4 0
June ,, ...	45	16 0 0	92	46 10 0	582	110 12 0
July ,, ...	4	2 0 0	270	68 8 0	48	42 4 0
August ,, ...	25	25 0 0	237	62 4 0	1,329	100 6 0
September ,, ...	..	..	121	41 14 0	188	83 12 0
October ,, ...	..	..	158	16 0 0	90	52 12 0
November ,, ...	..	..	23	6 12 0	91	29 0 0
December ,, ...	6	4 8 0	42	12 0 0	86	15 4 0
January 1884	45	21 12 0	125	37 8 0	180	17 10 0
February ,, ...	470	70 8 0	..	..	363	30 14 0
March ,, ...	28	10 0 0	306	33 9 0	25,921	584 14 0
Total ..	834	180 12 0	1,449	348 9 0	31,044	1,206 0 0

Months.	Packets of Vegetable, Flower and other Trees.	Value.	Bouquets and Cut-flowers.	Value.	Sundry Charges.	Total.
	8	9	10	11	12	13
		RS. A. P.	B. C. FRS.	RS. A. P.	RS. A. P.	RS. A. P.
April 1883	204	92 2 0	2 1	2 12 0	10 14 9	252 8 9
May ,, ...	143	88 1 3	11 7	18 12 0	4 9 3	157 10 6
June ,, ...	329	126 9 6	3 24	22 12 0	23 13 0	346 8 6
July ,, ...	228	92 9 6	7 15	23 2 0	35 8 4	263 15 10
August ,, ...	226	124 4 6	0 4	2 4 0	60 4 6	374 7 0
September ,, ...	166	37 6 6	2 6	6 14 0	37 0 0	206 14 6
October ,, ...	273	52 1 0	5 3	12 8 0	89 1 9	222 6 9
November ,, ...	86	31 8 0	0 1	2 0 0	39 14 0	109 2 0
December ,, ...	110	38 6 0	2 4	4 0 0	4 4 0	78 6 0
January 1884	88	35 5 0	1 0	2 8 0	63 4 9	177 15 9
February ,, ...	25	29 10 0	4 4	7 12 0	10 8 0	149 4 0
March ,, ...	236	91 7 9	1 1	3 8 0	39 4 0	762 10 9
Total ..	2,114	839 7 0	38 70	108 12 0	418 6 4	3,101 14 4

OOTACAMUND,
15th September 1884.

(Signed) M. A. LAWSON,
Director, Govt. Gardens and Parks, &c.

The following is a list of those who have been benefactors to the Gardens during the past year.

Date	From whom.	Particulars.
1st August 1883 ...	Agri-Horticultural Gardens, Madras.	12 packets of Eucalypti seed. 1 packet of Tristania conferta. 1 ,, of Catalpa Bignonioides.
1st September 1883.	Do. do. ...	32 packets of tree and shrub seeds.
24th ,, ,,	Do. do. ...	1 packet of Catalpa speciosa.
8th October ,,	Do. do. ...	66 packets of tree and shrub seeds.
24th November ,,	Do. do. ...	6 kinds of flowering plants.
24th March 1884 ...	Do. do. ...	1 packet of Juniperus Virginiana.
27th October 1883 ...	Christy and Co., Messrs., London.	12 beans of Maragogipe coffee.
3rd August ,, ...	Director, Government Cinchona Plantations and Parks and Gardens, Ootacamund.	1 packet of Kengia Notiviana.
11th August ,, ...	Do. do. ...	1 ,, of Convolvolus rufescens.
8th October ,, ...	Do. do. ...	6 plants of Ophiopogon indicum.
22nd November,, ...	Do. do. ...	1 packet of Impaticus, new sps.

List of those who have been benefactors to the Gardens during the past year—(*Continued*).

Date.	From whom.	Particulars.
24th November 1884.	Director, Government Cinchona Plantations and Parks and Gardens, Ootacamund.	1 packet of Smithia dichotoma.
24th ,, ,, ...	Dawson, Mr. H R., Madras ...	1 ,, of Tropæolum speciosum.
28th August ,, ...	Hewston, Dr., Manantoddy ...	5 kinds of flowering plants.
20th November ,, ...	His Excellency the Governor, Madras.	1 packet of Coprosma Baneriana.
7th January 1884 ...	Do. do. ...	A collection of tree and shrub seeds received from Kew.
13th May 1883 ...	Leishman, Mr. T., Ootacamund...	1 packet of Hop seed.
28th August ,, ...	Oakes and Co., Messrs., Ootacamund.	5 kinds of wheat.
27th October ,, ...	Parsons, Mr. A., Simla ...	A collection of flowering plants, Potentillas, Clematis, &c.
20th June ,, ...	Royal Gardens, Kew ...	1 packet of Rhus vernicifera. 30 lb. of carob.
25th July ,, ...	Do. do. ...	6 kinds of tree and shrub seeds.
4th August ,, ...	Do. do. ...	2 ,, do. do.
28th ,, ,, ...	Do. do. ...	2 ,, do. do.
11th December ,, ...	Do. do. ...	1 packet of Washingtonia filifera. 1 ,, of Salvia Columboræ.
25th October ,, ...	Royal Botanical Gardens, Ceylon.	A collection of tree and shrub seeds, 20 kinds.
15th November ,, ...	Roberts, Mr. J. F.	A collection of tree and shrub seeds, 68 kinds.
	Kew Nursery, Melbourne, Australia.	1 packet of Australian and New Zealand Fern Spores. A few Australian orchids.
5th February 1884.	Superintendent, Saharunpur Gardens.	A collection of Himalayan and other seeds, 24 kinds.
15th March ,, ..	Scott, Col. S. P., Ootacamund ...	A few Kolanut tree seeds.
2nd September 1883.	Underwood, Mrs., Manantoddy ...	1 plant of Modecca palmata.
30th November ,,	William and Brothers, Messrs. Ceylon.	2 kinds of Cinchona seed. 1 kind of Croton oil-seed. 1 ,, of Oncosperma fasciculata.

The following is a list of those to whom seeds or plants have been distributed during the past year.

Date.	To whom.	Particulars.
1st January 1884 ...	Agri-Horticultural Gardens, Madras.	1 packet of Fuchsia seed.
10th March ,, ...	Brown, Mr. Thos.	5 kinds of potato seed.
2nd October 1883 ...	Bidie, Brigade-Surgeon G., for the Calcutta Exhibition.	2 lb. of Taraxacum roots. 4½ lb. of Exogonum tubers. 9 lb. of Digitalis folio.
31st ,, ,, ...	Caine, Colonel, Ootacamund.	1 lb. of Carob seed. 1 oz. of Tagasata seed. 5 packets of Maize seed.
6th November 1883 ...	Cameron, Mr. J., Bangalore ...	1 lb. of Cypress seed.
2nd July 1883 ...	Dene, Rev. O., Ootacamund.	A collection of flowering plants.
20th February 1884 ...	Director, Government Cinchona Plantations, Ootacamund.	4 lb. of Frenela Rhomboidea seed. ½ lb. of Eucalyptus globulus seed.
25th March 1884 ...	Do. do.	8 lb. of Acacia melanoxylon seed.
10th ,, ,, ...	Director of Agriculture and Commerce, Cawnpore.	1 lb. of Acacia decurrens seed.

List of those to whom seeds or plants have been distributed during the past year—(*Continued*).

Date.	To whom.	Particulars.
6th March 1884 ...	Fursdon, Mr. C. A. T., Nellakóta.	6 plants of Rhea.
15th November 1883...	Honorary Secretary, Planters' Association, Yercaud.	100 Jalap tubers. 40 Peppermint plants. 1 lb. of carob seed. 4 oz. of black wattle seed. ½ oz. of Paspalum conjugatum seed.
9th July 1883... ...	Lone, Mr. A., Vayiri ...	4 plants of Ipecacuanha.
1st June ,, ...	Morgan, Mr. E., for the Botanical Gardens, Mannantoddy.	1 plant of Castilloa. 2 ,, of Mangosteen. 2 ,, of Nutmeg. 6 ,, of Clove. 1 ,, of Cinchona Carthagena.
2nd July ,, ...	Martin, Mr. G. R.	1 packet of white Rhododendron seed.
7th ,, ,, ...	Manakji Sarálji, Ahmednugger.	2 lb. of Sorghum seed, 2 kinds. 2 packets of Eucalypti seed, 2 kinds. 1 packet of Michelia Nilagirica. 21 packets of Eucalypti seed.
15th November 1883...	Murray, Mr. G., Hosúr ...	1 packet of Ceara rubber seed. 12 Jalap tubers.
9th July 1883 ...	Nock, Mr. N., Botanical Gardens, Ceylon.	6 packets of Eucalypti.
10th May ,, ...	Nagappah and Co., Messrs., Bangalore.	1 plant of Begonia. 2 plants of Fuchsia. 2 plants of Gymnogramma peruviana. A collection of tree, shrub and flowering plants.
8th December 1883 ...	Parsons, Mr. A., Simla ...	8 kinds of Acacia seed. 3 kinds of Eucalypti seed. 24 plants of Prickly confrey.
15th November ,, ...	Redley, Mr. M., Lucknow ...	6 oz. of Reana seed.
2nd July 1883 ...	Superintendent, Suttin's Estate, Kolacamboy.	
1st November ,, ...	Smith, Mr. E. A., Madras ..	2 oz. of Couch grass seed.
15th May 1883 ,, ...	Trimen, Dr., Ceylon	9 kinds of tree and shrub seeds.
1st November 1883 ...	Do. do.	A collection of tree, shrub, and flowering plants.
15th ,, ,, ...	Underwood, Mr., Mannatoddy.	3 kinds of vegetable seeds.
6th ,, ,, ...	Wyllie, Mr. S., Wynaad ...	1 oz. of Brazil cherry seed.
30th ,, ,, ...	William and Brothers, Messrs., Ceylon.	1 lb. of Acacia Dealbata seed. 2 lb. of Acacia Melanoxylon seed.
8th February 1884 ...	Do. do.	2 oz. of Acacia Decurrens seed. 1 oz. of Eucalyptus globulus seed.

Dr. STATEMENT showing the Receipts and Charges of the Government Botanical Gardens, Ootacamund, for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To Cash on hand	..	117 5 8		By Cash paid for salary of Curator, office, and fixed cooly establishment	5,817 12 6		62 3 6
,, do. being undisbursed pay	..	4 13 5				5,817 12 6	
			122 3 1	,, Temporary cooly establishment	3,766 8 9		
,, Amount realized by sale of plants, &c.	3,000 0 0	2,185 15 4				3,766 8 9	
,, Cash received from the Collector of Nílgiris on account of salary of Curator, office, and fixed cooly establishment	5,880 0 0	5,812 15 1	2,185 15 4	,, Draining the lower part of the gardens	448 0 0		
			5,812 15 1	,, Carting soil for filling disused roads and levelling the lawns	560 12 0		
,, Cash received from the Collector of Nílgiris, being amount sanctioned in G.O., No. 874, dated 5th July 1872	500 0 0	500 0 0		,, Formation of new roads and carting gravel ..	406 2 0		
				,, Planting grass	391 0 0		
Temporary establishment .. 3,000 0 0				,, Clearing brushwood and felling Eucalypti on the northern slope of the upper part of gardens ..	484 3 0		
Contingencies 1,000 0 0				,, Sundry works	59 13 0		
Amount sanctioned in G.O., No. 302, dated 6th March 1884, for new works 2,400 0 0						2,349 14 0	
			500 0 0	,, For purchase and freight, &c., of seeds and plants ..	699 8 10		
Add sale of produce credited in treasury 2,185 15 4						699 8 10	
	8,585 15 4			,, For cost of and writing labels for plants	53 2 0		
						53 2 0	
,, Cash received from the Collector of Nílgiris for contingencies and temporary establishment ..	..	8,665 10 10		,, For purchase of tools	115 2 0		
				,, Do. of water pots	59 0 0		
				,, Do. of flower pots	82 8 0		
			8,665 10 10	,, Do. of service stamps	37 0 0		
,, Amount paid by Accountant-General to Master Attendant for garden contingencies	..	33 12 11		,, Do. of office furniture	18 0 0		
			33 12 11	,, Do. of *Gardener's Chronicle*	14 6 0		
,, Amount transferred to the credit of Cinchona department for cost of seeds supplied	..	60 0 0		,, Do. of iron standards	55 0 0		
			60 0 0	,, On account of postage on banghies received, &c. ..	3 1 6		
,, Cash received from the Collector of Nílgiris on account of travelling allowance of the Curator to Sispara and Madras	..	155 0 0		,, Carriage and packing of plants	652 8 7		
				,, Carpenters' wages for the year	390 5 6		
			155 0 0	,, Bricklayers' do. do.	142 7 0		
,, Amount paid by the Collector of Nílgiris, being municipal assessment on the buildings of the Government Gardens	..	223 0 0		,, Sawyers' do. do.	62 11 7		
				,, Blacksmith and stonecutters' wages	8 12 0		
			223 0 0	,, For printing and binding charges	21 8 0		
,, Cash received from the Collector of Nílgiris, being part of Rs. 2,790 sanctioned in G.O., No. 1909, dated 9th May 1883, on account of cooly lines ..	..	911 9 2		,, Clothing for the two peons	26 0 0		
				,, Accountant-General to Master Attendant	33 12 11		
			911 9 2	,, To Cinchona department for seeds supplied ..	60 0 0		
				,, To the Curator, Government Gardens, being his travelling allowance to Sispara and to the Flower show at Madras	155 0 0		
				,, To the Collector of Nílgiris, being municipal assessment on buildings	223 0 0		
				,, Sundry charges	580 8 8		
						2,740 11 9	
				,, For the construction of cooly lines	911 9 2		
						911 9 2	
				,, Cash credited in treasury	2,185 15 4		
				,, Do. do. on account of stationery and printing	2 8 0		
						2,188 7 4	
				,, Cash on hand	142 8 1		
						142 8 1	
Total ..	17,965 15 4	..	18,670 2 5	Total ..	..	18,670 2 5	62 3 6

OOTACAMUND,
15th September 1884.

(Signed) M. A. LAWSON,
Director, Govt. Gardens and Parks, &c.

Dr. STATEMENT showing the Receipts and Charges of Sim's Park at Coonoor for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To cash received from the Collector of Nilgiris for contingencies and temporay establishment ..	1,600 0 0	1,583 7 5	1,583 7 5	By cash paid to gardeners and coolies employed during the year ..	1,156 4 5		
,, cash received from the Collector of Nilgiris, being amount sanctioned in G.O., No. 3896, dated 24th September 1883, for the fencing of Sim's Park ..	..	148 12 0	148 12 0	By cash paid for assessment and cooly lines ..	12 0 0		
				By cash paid for water pots ..	12 0 0		
				By cash paid to Messrs. Groves and Co. for fencing	148 12 0		
				By cash paid for pillar and step works	185 9 0		
				By cash paid to purchase of wood for Arbors, &c.	99 11 6		
				By cash paid for purchase of lawn-mower	72 8 0		
				By cash paid for sundry charges ..	45 6 6		
						1,732 3 5	16 8 7
Total ..	1,600 0 0	..	1,732 3 5	Total ..	..	1,732 3 5	16 8 7

Dr. STATEMENT showing the Receipts and Charges of the Government Botanical Gardens at Barliyár for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs. A. P.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To amount realized by sale of plants, &c.	600 0 0	134 14 0		By cash paid to gardeners and coolies employed during the year ..	322 0 0		
,, cash received from the Collector of Nilgiris for contingencies and temporary establishment ..	350 0 0	346 5 8	134 14 0 346 5 8	By cash paid for weeding ..	14 5 8		
				By cash paid for the repair of gardener's hut ..	10 0 0		
				By cash credited in treasury ..	134 14 0	346 5 8	3 10 4
						134 14 0	
Total ..	950 0 0	..	481 3 8	Total ..	..	481 3 8	3 10 4

Dr. STATEMENT showing the Receipts and Charges of the Government Botanical Gardens at Kalhatti for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs.
To amount realized by sale of plants, &c.	50	92 4 0	92 4 0	By cash paid to gardeners employed during the year	193 0 0	193 0 0	7
,, cash received from the Collector of Nilgiris for gardeners ..	200	193 0 0	193 0 0	By cash credited in treasury ..	92 4 0	92 4 0	
Total ..	250	..	285 4 0	Total ..	..	285 4 0	7

OOTACAMUND,
15th September 1884.

(Signed) M. A. LAWSON,
Director, Govt. Gardens and Parks, &c.

Dr. STATEMENT showing the Receipts and Charges of the Stonehouse Park, Ootacamund, for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To cash received from the Collector of Nilgiris for temporary establishment ..	600	591 7 0	591 7 0	By cash paid to gardeners and coolies employed during the year.	591 7 0	591 7 0	8 9 0
Total ..	600	..	591 7 0	Total ..	..	591 7 0	8 9 0

Dr. STATEMENT showing the Receipts and Charges of the Upper Norwood, Ootacamund, for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To cash received from the Collector of Nilgiris for contingencies and temporary establishment ..	1,000	1,000 4 6	1,000 4 6	By cash paid to gardeners and coolies employed during the year.	903 0 6		..
				By cash paid for purchase of tools	88 4 0		..
				By cash paid for sundry charges.	9 0 0		
						1,000 4 6	..
Total ..	1,000	..	1,000 4 6	Total ..	..	1,000 4 6	..

Dr. STATEMENT showing the Receipts and Charges of the Government Medicinal Gardens, Ootacamund, for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To amount realized by sale of Jalap tubers, &c. ..	650	688 13 0	688 13 0	By cash paid to gardeners and coolies employed during the year.	317 1 6	317 1 6	32 14 6
To cash received from the Collector of Nilgiris for temporary establishment ..	350	317 1 6	317 1 6	By cash credited in treasury	688 13 0	688 13 0	..
Total ..	1,000	..	1,005 14 6	Total ..	..	1,005 14 6	32 14 6

Dr. STATEMENT showing the Receipts and Charges of St. Stephen's Church, Hill Park, Ootacamund, for the official year ending 31st March 1884. *Cr.*

Receipts.	Budget Allotment.	Amount.	Total.	Expenditure.	Amount.	Total.	Unexpended Balance.
	Rs.	Rs. A. P.	Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
To cash received from the Collector of Nilgiris for temporary establishment.	100	72 8 0	72 8 0	By cash paid to gardeners employed during the year	72 8 0	72 8 0	27 8 0
Total ..	100	..	72 8 0	Total ..	..	72 8 0	27 8 0

OOTACAMUND,
15th September 1884.

(Signed) M. A. LAWSON,
Director, Govt. Gardens and Parks, &c.

Dr. **FINANCIAL STATEMENT** of the Government Botanical Gardens and Parks on the Nilgiris for the official year ending 31st March 1884 as compared with the Budget Estimate and Actuals of the last year. *Cr.*

Heads.	Receipts. Budget Allotment.	Actuals.	Actuals of last year.	Unexpended Balance.	Heads.	Expenditure. Budget Allotment.	Actuals.	Actuals of last year.	Unexpended Balance.
Government Botanical Gardens, Ootacamund.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	*Government Botanical Gardens, Ootacamund.*	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
To cash on hand on 1st April 1883 ..	..	117 5 8	268 4 0	..	By cash paid to Curator, office, and fixed cooly establishment	5,880 0 0	5,817 12 6	5,809 7 0	62 3 6
To cash on hand, being undisbursed pay ..	..	4 13 5	..	..	Rs. A. P.				
To amount realized by sale of plants, &c...	3,000 0 0	2,185 15 4	2,740 13 7	62 3 6	Temporary establishment .. 3,000 0 0				
To cash received from the Collector of Nilgiris on account of salary of Curator, office, and fixed cooly establishment ..	5,880 0 0	5,812 15 1	5,809 7 0	..	Contingencies 1,000 0 0				
To cash received from the Collector of Nilgiris, being amount sanctioned in G.O., No. 874, dated 5th July 1872	500 0 0	500 0 0	500 0 0	..	Amount sanctioned in G.O., No. 302, dated 6th March 1884, for new works .. 2,400 0 0				
Rs. A. P.					Add sale of produce credited in treasury 2,185 15 4				
Temporary establishment .. 3,000 0 0						8,585 15 4			
Contingencies 1,000 0 0					By cash paid to temporary coolies employed during the year	..	3,766 8 9	4,567 3 8	..
Amount sanctioned in G.O., No. 302, dated 6th March 1884, for new works .. 2,400 0 0					By cash paid to new works	..	2,349 14 0	..	..
Add sale of produce credited in treasury 2,185 15 4					By cash paid for cost and freight of seeds ..	500 0 0	699 8 10	874 13 8	..
	8,585 15 4				By cash paid for cost of and writing labels..	..	53 2 0	208 0 0	..
To amount received from the Collector of Nilgiris for contingencies and temporary establishment, &c.	..	8,665 10 10	6,988 3 8	..	By cash paid for contingencies and other charges	..	2,740 11 9	1,989 0 8	..
To amount paid by the Accountant-General to Master Attendant for garden contingencies	..	33 12 11	..	..	By cash paid for the construction of cooly lines	..	911 9 2	..	..
To amount transferred to the credit of the Cinchona department for seeds supplied.	..	60 0 0	..	..	By cash credited in treasury	..	2,185 15 4	2,740 13 7	..
To amount received from the Collector of Nilgiris for travelling allowance and municipal assessment	..	378 0 0	..	..	By cash credited in treasury on account of printing	..	2 8 0	..	..
To amount received from the Collector of Nilgiris for cooly lines	..	911 9 2	..	..	By cash on hand on 31st March 1884 ..	..	142 8 1	117 5 8	..
Total ..	17,965 15 4	18,670 2 5	16,306 12 3	62 3 6	Total ..	14,965 15 4	18,670 2 5	16,306 12 3	62 3 6
Barliyár Garden.					*Barliyár Garden.*				
To amount realized by sale of plants, &c. ..	600 0 0	134 14 0	383 10 9	..	By cash paid to gardeners and coolies employed	350 0 0	322 0 0	312 0 0	3 10 4
To cash received from the Collector of Nilgiris for contingencies and temporary establishment	350 0 0	346 5 8	333 6 3	3 10 4	By cash paid for sundry charges	..	24 5 8	21 6 3	
					By cash credited in treasury	..	134 14 0	383 10 9	..
Total ..	950 0 0	481 3 8	717 1 0	3 10 4	Total ..	350 0 0	481 3 8	717 1 0	3 10 4

Dr. Financial Statement of the Government Botanical Gardens and Parks on the Nilgiris for the official year ending 31st March 1884, &c.— (*Continued*). *Cr.*

Heads.	Receipts. Budget Allotment.	Actuals.	Actuals of last year.	Unexpended Balance.	Heads.	Expenditure. Budget Allotment.	Actuals.	Actuals of last year.	Unexpended Balance.
Kalhatti Garden.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	*Kalhatti Garden.*	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
To amount realized by sale of plants, &c. ..	50 0 0	92 4 0	17 14 0	..	By cash paid to gardeners employed ..	200 0 0	193 0 0	186 0 0	7 0 0
To cash received from the Collector of Nilgiris for temporary establishment ..	200 0 0	193 0 0	186 0 0	7 0 0	By cash credited in treasury	..	92 4 0	17 14 0	..
Total ..	250 0 0	285 4 0	203 14 0	7 0 0	Total ..	200 0 0	285 4 0	203 14 0	7 0 0
Stonehouse, Park.					*Stonehouse Park.*				
To cash received from the Collector of Nilgiris for temporary establishment ..	600 0 0	591 7 0	550 15 10	8 9 0	By cash paid to gardeners and coolies employed during the year	600 0 0	591 7 0	550 15 10	8 9 0
Total ..	600 0 0	591 7 0	550 15 10	8 9 0	Total ..	600 0 0	591 7 0	550 15 10	8 9 0
Sim's Park, Coonoor.					*Sim's Park, Coonoor.*				
To cash received from the Collector of Nilgiris for contingencies and temporary establishment	1,600 0 0	1,583 7 5	1,471 12 7	16 8 7	By cash paid to gardeners and coolies employed	1,600 0 0	1,156 4 5	1,210 6 7	16 8 7
To cash received from the Collector of Nilgiris, being amount sanctioned in G.O., No. 3896, dated 24th September 1883, for fencing of the Sim's Park	..	148 12 0	..	..	By cash paid for assessment on cooly lines ..	..	12 0 0	12 0 0	..
					By cash paid to Messrs. Groves and Co. for fencing	..	148 12 0	..	..
					By cash paid for lawn-mower	..	72 8 0	..	..
					By cash paid for sundry charges	..	342 11 0	249 6 0	..
Total ..	1,600 0 0	1,732 3 5	1,471 12 7	16 8 7	Total ..	1,600 0 0	1,732 3 5	1,471 12 7	16 8 7
Medicinal Gardens, Ootacamund.					*Medicinal Gardens, Ootacamund.*				
To amount realized by sale of Jalap tubers, &c., to the public	650 0 0	688 13 0	296 10 0	..	By cash paid to gardeners and coolies employed	350 0 0	317 1 6	320 7 9	32 14 6
To cash received from the Collector of Nilgiris for temporary establishment ..	350 0 0	317 1 6	320 7 9	32 14 6	By cash credited in treasury	..	688 13 0	296 10 0	..
Total ..	1,000 0 0	1,005 14 6	617 1 9	32 14 6	Total ..	350 0 0	1,005 14 6	617 1 9	32 14 6
Upper Norwood.					*Upper Norwood.*				
To cash received from the Collector of Nilgiris for contingencies and temporary establishment	1,000 0 0	1,000 4 6	1,179 7 6	..	By cash paid to gardeners and coolies employed during the year	1,000 0 0	903 0 6	1,139 12 6	..
					By cash paid for tools and sundry	..	97 4 0	39 11 0	..
Total ..	1,000 0 0	1,000 4 6	1,179 7 6	..	Total ..	1,000 0 0	1,000 4 6	1,179 7 6	..
St. Stephen's Church Hill Park.					*St. Stephen's Church Hill Park.*				
To cash received from the Collector of Nilgiris for temporary establishment ..	100 0 0	72 8 0	196 0 0	27 8 0	By cash paid to coolies employed during the year	100 0 0	72 8 0	196 0 0	27 8 0
Total ..	100 0 0	72 8 0	196 0 0	27 8 0	Total ..	100 0 0	72 8 0	196 0 0	27 8 0

OOTACAMUND,
15th September 1884.

(Signed) M. A. LAWSON,
Director, Govt. Gardens and Parks, &c.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following letter from the Director of Government Cinchona Plantations, Parks and Gardens, Nílgiris, to the Secretary to Government, Revenue Department, dated 15th September 1884, No. 259 :—

I have the honor to forward to you my report on the Government Gardens and Parks, Nílgiris, for the past year.

Order—dated 20th October 1884, No. 1155, Revenue.

Miscellaneous.

With the letter read above the Director submits his report for the year 1883-84 on the progress and condition of the Government Botanical Gardens and Parks on the Nílgiris.

2. Season.—The total rainfall registered during the year in the gardens at Ootacamund was 50·05 inches, being about 16 inches less than in 1882-83, though still slightly above the yearly average. Owing to the unusually severe frosts in January, many of the more tender plants in the gardens were injured, but the season was not on the whole unfavorable to horticultural operations.

3. Botanical Gardens, Ootacamund.—Many of the alterations and improvements advocated by the Director and approved by Government in reviewing the report for the previous year, were carried out in 1883-84. The swampy portions of the gardens were thoroughly drained, the lawns below the lower terrace levelled and re-grassed, the roads and walks remade, and the greater number of the trees and shrubs identified and labelled. No steps have yet been taken towards the establishment of an experimental kitchen garden or towards extending the scope of the meteorological observations taken daily at the gardens. The former suggestion has been delayed owing to the demand for labor in connection with more pressing improvements, while the latter proposal must await the purchase of the necessary instruments, an item of expenditure not provided for in the budget for the year. Of the special allotment of Rs. 2,790 for new cooly lines, Rs. 911 were expended during the year and the balance re-allotted at its close. Lines for fifteen coolies and their dependents have now been completed, which it is intended shortly to supplement by accommodation for ten more families.

4. The several buildings connected with the gardens underwent the usual repairs, including the lower conservatory, which is stated, however, to be in so bad a condition that it must soon become matter for consideration whether it should not be pulled down and removed to some more suitable part of the grounds. The propagating houses are also stated to be in bad condition and to need considerable alteration. It is observed that an expenditure of Rs. 522 was incurred on them during the first five months of the current year.

5. No information is furnished as to the progress of the catalogue of plants which was stated in the report for the previous year to be in process of compilation.

6. Government House Gardens.—Most of the work of reconstruction connected with these gardens has now been completed, and it only remains now to clear away the scrub which still disfigures some portions of the grounds and to plant them with ornamental trees.

7. Stonehouse Park.—Pending the completion of the building and road-making operations in connection with the Government offices, but little can be done for the improvement of this property. Many of the more unsightly trees have, however, been cut down and others planted in their stead. The Director urges the importance of protecting these young plantings from the ravages of stray cattle, but in view of the open nature of the estate, it is not easy to see how this is to be done at a reasonable cost. The exclusion of cattle at night would be a matter of very great difficulty,

while during the day the cheapest and most effectual plan would probably be to employ watchers for the purpose.

8. Church Hill and Crewe Hall Estate.—No special work was carried out during the year in connection with these properties. With regard to the latter, the Director remarks that proposals for its management and ornamentation will be submitted with his budget for 1885-86, but in the budget, which has since been received, no reference is made to the subject.

9. Sim's Park, Coonoor.—No new work was undertaken during the year. The usual repairs were carried out, and the lawn tennis ground lent to a private committee was re-included in the park, the committee having failed to complete the courts and fence them off as required. Most of the plants were named and are now in process of being labelled.

10. Barliyar Gardens.—The Government note the Director's belief that the unhealthiness of Barliyár has been exaggerated, and gather that he is no longer disposed to recommend the abandonment of the gardens there in favor of a possibly more wholesome locality. There can be no doubt that the climate is admirably adapted to the growth of certain species, and it has yet to be shown that similar results are attainable elsewhere.

11. Kalhatti Gardens.—In his present report the Director recommends the abandonment of the Kalhatti gardens in favor of a site to be selected in the neighbourhood of Gúdalúr. The reasons urged are that the climate and position of the Kalhatti gardens are so similar to those of Sim's Park, Coonoor, as to render the maintenance of the former unnecessary, and that an experimental garden at Gúdalúr, besides having the advantage of a different climate, could be easily supervised from Naduvatam. The suggestion is certainly worthy of consideration, and should the Director on further inquiry and consideration be still disposed to recommend the change, the Government will be prepared to receive favorably his matured proposals. The cost of a suitable plot of ground at Gúdalúr should be ascertained, and proposals should also be submitted for the disposal of the existing gardens at Kalhatti.

12. Herbarium, &c.—The Government note with pleasure the very great progress achieved by Mr. Lawson in the formation of a herbarium and the valuable assistance afforded him by various gentlemen, to whom the thanks of Government are due, towards the attainment of so important an object. The suggestion that a district museum of local products should be established in Ootacamund commends itself to Government, and the Director will accordingly be requested to work out the details of the scheme in communication with the Superintendent of the Government Central Museum, Madras, the Conservator of Forests, Northern Circle, and the Collector of the Nílgiris.

13. Special Products.—The cultivation of *Cinchona Carthagena* was carried on very successfully during the year. Of *Cinchona Santa Fé* but a single specimen remained in the propagating house in October 1883, and this plant, being in bad condition, was removed to the Botanical Gardens, where it has since made a very satisfactory growth and furnished no fewer than thirteen cuttings. About 250 seedlings of *Remijia Purdieana* (Cuprea bark) were raised during the year from seed obtained from Kew.

14. The different rubber plants under cultivation did well, for the most part, during the year, but the specimens of *Landolphia florida* at Barliyár, which were described as small and weak in the previous year, are now reported to have died. There can be little doubt, however, judging by the better results obtained by Mr. Ferguson of Calicut and the Agri-Horticultural Society of Madras, that this species will eventually be established in India. The Collector of Salem will be requested to ascertain and report the present condition of the plants of *Castilloa elastica* stated to have been sent to Hosúr.

15. The Government note the success which has attended the cultivation of *Cacao* at Barliyár. The creation of a demand for this plant, as well as for the mangosteen and litchi, is probably only a question of time, whereas in the case of Liberian coffee there would seem to be practical disadvantages attending its cultivation, which are likely always to outweigh its comparative freedom from leaf-disease.

16. Experiments with potatoes were continued with fair results, and two other descriptions of tuber (*Convolvulus chrysorhizus* and *Arracacia esculenta*) were introduced. Sufficient time has not yet elapsed to afford the means of judging as regards these latter experiments. Four plants of the Cola nut, which is stated to be eaten largely on the coast of Guinea, and a large number of plants of the Cochin-China tuberous-rooted vine, which is said to yield good wine, were raised from seed during the year. Nothing is stated as regards the growth of the Carob tree at Barliyár and Kalhatti.

17. The Government note the Director's remarks as regards *Paspalum conjugatum* and *Symphytum asperrimum*. It is presumed that further experiments are considered unnecessary in connection with the other fodder plants mentioned in previous reports.

18. Some information would have been interesting as regards the experimental cultivation of *Acacia decurrens*, which, it was stated in the previous year's report, was about to be commenced on a comparatively large scale by a gentleman near Coonoor.

19. Among other valuable plants introduced in the course of the year were the Japan lacquer plant, the Japan wax plant, and the *Quilaja saponaria* of Chili. An experiment with the *Yucca gloriosa* showed that it possessed saponaceous properties akin to those of the last-mentioned species. At Barliyár the beautiful *Amherstia nobilis* flowered for the first time.

20. The attention of the Director of Agriculture will be drawn to the very interesting note on *Flemingia Grahamiana* contained in paragraph 28 of Mr. Lawson's report, as also to paragraphs 25 and 29, the latter furnishing the true scientific name of the *bodu* parasite, and the former relating to *Lasiosiphon eriocephalus*, a congener of the *Daphne papyracea* or paper-shrub of the Himalayas, which yields the Nepaul silk paper said to be universally used in Kumaon and elsewhere for genealogical records, deeds, and other documents requiring unusual fineness and durability. As regards the Kol-naru (*Helicteres Isora*) the Government observe that from the experiments made by Messrs. Arbuthnot and Company, it would appear that this fibre is not suitable for weaving purposes.

21. The stock of *Ipecacuanha* plants increased largely during the year, and the Director states that there will be no difficulty in future in increasing indefinitely the number available for distribution. There was also a large increase in the number of jalap plants sold to the general public, showing that the cultivation of this drug is being rapidly taken up by private individuals. No mention is made, however, of *Taraxacum*, medicinal rhubarb, or *Hyoscyamus*.

22. The Government observe that the statements of receipts and charges appended to the report contain a number of unnecessary entries, especially under the head of receipts. There is no need to show as charges in an annual account prepared for submission to Government the sums paid into the treasury at different times, nor as receipts, the sums drawn therefrom for the purpose of meeting sanctioned expenditure. Only genuine cash transactions should appear in the account, the actual receipts from sale of plants, &c., being shown under receipts, and the actual charges incurred in the upkeep and improvement of the gardens under expenditure. The two statements appended to this order illustrate the transactions of the year on this principle, and the forms therein adopted should be followed in future in place of those hitherto in use. Mere book transactions such as that in the accounts submitted relating to a supply of seed from the Cinchona Department should be excluded altogether, and accordingly this item finds no place in the appended statements. It must be understood that expenditure must be strictly confined within the limits of the budget estimate and subsequent supplementary allotments (if any), and that receipts from sale of plants, &c., cannot be drawn against as distinct from the budget and other allotments, but must be paid into the treasury for credit to Government. Seeing that any balance remaining unexpended at the close of the year lapses to Provincial Funds, the entry of "cash in hand" is misleading, and is accordingly omitted in the appended statements.

23. The receipts of the year amounted to Rs. 3,104-6-4 against Rs. 4,300, the budget estimate, and Rs. 3,549-15-4, the actuals of the previous year. The falling off occurs under sale of plants, fruit, seeds, &c., at Ootacamund and Barliyár. The Government would be glad to know whether their suggestion of 1878-79 referred to in the orders reviewing the reports for the last two years has been acted upon up to date.

24. The charges amounted to Rs. 19,531-12-7, exceeding the budget estimate by Rs. 613-0-7 and the actuals for 1882-83 by Rs. 3,024-9-2. The excess over the budget would have been much larger but for a special allotment of Rs. 2,790 for cooly lines, only one-third of which was expended. Under "contingencies" in connection with the Ootacamund Gardens, Rs. 2,525-11-9 were expended against an allotment of only Rs. 1,000. Similar excess expenditure is noticeable under "temporary establishment" (including new works) and "acclimatization of foreign plants."

25. In conclusion, the Government have much pleasure in expressing their satisfaction with the progress achieved during the year; and note especially the Director's acknowledgments of the skill and energy displayed by the Curator, Mr. Jamieson, in carrying out his proposals, and of the hearty assistance rendered him by the rest of his officers.

(True Extract.)

(Signed) H. E. STOKES,
Secretary to Government.

To the Director, Government Cinchona Plantations, Parks and Gardens, Nílgiris.
„ the Director of Revenue Settlement and Agriculture.
„ the Board of Revenue.
„ the Accountant-General.
„ the Superintendent, Government Central Museum.
„ the Surgeon-General with the Government of Madras.
„ the Public Works Department.
„ the Financial Department.
„ the Honorary Secretary, Agri-Horticultural Society, Madras.
„ the Collector of Nílgiris.
„ the „ of Salem.
„ the Honorary Secretary, Wynaad Planters' Association.
„ the „ „ Yercaud „ „
„ the „ „ Nílgiri „ „
„ the Editors' Table.

APPENDIX.

Statement showing the Receipts of the Government Botanical Gardens and Parks for the Official Year ending 31st March 1884.

—	Actuals, 1882-83.	Budget Estimate, 1883-84.	Actuals, 1883-84.
	RS. A. P.	RS. A. P.	RS. A. P.
Government Gardens, Ootacamund.			
Sale of plants, seeds, &c.	2,740 13 7	3,000 0 0	2,185 15 4
Sale of old box	...	...	2 8 0
	2,740 13 7	3,000 0 0	2,188 7 4
Government Gardens, Barliyár.			
Sale of plants, fruit, &c.	383 10 9	600 0 0	134 14 0
Government Gardens, Kalhatti.			
Sale of plants, &c.	17 14 0	50 0 0	92 4 0
Government Medicinal Gardens, Ootacamund.			
Sale of Jalap tubers, &c.	407 9 0	650 0 0	688 13 0
Total ...	3,549 15 4	4,300 0 0	3,104 6 4

Statement of Expenditure on the Government Botanical Gardens and Parks for the Official Year ending 31st March 1884.

—	Actuals, 1882-83.	Budget Estimate, 1883-84.	Actuals, 1883-84.
	RS. A. P.	RS. A. P.	RS. A. P.
Pay of Curator	3,600 0 0	3,600 0 0	3,600 0 0
1. Travelling Allowance of Curator ...	...	...	155 0 0
2. Pay of Curator's office establishment ...	549 4 6	552 0 0	552 0 0
	4,149 4 6	4,152 0 0	4,307 0 0
Government Gardens, Ootacamund.			
1. Overseers and fixed cooly establishment.	1,660 2 6	1,728 0 0	1,665 12 6
2. Temporary establishment	4,567 3 8	5,400 0 0*	6,116 6 9
3. Acclimatization of foreign plants (G.O., 5th July 1872, No. 874)	874 13 8	500 0 0	699 8 10
4. Labelling of plants	208 0 0	...	53 2 0
5. Construction of cooly lines	...	2,790 0 0†	911 9 2
6. Contingencies	1,989 0 8	1,000 0 0	2,525 11 9
	9,299 4 6	11,418 0 0	11,972 3 0
Government Gardens, Barliyár.			
1. Temporary establishment	333 6 3	350 0 0	346 5 8
Government Gardens, Kalhatti.			
1. Temporary establishment	186 0 0	200 0 0	193 0 0
Government Medicinal Gardens, Ootacamund.			
1. Temporary establishment	320 7 9	350 0 0	317 1 6
Sim's Park, Coonoor.			
1. Temporary establishment and contingencies.	1,471 12 7	1,748 12 0‡	1,732 3 5
Stonehouse Park, Ootacamund.			
1. Temporary establishment	550 15 10	600 0 0	591 7 0
Church Hill Park.			
1. Temporary establishment	196 0 0	100 0 0	72 8 0
Total ...	16,507 3 5	18,918 12 0	19,531 12 7

* Including amount sanctioned in G.O., 6th March 1884, No. 302.
† Sanctioned in G.O., 9th May 1883, No. 1909.
‡ Including amount sanctioned in G.O., 24th September 1883, No. 3596.

Exd. W. J. Lewis.

200 Copies.

Govt. of {1884} Madras.

REVENUE.

Issued

Recd. Encl.

G.O., 20th October 1884, No. 1155.

OCTOBER.

Government Botanical Gardens and Parks, Nilgiris.

Report on — for 1883-84, reviewed.

30th November 1885, No. 1329, Revenue.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

Read—the following Report on the Progress and Condition of the Government Botanical Gardens and Parks, Nílgiris, for the Official Year 1884-85.

I have the honor to forward to you herewith my Annual Report on the progress and condition of the Government Botanical Gardens and Parks on the Nílgiris for the year 1884-85.

CONTENTS.

I. Staff of Officers.
II. Season.
III. General condition of the Gardens and Parks and improvements which have been made in them during the year.

(1.)—Ootacamund.

(*a*) Government Gardens.
(*b*) Government House Garden.
(*c*) Stonehouse Park.
(*d*) Church Hill Park.
(*e*) Crewe Hall Estate and adjoining grounds.

(2.)—Coonoor.

(*f*) Sim's Park.

(3.)—Barliyar.

(*g*) Experimental Garden.

(4.)—Kalhatti.

(*h*) Experimental Garden.

IV. Proposed New Gardens at

(*i*) Gúdalúr.
(*k*) Calicut.

V. Proposed Museum of Natural History in Ootacamund.
VI. Herbarium.
VII. Library.
VIII. Notes on some of the more interesting plants which have been introduced or grown in the Gardens during the year.
IX. Receipts and expenditure.
X. Miscellaneous information.

I. Staff of Officers.—The staff of officers remains the same as it was in 1883-84. From Mr. Jamieson, the Curator, to the lowest subordinate, all have shown the greatest care and diligence in their work.

With respect to Mr. C. McDonald, the Overseer for general works, and Mr. T. Burrows, the Overseer for the propagating houses and nurseries, I wish to point out that their pay is very inadequate for the responsible duties which they have to perform. Mr. McDonald receives only Rs. 35 per month while Mr. Burrows receives only Rs. 25. The duties they both have to perform require far more skill and intelligence than that required of a Sub-overseer in the Cinchona Plantations, yet the latter get Rs. 50 a month. I would urge the claims of these men.

With respect to the writer in the office, Ramanjulu Naidu, I have the same to urge. His duties are more arduous and his responsibility is greater than what is required of the second clerk in the office of the Cinchona Department, yet he receives Rs. 50 a month, while Ramanjulu Naidu gets only Rs. 30.

II. Season.—The weather during the past year was, with the exception of the months of October and November, unusually dry, and little or no planting could be attempted till the end of the former month. In October no less than 22·84 inches of rain were registered. More than half of this fell in two days, and the wash, which this heavy fall occasioned, was very great. The winter was comparatively mild and little harm was done by frost.

III. General condition of the Gardens and Parks or improvements which have been made in them during the year.—(1.)—Ootacamund—(*a*) *Government Gardens.—Upkeep.*—During the past year considerable alterations and improvements have been made in these gardens. The ground on either side of the entrance gate, and which for the last few years it would have been unwise to attempt to decorate, owing to the incomplete state of the works which were being carried on immediately about them, has been defined and will shortly be planted with shrubs and trees. The upper part of the gardens, which lies between Government House and Garden Cottage and bounded below by the new road, has been entirely re-made and planted with grass and shrubs. This portion of the gardens had always been in a rough and untidy condition and was last year rendered still more unsightly by the greater part of the turf having been removed for the purpose of grassing the parapet of the new road. The right-hand bank of this road on approaching Government House is so steep that no grass can be grown upon it and it will always remain as an ugly cliff of bare earth, unless something is done to hide it. I would recommend that these portions of the road should be built up with a loose revetment, similar to that which fronts the entrance at Government House. The cost of such a revetment would not be great and it would prevent the possibility of any landslips taking place. Such a revetment, too, could be covered with succulents or creepers. All the lawns in the gardens have now been levelled and the grass upon them is being gradually brought into better order. Last year the grub of the cock-chafer did a good deal of mischief to the grass, but this was remedied by top-dressing the injured portions with manure in the early spring. Now that the floor of the garden has been put to rights, I hope next year to re-establish the flower beds and shrubs which, during the time that the alterations were going on, had to be removed. The bund of the tank below the band-stand gave way during the heavy storm which occurred in October last. The destruction of the bund was due partly to the tank having been dredged too deeply and partly to trees having been planted upon it. The depth of the tank has now been lessened and made uniform and the bund has been restored and strengthened. Provision has been made for putting up a fountain next winter in this tank opposite to the band-stand.

I propose next year to commence making improvements which are much wanted in the upper part of the gardens.

Kitchen Garden and Herbaceous Ground.—Owing to the large number of works to be carried out during the past year, I regret to say that I found it quite impossible to do anything in the way of getting up either an experimental kitchen garden, or a garden for the cultivation of local wild herbaceous plants.

Nurseries.—The out-door nurseries have been quite filled with plants raised for the purpose of filling up the old demolished sholahs in the upper part of the gardens, and with plants raised from the seed which had been sent to us by various donors.

Next year I propose adding largely to these old nurseries in order to accomodate our constantly increasing stock of plants.

Forest of Blue-gum trees.—The forest of blue gums lying north of Government House and which formerly belonged to the Forest Department has been annexed to these gardens (*vide* G.O., No. 3002, dated 15th July 1884).

Buildings.—The conservatory on the lawn facing the entrance gates is in a very bad state of repair and will not last many years longer. To repair it thoroughly would cost a large sum of money, while all the plants which it now contains would have to be removed during the time that it was under restoration. I would, therefore, recommend that this house should be allowed to remain as it is until no longer serviceable and that it should then be pulled down and rebuilt on some other part of the gardens. If this building was removed from its present site there would be a continuous stretch of lawn from the entrance to the gardens to the band-stand tank.

The other conservatories and buildings are all of them in a fair state of repair.

(*b*) *Government House Garden.*—All works connected with the buildings of the Government House and adjoining offices having been completed, it was possible last spring to begin gardening operations. The lawns at the back of the house have been improved, while the slopes in front, below the new terraces, have been cleared of scrub and re-grassed. This part of the ground has also been planted with clumps of trees and shrubs; the former with the view of eventually taking the place of those which now exist and which, I am sorry to say, are in such an unhealthy state that they will not last many years longer.

A neat and spacious green house has been built for the purpose of growing decorative plants, with which it will be gradually furnished. The remaining parts of these gardens are being prepared for their adornment during the present year.

(*c*) *Stonehouse Park.*—The grass land immediately about the new building was cleared of weeds and such trees as were either dying or as obstructed views were cut down and others planted in more suitable places. The trees owing to the lateness of last year's season were not planted till October; they were, however, well established in baskets before being put out and afterwards carefully protected during the spring droughts. They are now for the most part doing well; a few of them have been destroyed by cattle, which either strayed or were deliberately sent by the villagers of Old Ooty to graze in the park at night; and until it can be afforded to fence the whole of the land, young trees and shrubs will always be liable to damage from this source. Nothing has yet been done in the way of planting shrubs immediately about the new buildings as the surrounding ground is still in the hands of the Public Works Department. All building operations, however, will shortly be finished, so that this year we may hope to get this portion of the park planted up also.

(*d*) *Church Hill Park.*—During the past year the usual upkeep and nothing more has been carried on.

(*e*) *Crewe Hall Estate and adjoining Grounds.*—Nothing during the past year was done to ornament these grounds owing partly to finding it difficult to provide the necessary labor and partly to the consideration that it would be of little use to do anything in the way of planting until a substantial fence had been placed all round the ground, as these estates have, during the last two years, become a common grazing ground for bullocks, sheep and goats. During the present year, I hope to see it fenced and planted.

2. Coonoor—(*f*) *Sim's* Park.—The upkeep has been satisfactorily maintained. Some damage was done to the roads, paths and bridges during the heavy rains of last autumn, but nothing more than could be repaired by the laborers employed in the park. A bridle road is being made through the new sholah which was last year annexed to the park. This will afford a pleasant ride for such as desire to pass from Coonoor to Wellington. It was first proposed to make this into a carriage instead of into a bridle road; but the cost of the former proposal was found to be too great to be incurred at present and the idea was therefore abandoned. All the more important trees and shrubs have been labelled.

New Nurseries.—These are intended chiefly for raising a stock of shŏlah trees which grow on the Coonoor ghât and have been made upon the abandoned tennis ground.

3. Barliyar—(*g*) *Experimental Garden.*—This garden was of late years becoming overgrown with worthless coffee, oranges, pomeloes, &c., and which were cramping many of the more valuable trees. I have had all these cleared away, and I have also cleared of secondary jungle, about an acre of ground, which had hitherto been left uncultivated. This will give a sufficiency of room for planting out new introductions for some years to come. Most of the trees are flourishing; they have all been identified, and I have ordered that they shall have a zinc tally, with a number punched on it, attached to each. This, in the hot climate of Barliyár, will be more lasting than the usual painted label, and it will at the same time be much more economical.

4. Kalhatti—(*h*) *Experimental Garden.*—Nothing of any importance has been carried out during the year in this garden. The *Cinchona morada* and *verde* seedlings which were put out last year have done very badly; the dry climate evidently did not suit them. In my last year's report I stated that I doubted if it was worth the while of Government to continue the cultivation of this garden, and I am now still more of the opinion that it is not.

IV. Proposed new Garden at—(*i*) *Gúdalúr.*—In connection with the proposed establishment of a garden at Gúdalúr, I have been in communication with the Karistan of the Raja of Nilambúr, who owns all the land in that neighbourhood, and I find it would be possible to acquire a plot of ground on a lease not exceeding 99 years at the very moderate rate of 8 annas an acre per annum. I would propose that 5 acres of ground be taken up on a lease of not less than 50 years.

(*k*) *Calicut.*—With respect to the establishment of a garden at Calicut, I have written to the Collector of Malabar, Mr. Logan, asking him kindly to ascertain what suitable ground could be acquired, and when I hear from him, I will go to Calicut and select that which seems to me the best site. I think that as in the case of the garden at Gúdalúr, 5 acres of land will be sufficient.

V. Proposed Museum of Natural History in Ootacamund.—In my report of last year, I asked if Government would be inclined to sanction the establishment of a small museum in Ootacamund, which should contain typical collections of objects of interest to those living on the Nílgiri plateau and in the Wynaad, and I further stated that I thought such a museum should take in all the chief branches of Natural Science —Botany, Zoology, Geology, Mineralogy and Ethnology. Government, in paragraph 12 of their G.O., dated 20th October 1884, No. 1155, Revenue, reviewing my report approved of the suggestion and they accordingly requested me to work out the details of the scheme in communication with the Superintendent of the Government Central Museum, Madras, the Conservator of Forests, Northern Circle, and the Collector of the Nílgiris.

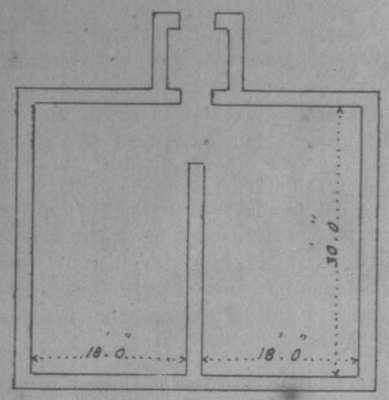
Owing to the absence from the Hills of one or other of the above appointed Committee, no meeting was held until the 18th of last month. I then explained what I considered should be the scope of the museum, and I produced a plan of a building which I thought would be sufficiently large to contain all such collections as might be acquired during the first few years of the museum's existence, and I pointed out that the building, which I proposed, would admit of being indefinitely extended. With respect to the scope of the museum, I urged upon my colleagues that it would be desirable that at first the collections should be confined to such objects only as would be of interest to the ordinary well-educated and intelligent resident, European or Native, and that complete collections of everything existing in the district which would be serviceable only to specialists should be allowed to stand over to a future day. These propositions, however, met with their most decided disapproval. They were unanimous in thinking that the scope which I proposed was far too narrow, and that instead of commencing with a small building and adding to it as occasion might require, a large museum should be built at once, which would accommodate a perfect collection of all natural history objects.

Seeing that we were of such very opposite views as to what ought to be done, I asked Doctor Bidie, Mr. Burrows and Mr. Gamble to put upon paper the views which they had advanced in the discussion. This they have kindly done, and I annex a copy of the report which they have drawn up on the subject.

Report by Doctor Bidie, Mr. Burrows and Mr. Gamble.

In accordance with the order of Government conveyed in paragraph 12 of G.O., Revenue Department, No. 1155 of 20th October 1884 (Board's Proceedings, No. $\frac{3903}{\text{Forest } 393}$ of 17th November 1884), we met at Mr. Lawson's office on the 18th August 1885.

Mr. Lawson submitted to us his proposed plan of a museum building, 30 feet × 36 feet, without offices of any kind. We considered that such a small house would not meet the intention of Government, nor suffice for the objects of a provincial museum, as understood by us, viz, that it should contain such a representative collection of local specimens as would make it at once attractive and instructive to the public, for whose benefit it would be started and maintained. We are of opinion that it would be quite insufficient to hold the collections which would adequately represent the Botany, Zoology, Geology, Mineralogy and Ethnology of this interesting district, and that it would be necessary to provide a room of larger size for the exhibits as well as a work room for an Assistant in charge, who might very usefully be a taxidermist such as Dr. Bidie thinks could be found for a comparatively small monthly salary. We are informed that a local museum was once before started in Ootacamund and proved a failure, because it was not established on a scale or managed in a manner to make it interesting and useful to the public.



Mr. Gamble represented that in order to make an interesting show of the woods, fibres, oils, barks, fruits and other vegetable products of botanical or economic interest in the district, considerable space would be wanted, for the district and Wynaad contained such a varied flora ranging in level from that of the sea to over 8,000 feet and in comparative moisture from 23 inches (Coimbatore)* to 112 inches (Calicut).* He would hope that the museum might be made the means of fostering the use of indigenous timbers for building and construction, and of bringing to more general local notice woods and forest products of economic value. Government is always sending specimens to Exhibitions abroad and at the Presidency and it often happens that products while known at a distance are little known in their own home. The collection that would show all that it is right to exhibit would be by no means one of so little amount as Mr. Lawson seems to think. Nor is the zoological field less rich or varied.

* The nearest place on either side of which he could find record.

Dr. Bidie pointed out that a collection of birds, of which the most common and most interesting should be stuffed and exhibited with their eggs and nests, would take considerable space, more especially as in such a district as this the game birds, always interesting where there is a large European community, are mostly of comparatively large size. So, too, a collection of the mammalia would be incomplete and devoid of interest if the game of the district were not well represented, and even such large animals as the bison and sambur would require to be shown and prove most interesting to visitors, for few people have any idea of their size, especially of that of the former. The reptiles, land shells and fish would also take up a good deal of room and so would the insects, if properly shown. Altogether he considered the space proposed to be quite inadequate to represent the branches of natural science which it is proposed to illustrate, not to mention economical products.

Mr. Burrows, while agreeing in the opinions of Doctor Bidie and Mr. Gamble, considered that in order to make a museum in Ootacamund a useful and successful institution and to ensure its permanency, it should be so arranged and managed as to prove an attraction to the public and a credit to the station. It should be accessible both to mere visitors and to learners and should be one of the public institutions of Ootacamund. In this we were all agreed. Ethnological collections, it was thought, in a district where there are several aboriginal races who might be likely to decrease in numbers rather than increase and to change perhaps their mode of life, would also be of real interest and require some space and some care in arrangement.

Then there would be a necessity for a series of specimens properly representative of the coffee, tea, cinchona, fibre and other industries of the district and Wynaad, and though Mr. Lawson thought that a small box of a few feet square would properly represent all that was useful to show as regards coffee, the rest of the meeting did not agree with him and thought that unless such subjects were thoroughly and well, perhaps even copiously, represented as regards the soil, growth, varieties, diseases and products of manufacture, the collection would be of but little interest and planters would not care for it.

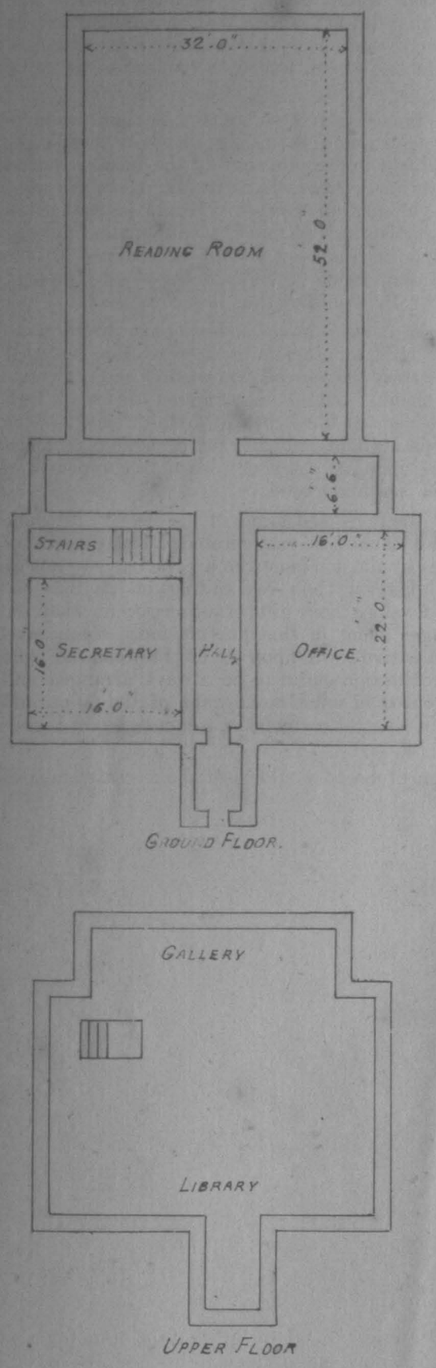
Then the Gold-mining industry and the various though not very extensive mineral products including the building stones, &c., require to be shown, and though perhaps in themselves they would not take up much room, yet they would add to the sum total of the space required and for this a wall space of 130 feet would be totally inadequate. And in Mr. Lawson's proposed room with three-feet cases, the space for the circulation of visitors would be reduced to merely 12 feet × 6 feet in each room. We were further agreed that if a museum be instituted in Ootacamund—as all were of opinion should be the case—it should be confined to the display of local products, and its aim should be that which in his address to the Biology section of the British Association at Swansea in 1880, Dr. Günther thus described :—

"The principal aim of a Provincial Museum ought, in my opinion, to be popular instruction. I do not mean that it should be merely a place for mild amusement and recreation, but that it should rank equal with all similar institutions destined to spread knowledge and cultivate taste among the people. To attain this aim it should contain an arranged series of well preserved specimens representing as many of the remarkable types of living forms as are obtainable ; a series of useful as well as noxious plants and animals ; of economic products derived from the animal and vegetable kingdoms ; and last (but not least) a complete and accurately named series of the flora and fauna of the neighbourhood.

"The direct benefit of a complete collection of the flora and fauna of the district, in which the Provincial Museum is situated, is obvious and cannot be exaggerated. The pursuit of collecting and studying natural history objects gives to the persons who are inclined to devote their leisure hours to it, a beneficial training for whatever their real calling in life may be ; they acquire a sense of order and method ; they develop their gift of observation ; they are stimulated to healthy exercise. Nothing encourages them in this pursuit more than a well named and easily accessible collection in their own native town upon which they can fall back as a pattern and an aid for their own. This local collection ought to be always arranged and named according to the plan and nomenclature adopted in some monograph of the fauna and flora of the country ; and I consider its formation in every Provincial Museum to be of higher importance than a collection of foreign objects."

No such small room as that which Mr. Lawson proposed would meet the circumstances of the case as thus defined.

We are strongly agreed that if a museum is started it should be in a building worthy of it ; that it should be constructed at once of sufficient size, but that cabinets might be made by degrees as collections were available. Dr. Bidie gave it as his opinion, in which Messrs. Burrows and Gamble were disposed to agree, that a building of the style of the Nilgiri library would probably prove sufficient if rearranged as regards the rooms. There should be a work room for the assistant in charge and a store and packing room at any rate. The library was visited in order to see what the size and arrangements were and a rough plan is given opposite. The arrangement seems well suited to a museum, the light is good and there is no reason why the large room should not have the gallery continued round it so as to display cases for insects, &c. Such a building would, of course, cost a great deal more than Mr. Lawson's proposed one, but it is our opinion that if the museum is not a good one, in a suitable building, contributors will not be easily persuaded to assist, its permanency will be doubtful, and it will not be, what it should be, a place of instruction to the public. Mr. Lawson's scheme would practically merely add a small museum to his office. Government has fine sites now for such a building in and about Stonehouse Park and the Government Gardens, quite near to Mr. Lawson's office, and if only the funds can be provided and the building started at once under the auspices of His Excellency the Governor, we feel sure it will be a success. The great interest taken by the native community in such institutions and especially in the fauna of the country is well known from the statistics of the Museums of Calcutta and Madras and of the Calcutta Zoological Gardens, and we feel sure that our Ootacamund Museum (which it may be hoped will prove a model for similar museums in other groups of districts such as were recommended by the Government of India in recent orders) will prove equally attractive.



We would remark that it may possibly be considerably utilized in assisting the work of technical education for which the Director of Public Instruction is, we believe, now preparing a scheme under the orders and approval of Government.

There should be in the museum a small library of works of local interest, and the maps of the district should be exhibited on the walls for easy reference.

The orders of Government desire us to "work out the details of the proposed Museum with Mr. Lawson," but as we differ at the very outset from Mr. Lawson in our conception of what the museum should be, we are forced to submit this note, which we do through Mr. Lawson in order that he may obtain the orders of Government on the first point which has to be considered—the size, arrangement and scope of the proposed museum.

I have said above that I disagree with the views put forward by Dr. Bidie, Mr. Burrows and Mr. Gamble, and I therefore now pass on to point out what I conceive to be some of the more important errors of judgment contained in their report. Mr. Gamble thinks that all woods which grow in the country from Coimbatore to the uttermost parts of the Wynaad would prove of interest and instruction to the public,

and that therefore all these should be exhibited; and he says, what is no doubt perfectly accurate, that such a collection would occupy a very considerable space. I dissent to Mr. Gamble's assertion that such a collection would be of great interest to anybody and for the following reason. Of the larger number of trees which grow in the above-mentioned district very little is known about the value of their timber, and to exhibit woods simply because they are woods without giving any information respecting them would be useless. I should prefer that at first a collection should be exhibited of such woods only about which we already possess some knowledge, and that the remainder should be added as Mr. Gamble or others become better acquainted with their properties. Again, with respect to the exhibition of fibres, oils, barks, fruits, &c., which it would be possible to bring together during the next few years, they would, I am persuaded, occupy a much smaller amount of room than is supposed by Mr. Gamble.

Dr. Bidie seems to me to err in wishing to see a Provincial Museum established upon the scale of a Metropolitan Museum. I would leave out for the present at any rate all such large animals as the elephant, the bison and the sambur, not because I think they would be of no interest to the public, but because they would take up room which could be more profitably utilized. I would observe again that all reptiles, with the exception of a very few, when prepared for exhibition pack into a very small compass. With respect to land shells and insects, except in the case of the more noticeable and commonest species, it is a mistake to keep them constantly exposed to the light, as they rapidly fade. They ought to be preserved in shallow glazed cases; and a complete collection of these branches of zoology would probably occupy no more room than what is represented by a couple of ordinary chests of drawers.

Mr. Burrows thinks that to insure the permanency of the museum it should be arranged and managed so as to prove an attraction to the public and a credit to the station, and to this end he would desire, with his colleagues Dr. Bidie and Mr. Gamble, to have a considerable space put at his disposal for the purpose of exhibiting specimens of the different aboriginal races who live upon the Hills, and who they say are likely to decrease in number and to change their mode of life.

I presume by this that they would exhibit specimens of Todas, Kurumbas, Kotas, Irulas and other tribes, together with the ordinary implements which they use in domestic life. Such a collection would no doubt be exceedingly interesting, but yet the interest be out of all proportion to the cost of establishing it. I would therefore let this branch of ethnology stand over to a future day like the elephant and the bison.

With respect to the room which would be required for exhibiting the chief points of interest connected with the coffee and tea industries they were shocked at the smallness of the amount which I proposed to allow. They would have everything copiously represented, while I would limit the quantity of each object to the smallest dimensions, compatible with its being instructive to the sightseer. Instead of a barrel of coffee, I would exhibit a pint of the berry in a bottle; and instead of a chest of tea, I would exhibit a quarter of a pound in a tray.

Next they quote an extract from Doctor Günther's well-known and admirable address on the subject of provincial museums and then say that "no such small room as that which Mr. Lawson proposed would meet the circumstances of the case as thus defined." This is quite true, but as the rooms which I proposed were never intended to hold complete collections, but only such as might be acquired during the first few years of the museum's existence, the observation is beside the mark. And, again, Dr. Günther is writing of what should be done in a country, the natural history of which is fully known, and where monographs of the different branches of natural history have been already drawn up; but this is not the case in India.

With their report Dr. Bidie, Mr. Burrows and Mr. Gamble give a plan for a building such as they think would be suited for the purpose of a provincial museum when finally stocked with its complete collections. To this plan I object, first, that it is unsuited in its construction and that it is wasteful of its space; secondly, that the cost of the building would be excessive; and thirdly, even if the two former propositions could not be proved, I object most strongly to the principle that we, who live now and as yet know most imperfectly all of the branches of the natural history of our district and therefore cannot possibly be fully acquainted as to the amount of room

which will be required when our knowledge of them is more perfect, should saddle our successors with a building that may prove eventually to be inconvenient in construction or size.

It seems to me that it would be far better that we should begin with a small building of a construction of such a sort as is acknowledged by all authorities to be free from any radical defect, and which at the same time is capable of indefinite extension, than that we should block up all possibility of escape if our big building should prove faulty.

It was prominently stated at the meeting of the Committee, though this is not alluded to in the report, that one great advantage of expending a large sum of money upon a big building would be that, if hereafter the museum should fall into bad management, it would be more difficult for a hostile Government to abolish it than would be the case if its initial cost was less. To this I have to remark that I do not believe that any Government would be hostile to any well-managed museum, even if it was a small one, and that if it is not well managed, then the more hostile the Government is to it the better. Doctor Bidie, Mr. Burrows and Mr. Gamble say it is their opinion that, "if the museum is not a good one, in a suitable building, contributors will not be easily persuaded to assist, its permanency will be doubtful and it will not be what it should be, a place of instruction to the public. Mr. Lawson's scheme would practically merely add a small museum to his office." I entertain no doubt about being able to get plenty of assistance from contributors, even though they should be informed that their benefactions would be housed in a four-thousand-rupee museum and not in one which would cost forty thousand.

With respect to such a museum as I propose to build being merely an annex to my office, I would observe that it is true that I stated the museum should be in close proximity to the Government Gardens, inasmuch as I would, if Government approved, assume the chief control over its management. It seems to me that the Director of the Government Gardens will be always the person resident in Ootacamund, who is most likely to have had a previous training in the management of museums. But as to its being merely an addition to my office, such a preposterous notion never for a moment entered into my head. Of what possible use could collections of animals, of minerals and of Todas be in the office of the Government Botanist? An office collection of vegetable products brought together for the purpose of enabling the head of the department to identify and name specimens of plants or plant produce must be kept solely for that purpose and be absolutely distinct from all such collections as may be provided for the public entertainment.

This last point is one upon which I must particularly insist, as I find that in this country there are still those who think that the two purposes may be fitly combined. An office collection ought to contain every thing that may be required for thoroughly identifying any vegetable product that may be sent from any part of India, while the provincial museum should contain, as I said in my last year's report, such specimens only as would be illustrative of its particular district. So far then as the botanical part of the provincial museum goes, it would be the overflow of the office collection.

Whether or no a museum of natural history would subserve the purposes of technical education, I am not able to forecast; but I do not see that any relation necessarily exists between such a museum and a school where the principles or the art of manufacturing goods is to be taught, though of course with all their aspirations in the matter of technical education I fully sympathise.

Having now criticised the above report, I pass on to offer a plan for a museum and a scheme for its management, which I think will be found much more suitable than those proposed by Dr. Bidie, Mr. Burrows and Mr. Gamble, and one which I think might serve as a model for all future Provincial Museums in the Presidency.

The objects for which specimens from the different branches of natural history are collected are three, viz:—

(1) Collections made for the instruction of students in schools and colleges.
(2) Collections made for the use of specialists.
(3) Collections made for the instruction of the general public.

The first consists of a comparatively small number of carefully collected specimens, which are intended by the teacher to illustrate his lectures. Each teacher will make his own selection, and any collection, made for him by another person, will be

comparatively worthless. With a collection of this sort, neither a Provincial nor a Metropolitan Museum has anything to do.

The second ought to take in every species and variety of all groups of plants, animals, minerals and geological objects which are to be found in the district. They should be so arranged that any specialist, wishing to study them, may have easy access to them. These, however, should not be exhibited to the general public, to whom the great majority of the specimens would be not only of no interest, but by their number would serve only to bewilder them. Complete collections of birds, shells, butterflies, beetles, for instance, should be packed in cabinets and not stuffed and arranged, as too often used to be done, in cases, occupying the greater part of the body of the museum.

The third kind of collection, viz., that which may be profitably exhibited for the instruction of the general public, is a small one when compared with that which is required for the specialist. Only those objects which are met with more or less in every day life should be exhibited—these ought to be carefully chosen, so as to show the chief points of interest about them, and they ought to be accompanied with descriptions clearly describing what these points of interest are.

Any museum then, which is established, should be so arranged as to meet the wants of the specialist and the general public, and certain definite rules have been adopted by all who have had experience of museums in England. These rules are—

(1) The construction of the building ought to be such that there will be, in those rooms which are furnished with glazed cases, no cross lights passing through them.

(2) The construction ought to be such that as much as possible of the wall and floor space of the museum may be available for cases and cabinets.

(3) The building ought to be of an unpretentious character, and free from all useless ornamentation. This, too, in order that money may not be lavished upon what is useless, but be wholly expended upon the, by no means uncostly, furniture and upon the collections.

(4) The building should be so arranged that it may be added to whenever occasion may require.

Now the plan which I offer below is the simplest expression of what a museum can be, which shall fulfil all the conditions enumerated above. Each block forms a perfect museum and consists of two oblong-rooms each lighted by four large windows on one side only. The whole of the remaining walls are available for cases, while in the centre of each room there is space for glazed counters for the exhibition of objects of interest to the general public; again underneath these cases there is room for the drawers and cabinets, which would contain the collections provided for the specialists. Whenever one block of buildings becomes overcrowded, all that is necessary in order to increase the accommodation is to break an opening in the blind end of the block and add a second series of rooms to this end; and this it is evident may be repeated indefinitely. All museums in this country ought to be built facing north and south.

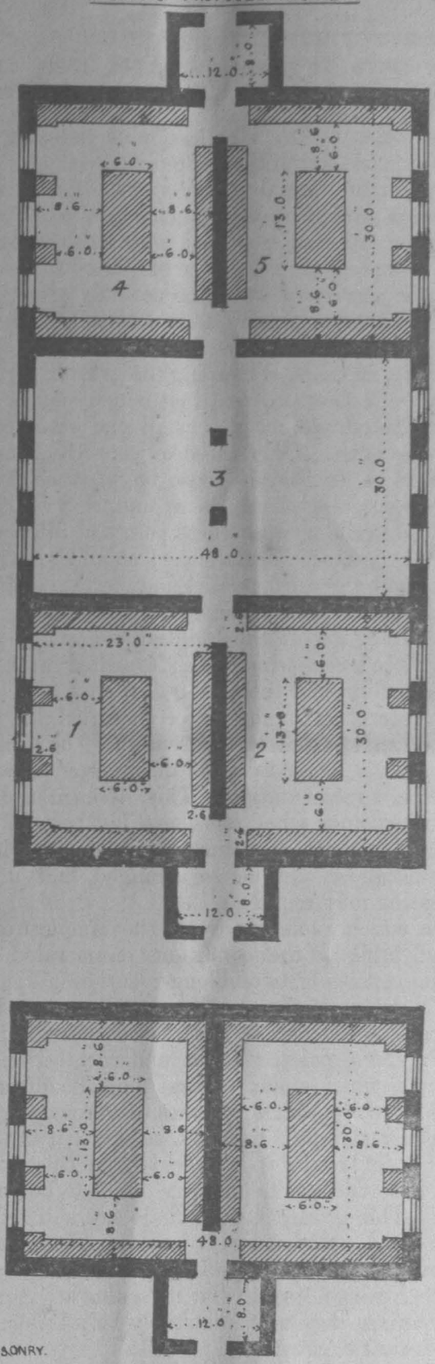
Management.—This is what I venture to say will be found the greatest difficulty attending the successful establishment of provincial museums. It is not reasonable to expect that Government or Municipalities will go to the expense of providing highly-trained Curators. Nevertheless if the museums are not supervised by persons who have had some training, they will inevitably be a failure. To guard against this I throw out the following suggestion.

The Apothecaries, who are attached to dispensaries in provincial towns, have often, I believe, a considerable amount of leisure time and they have all of them had a scientific education. Might not some of these, who have shown a predilection for the study of natural history, receive some special instruction in the management and arrangement of museums under the direction of the Superintendent of Central Museum at Madras, and then, by adding a small increment to their salaries, obtain the services of these gentlemen? This, it appears to me, would be the most economical and not an unsatisfactory way of attempting to dispose of the difficult question of supervision.

All such specimens as require, for their mounting or preparation, the hand of an expert, would be most conveniently obtained from the Central Museum of the Presidency, or from any person in the neighbourhood who may make taxidermy his profession. By this arrangement a permanent taxidermist could be dispensed with.

The provincial museums ought not to be regarded as distributing bodies, though, of course, they should be able to supply things special to their district, when called upon to do so by the Superintendent of the Central Museum at Madras.

PLAN OF PROPOSED MUSEUM



No. 2.

No. 1

NOTE. BLACK DENOTE MASONRY.
HATCHING DO. CASES.

SCALE 20 FT. = 1 INCH

NOTES ON THE PLAN.

In plan No. I is the kind of building which I propose should be put up to begin with. It contains two rooms, each 30 feet × 23 feet, and the walls to the spring of the roof 13 feet. In the plan only three windows are shown, there ought to be four each $4\frac{1}{2}$ × 9 feet.

No. II represents the Museum when fully completed in future years.

The arrangement of the specimens would be as follows:—

In room .. ..
1. Botany.
2. Zoology.
3. Large specimens, *e.g.*, elephant, bison, &c., mounted on stands, and not enclosed in cases.
4. Ethnology.
5. Geology and Mineralogy.

The cost of building No. I would be about Rs. 5,000, and to fit it up properly with cases would cost at least another Rs. 2,000.

Lastly, no institution of this kind can be expected to keep up uniform excellence unless it is from time to time inspected by a superior officer, and I would, therefore, suggest that it might very properly become a part of the duties of the Superintendent of the Central Museum to inspect and report from time to time upon all the provincial museums in the Presidency.

The views which I have expressed above, respecting the structure, arrangement and management of museums are not crude notions. They are the views of all who in England have given to this subject their serious attention, and are the outcome of those numerous meetings and discussions which took place at the British Association and elsewhere during the last decade.

VI. HERBARIUM.—The number of plants contained in the herbarium has been considerably increased during the past year, partly through collections made by myself in different parts of the Presidency and partly by collections sent by others. The thanks of Government are especially due to the following gentlemen for gifts of plants.

(1) *Mr. Gamble, Conservator of Forests, Northern Circle,* has been the chief contributor. The specimens which he has presented to the herbarium rank with the finest I have ever seen, for not only have they been superbly dried, but they always contain just those portions of the plant which are essential for its proper illustration. I am indebted also to Mr. Gamble for much information concerning the plants, which he has sent, in their living state, and I am still further indebted to him for having named certain genera for me with which he was himself specially well acquainted.

(2) *Mr. Talbot, Deputy Conservator of Forests in the Bombay Presidency,* for a very interesting collection of plants which he had made in the Northern Concan. The flora of this region, owing to its contiguity to the Madras Presidency, has a special interest for us. Mr. Talbot's plants have been well preserved and for the most part named.

(3) *Mr. J. Cameron, Curator of the Lal Bagh, Bangalore,* has sent several collections of plants growing in his neighbourhood.

(4) *Mr. Bourdillon,* for a selection of plants made in the neighbourhood of Trivandrum.

(5) *Mr. Hollingsworth, Apothecary and Assistant to the Professor of Chemistry in the Presidency College,* for specimens of named rare and critical species from the neighbourhood of Ootacamund and Madras.

(6) *Mr. Wedderburn, Assistant Collector,* for plants gathered in the neighbourhood of Devála and the Wynaad.

(7) *Captain Quentin Agnew,* for plants collected in the neighbourhood of Madras and also for a few collected about Quetta.

(8) *Sir Joseph D. Hooker, Director of the Royal Gardens, Kew,* for another consignment of named specimens from Dr. Wight's herbarium which was forwarded by him to Madras, and consisting chiefly of orders belonging to Calycifloræ and Corollifloræ. All these have been arranged and interpolated with those received the year before. This collection is now as extensive as it is valuable, and has been of great assistance to me in identifying the plants of the country.

The room, in which the herbarium is at present accommodated, is becoming inconveniently crowded, and I would therefore ask to be allowed to convert the old cinchona laboratory into a new repository for it. This building is dry and roomy, and the alterations which would be requisite would not be costly.

If Government approve of this suggestion, I will send in plans and estimates at once, as the alterations ought to be carried out during the next dry season.

VII. LIBRARY.—Only Rs. 42-15-3 were expended upon books last year, as it was thought that if the proposal to transfer the Madras herbarium to Ootacamund is carried out, a considerable saving might be effected by transferring also such botanical works as relate to purely descriptive botany.

VIII. NOTES ON SOME OF THE MORE INTERESTING PLANTS WHICH HAVE BEEN INTRODUCED OR GROWN IN THE GARDENS DURING THE YEAR.

1. Erythroxylon Coca.—Two big bushes of this plant exist at Barliyár where they grow freely, but fruit sparingly. About 60 young plants have been raised from seed and a large number of cuttings were put down during the winter, but these have not done well. It may be taken as certain that *Erythroxylon coca* will thrive well in many

parts of Southern India, and that it may be easily propagated from seed, but that it will be profitable for the European planter to grow it upon a large scale is a matter upon which I entertain much doubt. Vast tracts of country in South America are cultivated with this plant, and an almost unlimited quantity of leaves may be obtained from that country for the purpose of manufacturing the valuable alkaloid *Cocaine*. Last winter this alkaloid is said to have fetched 2*s*. 6*d*. per grain. At this price, could it have been maintained, its cultivation would have been productive of enormous profits, but the price has since declined to 7*d*. per grain, and it is very unlikely that even this sum will be realized much longer. In this opinion Mr. Thiselton Dyer concurs, and he moreover wrote a short time ago to caution me against being too sanguine that the cultivation of Coca would be a commercial success, or advising me at any rate to discount very largely the reports which had been spread abroad about it.

Mr. Hooper has analysed three samples of the leaves taken from the bushes at Barliyár. In his first attempt to isolate the alkaloid in a crystalline state he was unsuccessful; in his second attempt he succeeded in obtaining the alkaloid as crystalline, but with an admixture of some acrid principle which rendered it useless as an anæsthetic; his third attempt ended in complete success, and the alkaloid manufactured by him has been used and approved of by Dr. Brockman in his surgical ophthalmic operations. Surgeon-General Doctor Furnell reports that the simple chewing of the leaves is productive of relief in cases of spasmodic bronchial coughs, and suggests that *Cocaine* should enter into the composition of cough lozenges. Mr. Hooper's analyses show that the leaves of the bushes grown at Barliyár are very rich in the alkaloid, as he extracted from them $\frac{1}{2}$ per cent.

2. *Erythroxylon monogynum.*—The leaves of this plant are said to have been largely eaten during the famine by the natives of several districts where it grew wild in abundance, and it was thought probable that the leaves of this plant might be found to contain an alkaloid with properties similar to that which is obtained from the *Erythroxylon coca*; and Dr. Cornish just before he left India wrote to ask me to have the subject investigated. As the plant does not grow upon these Hills, I applied to Mr. Gamble for his assistance, and he has sent me several small consignments of the leaves, which had been collected and dried by Mr. Higgins, Deputy Conservator of Forests in the Cuddapah District. These consignments I handed over to Mr. Hooper, who, after his analyses of them, reports that they contain no anæsthetic property at all analogous to that which is found in *Erythroxylon coca*; but that they do contain a bitter and a tonic principle which may have mitigated the pangs of starvation.

3. *Taraxacum officinale.*—Sir Joseph D. Hooker in the Flora of British India observes that—"It is remarkable that this common Himalayan plant should not be found in the Khasia or Nílgiri mountains even as a garden escape." This reproach to these Hills is now removed, and the aggressive dandelion may be found advancing in all directions about Ootacamund. It bids fair to cover our lawns with its yellow blossoms as in England, while in the deeply tilled soil of the cinchona estates such an abundance of it with roots 18 inches long could be collected as would supply the wants of all the Medical Departments in India.

4. *Medicinal Rhubarb.*—There are a few plants of this herb in the gardens at Ootacamund and in Sim's Park at Coonoor, but they have not thriven as well as could be wished. I shall try this plant under varying conditions during the next year in the hope of obtaining better results.

5. *Hyoscyamus.*—This valuable medicinal plant, which can be grown very well upon these Hills, has not been raised in any quantities on account of all demand for it having ceased.

6. *Eucalyptus Globulus and other species.*—During the year 20 lb. of the oil of the leaves of the *Eucalyptus globulus* were sent to the Madras Medical Department. The last consignment was sold at the rate of Rs. 3-3-0—5 shillings per pound being the wholesale English quotation.

The processes required for the manufacture of the oil are very simple and inexpensive, and I think it is a pity that those who have large plantations of these trees should not endeavour to utilize them for this purpose as well as for fuel. The way to extract the oil is as follows:—

The young shoots, having perfectly matured but not old leaves, are passed through an ordinary chaff-cutter and cut into chips not exceeding one inch in length; the smaller the chips the more readily is the oil extracted from them. These chips are then macerated in water over night and put the next morning into a still, which is kept boiling, till the greater part of the fluid has past over as vapor. This is then shaken up with a little common salt to cause the complete separation of the oil from the water; the oil is then decanted from the water and passed through a sheet of filtering paper, when it is ready for sale.

Instead of passing the leaves through a chaff-cutter, it would be better to pass them through some crushing machine, as the object is to smash up the hard cells, which surround the cavities into which the oil is passed by the secreting cells. I do not know of such a machine, but I should think that some modification of the old-fashioned mangle would prove effective.

Eucalyptus obliqua, *E. siderophloia*, *E. piperita*, and other sweet-smelling varieties, all of which are said to yield valuable oils, grow freely on these Hills; they are much more beautiful in their general aspect and their timber is greatly superior to that of the *E. globulus*.

7. *Rhus glabra.*—This is a febrifuge yielding plant, the seeds of which were sent from Kew. The seeds have germinated.

8. *Ipecacuanha.*—I regret to have to report that I lost a considerable number of *Ipecacuanha* plants during the last year. This was owing to my having forced the stock too rapidly during the winter. The number of plants, however, is being again increased as fast as possible and special care will be taken to prevent the recurrence of last year's catastrophe. I have been much disappointed with the growth these plants have made at Barliyár during the past year. That the Ipecacuanha will eventually prove a success I entertain no doubt, but I have to confess that I have still a good deal to learn about the best ways of cultivating it.

9. *Joannesia* (*Anda*) *Gomesii.*—This is a handsome tree, growing to the height of 50 or 60 feet and belongs to the natural order *Euphorbeacæ*. It is a native of Brazil where the bark is said to be used "as a certain remedy for diarrhœa brought on by cold," while the seeds are reported to possess powerful but safe purgative properties. I received seeds of this tree last autumn from Mr. Cameron, Curator of the Lal Bagh, Bangalore, who writes word that it flourishes well there. The seeds have germinated and young plants raised from them.

10. *Acacia homalophylla.*—This is the tree which produces the Australian violet wood. A small specimen fruited sparingly for the first time last year in the Government Gardens in Ootacamund. The climate here, however, seems to be rather too cold for its full development, but I should think that at elevations ranging from three to four thousand feet it would thrive well and might prove an important addition to our timber trees.

11. *Box.*—This at an elevation from 5,000 to 7,500 grows more vigorously than I have ever seen it do in Europe, and I have planted a small plot of ground near the Jail on the Dodabetta estate with the view of finding out if it may not be profitably grown to supply the wood engraver's trade.

12. *Castilloa elastica.*—The few plants of this rubber yielding tree, which were put out two years ago at Barliyár, are growing grandly.

Last winter I went down at the request of Major Campbell Walker, Conservator of Forests, Southern Circle, to inspect the nursery of Castilloas which had been formed in Mr. Ferguson's garden and to advise how they might be best increased. I found the plants in beautiful condition and growing vigorously and I was able to take from them about 150 excellent cuttings. These I planted myself in pots and plunged them in beds of soil which were also made under my direct supervision, and I gave minute instructions as to how they should be treated. Since that time it has been reported—*vide* G.O., No. 766, dated 25th June 1885, relating to a letter from Major Campbell-Walker—that although my instructions had been followed carefully, not a single cutting took root.

This is odd, for when the same instructions are carried out in the Government Gardens at Ootacamund the failures are less than 5 per cent. of the cuttings planted. The failure at Calicut would appear to have been due to a want of judgment in watering the cuttings in their early stage, before the cut ends had calloused over.

When the side shoots are used as cuttings, difficulty has often been experienced in getting the plants raised from these to form a leader and grow upright; they generally sprawl along the ground. To obviate this it is only necessary to cut the young plants back to about a foot from the ground when side shoots will be formed, any of which will of themselves produce a leader.

13. *Ceara.*—This fruits freely at Barliyár and the seed appears to be eaten by birds and deposited in the neighbouring jungle, for young plants have been found growing where they never had been planted by man. If this is so, we may look forward to the Ceara rubber tree becoming a denizen of our ghât forests.

14. *Mangosteens.*—These fruited very well last year at Barliyár and are again this year promising to yield a large crop. The Mangosteen is an extremely beautiful tree and gives a very dense shade. It ought to be grown all over the Presidency.

15. *Litchi.*—This too fruited freely last year at Barliyár; it grows readily from seed and like the Mangosteen deserves to be better known than it is at present.

16. *Carob tree.*—This thrives well both at Barliyár and at Kalhatti, but in both places the trees bear staminate flowers only.

17. *Acacia decurrens.*—This tanning yielding acacia is being grown successfully at Coonoor by private persons, and, I believe, also by Mr. Gamble. It grows fairly well at Ootacamund, but does not fruit. This is due probably to the wet gloomy weather coming at the time when it begins to flower. I have seen it growing magnificiently on the Palni hills where it flowers and fruits freely.

18. *Mahogany.*—Two casks of mahogany seed which had been received by the Kew authorities from Jamaica have just arrived in excellent order. I have distributed all but a few pounds of it; the greater amount going to the Forest Department and to the Agri-Horticultural Gardens at Madras.

19. *Edible Prickly-pear from Cyprus.*—Living specimens were sent to the Government Gardens at Ootacamund by the Director of Agriculture and Revenue Settlement last winter. The fruit had been highly recommended by Dr. Bonavia, Civil Surgeon, Etawah, North-Western Provinces, who thought it might be advantageously grafted upon the wild worthless prickly-pear of the plains. The plants arrived in fair condition and have been planted out at Kalhatti where they are doing so well that it does not seem at all likely that it will be ever necessary to have recourse to grafting them upon the wild plants.

20. The following plants mentioned in my last year's report are all doing well:—

Rhus vernicifera or the Japan Lacquer plant.
Rhus succedanea or the Japan wax plant.

Quilaja saponaria.—The latter was put out last year in the Government Gardens at Ootacamund. It was untouched by the winter frosts and is now more than six feet high.

The *Kumera Aracha* and *Cochin-China tuberous rooted vine* have also been planted out and are doing well.

21. *Waras.*—I was asked last year by Mr. Thiselton Dyer to obtain information for him about this dye. This I have done, and from specimens which I sent to Kew *waras* turns out to be the produce of *Flemingia Grahamiana* and *F. congesta*. With respect to the distinctive characters of these two species, I pointed out that after studying the plants in their living condition, I did not think them sufficiently constant to allow of the two species being kept separate, and in this opinion both Mr. Thiselton Dyer and Professor Oliver now concur. The *waras* yields a beautiful dye when applied to animal substances such as silk or wool, but it is inferior as a dye when used for the purpose of coloring vegetable products such as cotton or linen. Mr. Thiselton Dyer has kindly obtained for me a London expert's opinion upon the value of *waras* and I regret to say that it is not such as is likely to lead one to believe that it will ever become an object of commercial interests. I may mention that when I was in Madras last winter, I saw at the Agri-Horticultural Garden's flower-show a specimen of *waras* in a native dyer's collection which was being exhibited, and from which it would appear that *waras* is not unknown as a dye in India.

22. Mr. T. Hanbury has sent some three hundred packets of seeds from his garden in Italy. Most have germinated, and I shall hope to report upon the more interesting species next year.

IX. RECEIPTS AND EXPENDITURE.—*Receipts.*—The receipts for the last year amounted to Rs. 2,077-12-1 and were derived from the following sources:—

		RS.	A.	P.
Sale of plants and seeds for the—				
Government Gardens in Ootacamund		1,792	2	10
Do.	in Barliyár	175	14	9
Do.	in Kalhatti	14	8	0
Do.	in Jalap tubers	7	14	0
Do.	in Blue-gum oil	87	4	6
	Total ...	2,077	12	1

The budget estimate was Rs. 4,300. There has therefore been a decrease in the receipts of Rs. 2,222-3-11, or less than half of what was expected has been realized. This is due partly to the small demand there was during the year for plants and partly to a large number of plants having been distributed gratis, which in former years would have been paid for.

Expenditure.—The total expenditure for the year has been Rs. 24,574-12-7 and is detailed thus:—

	RS.	A.	P.
Government Gardens, Ootacamund	18,597	9	6
Do. Barliyár	488	5	2
Do. Kalhatti	334	14	0
Medicinal Gardens	315	4	4
Sim's Park	1,820	8	5
Stonehouse Park	962	4	3
Church Hill Park	97	13	0
Upper Norwood	1,958	1	11
Total ...	24,574	12	7

The budget estimate was Rs. 25,450-8-0; a saving therefore has been effected of Rs. 875-11-5

X. MISCELLANEOUS INFORMATION.—(1) *Catalogue of Plants.*—A list of all the plants, which have been identified in the several Government Gardens, has been made. But no catalogue of them has been printed, but if Government should approve, this might be done next winter.

(2) *Establishment of a stall at weekly markets for the supply and wants of the local planters, gardeners, &c.*—This was proposed two years ago, but it does not now seem necessary to establish such a stall, as everybody, from the European residents to Badaga and Canarese gardeners, apply direct to the office at the Government Gardens for all such seeds and plants as they may require.

(3) *Value of Nilgiri peat as fuel.*—During the past year I have paid some attention to the manner in which peat is formed on these Hills and have experimented upon it, with the view of finding out what its value as a fuel may be. The peat on these Hills is formed entirely from plants belonging to the sub-kingdom *Phanerogamia* such as sedges and other marsh loving plants. There are no mosses which enter into its composition as is commonly the case in the northern and more temperate regions.

The value of the peat as a rule is very inferior to that found in northern countries, and this is apparently due not to any inherent badness of the plants which go to form the peat, but to the great admixture of inorganic substances which are blended with it. The cause of this admixture is due to the amount of soil which every year is carried down from the Hills during floods and spread over the surface of the peat forming swamps. There is, however, some which is very good, notably that which is commonly sold as fuel in Ootacamund by General Baker. This is little if at all inferior to the peat, which is obtained from the bogs of England, Scotland or Ireland. But of this good quality there is, so far as my investigations have gone, a very limited quantity.

(Signed) M. A. LAWSON,
Director.

Return of Seeds, Plants, &c., distributed from the Government Botanical Gardens, Ootacamund, Barliyár and Kalhatti, during the Official Year ending 31st March 1885.

Months.	Fruit Trees.		Timber Trees.		Ornamental Shrubs and Herbaceous Plants.	
	Number of Plants.	Value.	Number of Plants.	Value.	Number of Plants.	Value.
1	2	3	4	5	6	7
		Rs. A. P.		Rs. A. P.		Rs. A. P.
April 1884	..	..	72	18 0 0	285	36 9 0
May ,,	..	..	12	3 0 0	51	12 1 0
June ,,	9	3 4 0	302	53 8 0	680	108 2 0
July ,,	40	10 0 0	191	49 6 0	341	65 12 0
August ,,	8	2 0 0	20	5 4 0	137	34 2 0
September ,,	41	6 8 0	..	..	132	38 11 0
October ,,	30	6 4 0	66	22 8 0	235	57 14 0
November ,,	138	34 8 0	64	16 12 0	670	45 14 0
December ,,	..	..	120	34 8 0	162	18 8 0
January 1885	..	..	..	..	88	20 12 0
February ,,	10	2 8 0	..	..	1,158	77 2 0
March ,,	..	..	149	38 8 0	32	10 14 0
Total ..	276	65 0 0	996	241 6 0	3,971	526 5 0

Months.	Vegetable Flower and other Seeds.		Bouquets and Cut-flowers.			Sundry Receipts.	Total.
	Number of Packets.	Value.	Number of Bouquets.	Number of Cut-flowers.	Value.		
8	9		10	11	12	13	14
		Rs. A. P.			Rs. A. P.	Rs. A. P.	Rs. A. P.
April 1884	204	62 0 6	..	3	3 15 0	9 5 9	129 14 3
May ,,	279	73 5 0	9	17	21 6 0	8 2 0	117 14 0
June ,,	266	53 12 0	4	10	17 15 9	17 14 0	254 7 9
July ,,	205	62 11 9	3	4	8 14 0	48 12 3	245 8 0
August ,,	170	39 4 6	..	3	3 4 0	79 10 6	163 9 0
September ,,	105	22 12 3	2	28	32 10 0	35 4 9	135 14 0
October ,,	257	63 3 9	4	11	16 4 0	67 1 6	233 3 3
November ,,	118	38 15 9	..	6	0 12 0	42 8 0	179 5 9
December ,,	77	17 10 0	3	..	4 8 0	16 12 6	91 14 6
January 1885	22	7 5 0	2	1	4 4 0	17 7 6	49 12 6
February ,,	93	47 9 9	..	..	..	50 11 0	177 14 9
March ,,	183	78 1 6	1	5	14 2 0	69 8 4	211 1 10
Total ..	1,979	566 11 9	28	88	127 14 9	463 2 1	1,990 7 7

Meteorological Observations from April 1884 to March 1885, on the Government Botanical Gardens, Ootacamund.

Months.	Rainfall. Inches.	Days with Rain.	Days without Rain.
April 1884	3·35	7	23
May ,,	5·20	12	19
June ,,	5·14	16	14
July ,,	1·87	12	19
August ,,	6·88	21	10
September ,,	3·03	17	13
October ,,	22·84	25	6
November ,,	10·22	21	9
December ,,	4·89	9	22
January 1885	...	...	31
February ,,	...	...	28
March ,,	·27	4	27
Total ...	63·69	144	221

Ootacamund,
5th September 1885.

(Signed) M. A. LAWSON,
Director.

Statement showing the Receipts of the Government Botanical Gardens and Parks for the Official Year ending 31st March 1885.

	Actuals, 1883-84.	Budget Estimate, 1884-85.	Actuals, 1884-85.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Government Gardens, Ootacamund.			
Sale of seeds, plants, &c.	2,185 15 4	3,000 0 0	1,792 2 10
Government Gardens, Barliyár.			
Sale of plants, fruits, &c.	134 14 0	600 0 0	175 14 9
Government Gardens, Kalhatti.			
Sale of plants, &c.	92 4 0	50 0 0	14 8 0
Government Medicinal Gardens, Ootacamund.			
Sale of jalap tubers, &c.	688 13 0	650 0 0	7 14 0
Total ...			1,990 7 7
Add value of drugs supplied to the Indian Medical Department, Madras	...	...	87 4 6
Grand Total ...	3,101 14 4	4,300 0 0	2,077 12 1

Ootacamund,
15th September 1885.

(Signed) M. A. LAWSON,
Director.

Statement of Expenditure on the Government Botanical Gardens and Parks, Nílgiris for the Official Year ending 31st March 1885.

Particulars.	Actuals, 1883-84.	Budget Estimate, 1884-85.	Actuals, 1884-85.
	Rs. A. P.	Rs. A. P.	Rs. A. P.
Pay of Curator	3,600 0 0	3,600 0 0	3,600 0 0
Travelling allowance of Curator	155 0 0	..	..
Pay of Curator's office establishment	552 0 0	552 0 0	550 7 10
Total ..	4,307 0 0	4,152 0 0	4,150 7 10
Government Gardens, Ootacamund.			
Overseer and fixed cooly establishment	1,665 12 6	1,728 0 0	1,693 3 11
Temporary establishment	6,116 6 9	3,000 0 0	2,995 2 4
Acclimatization of foreign plants (G.O., No. 874, dated 5th July 1872).	699 8 10	500 0 0	500 0 0
Labelling of plants	53 2 0	550 0 0	415 14 11
Construction of cooly lines (G.O., 5th May 1884, No. 1848). ..	911 9 2	1,879 0 0	1,831 10 2
Contingencies	2,525 11 9	1,000 0 0	1,447 7 5
New works, Drainage	..	1,477 8 0	1,424 10 7
Horticultural implements	..	700 0 0	712 7 7
Painting of the conservatory green house and repairs to propagating house.	..	600 0 0	593 9 8
Cutting down and uprooting Eucalyptus and Acacia on the northern slope of the garden.	..	520 0 0	519 14 6
Purchase of meteorological instruments	..	200 0 0	108 3 0
Herbarium establishment	..	792 0 0	776 0 0
Purchase of cabinets and materials	..	800 0 0	785 15 4
Library	..	1,200 0 0	42 15 3
Repairs of certain damages done to the Gardens (*vide* G.O., No. 5719, dated 17th December 1884).	..	..	599 15 0
Total ..	11,972 3 0	14,946 8 0	14,447 1 8
Government Gardens, Barliyár.			
Temporary establishment	346 5 8	490 0 0	488 5 2
Government Gardens, Kalhatti.			
Temporary establishment	193 0 0	340 0 0	334 14 0
Government Medicinal Gardens, Ootacamund.			
Temporary establishment	317 1 6	350 0 0	315 4 4

Statement of Expenditure on the Government Botanical Gardens and Parks, Nílgiris, for the Official Year ending 31st March 1885—(*Continued*).

Particulars.	Actuals, 1883-84.	Budget Estimate, 1884-85	Actuals, 1884-85.
Sim's Park, Coonoor.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Temporary establishment and contingencies	1,732 3 5	* 2,072 0 0	1,820 8 5
Stonehouse Park, Ootacamund.			
Temporary establishment	591 7 0	1,000 0 0	962 4 3
Church Hill Park.			
Temporary establishment	72 8 0	100 0 0	97 13 0
Upper Norwood.			
Temporary establishment and contingencies	1,000 4 6	2,000 0 0	1,958 1 11
Total ..	20,532 1 1	25,450 8 0	24,574 12 7

* Including amount sanctioned in G.O., No. 843, dated 14th July 1884.

Ootacamund,
15th September 1885.

(Signed) M. A. LAWSON,
Director.

List of those to whom seeds or plants have been distributed during the year 1884-85.

Buck, Mr. E.C., Simla.
Bleehynden, Mr. R., Calcutta.
Bourdillon, Mr. T.F., Trevandrum.
Cherry, Mr. J.W., Salem.
Collector of Malabar, Calicut.
Chaplain of Wellington, Wellington.
Cameron, Mr. J., Bangalore.
Director, Government Cinchona Plantations, Ootacamund.
Director, Department of Agriculture and Commerce, North-Western Provinces and Oudh.
Edmiston, Mr. W.L., Kótagiri.
Fergueson, Mr. T.J., Calicut.
Fisher, Mr. W.R., Dehra Dún.
Gamble, Mr. J.S., Ootacamund.
Groves, Mr. F.A., Coonoor.
Griffith, Mr. T.R., Kótagiri.
Hooker, Sir. J.D., Kew.
Harvey, Messrs. A. and F., Virdupati.
Hamlin, Mr. E.H., Ootacamund.
Hadfield, Mr. G., Nilambúr.
Murray, Mr. G., Hosúr.
Morgan, General, Ootacamund.
Sheldrick, Mr. H., Nellakóta.
Sullivan, Honorable H.E., Ootacamund.
Sinclair, Mr. H.G., Guynd.
Schmid, Mr. T.W., Kótagiri.
Woodrow, Mr. G.M., Poona.

List of those who have been benefactors to the Gardens during the year 1884-85.

Abboy Naidu, T., Madras.
Agricultural Reporter to the Government of Madras, Madras.
Bourdillon, Mr. T.F., Trevandrum.
Cameron, Mr. J., Bangalore.
Duff, The Right Honorable Grant, Ootacamund.
Director, Government Cinchona Plantations, Ootacamund.
Fergueson, Mr. T.J., Calicut.
Griffith, Mr. T.R., Kótagiri.
Gamble, Mr. J.S., Ootacamund.
Hanbury, Mr. T., Italy.
Morgan, Mr. R., Calicut.
Superintendent, Agri-Horticultural Gardens, Madras.
Superintendent, Government Botanical Gardens, Calcutta.
Stone, Mr. O., Wellington.
Superintendent, Royal Botanical Gardens, Shibpur.

Order—dated 30th November 1885, No. 1329, Revenue.

Miscellaneous.

The Director submits his report for the year 1884-85 on the progress and condition of the Government Botanical Gardens and Parks on the Nílgiris.

2. *Season.*—The season was not generally favorable to horticultural operations, though the total rainfall was as much as 63·69 inches, the fall of the previous year having been 50·05. The weather was unusually dry up to October, when as much as 22·84 inches were registered in this one month, which caused some injury owing to the amount of wash occasioned. The winter was a mild one, with no severe frost.

3. *Botanical Gardens, Ootacamund.*—Considerable improvements were made during the year in the gardens, the upper part of which, lying between Government House and the Garden cottage, was entirely re-made and planted. The suggestion of the Director that the right-hand bank of the road, leading to Government House, should be built up with a loose revetment is approved. Nothing has yet been done towards the establishment of an experimental kitchen garden. The nurseries have been filled up with plants, raised for the purpose of replanting the demolished sholahs in the upper part of the gardens, and for experimental purposes. It seems the best course to permit the conservatory, facing the entrance gates, to remain standing as long as it is serviceable ; when this is no longer the case, it will, as suggested by the Director, be pulled down and rebuilt in some other more convenient spot. The other buildings in the garden are reported to be in a good state of repair. Almost the whole allotment for the construction of cooly lines (Rs. 1,879) was expended. Opportunity was taken, when repairing the bund of the tank below the bandstand, which gave way during the heavy rain in October, to lessen the depth of the tank and strengthen the bund. A fountain will be constructed in the tank during the cold weather.

4. A list of all the plants, which have been identified in the several Government gardens, is reported to have been made. The catalogue should be printed as soon as possible.

5. *Government House Gardens.*—Satisfactory progress was made in clearing the scrub and regrassing the slopes in front of the house, and a green-house was built for the purpose of growing decorative plants.

6. *Stonehouse Park.*—The trees planted in October 1884 are reported to be doing well, though some destruction was caused during the year by cattle. It will not be feasible to enclose the park during the coming year with fencing and such other precautions against cattle, as are possible, should continue to be taken.

7. *Sims' Park.*—The usual necessary repairs were carried out during the year and a new bridle-path is now being made through the sholah, which was added in the previous year to the park. The path will be a great convenience for persons going to and fro between Coonoor and Wellington.

8. *Barliyár.*—Much useful work appears to have been carried out in the experimental garden to which about one acre, which has been cleared of useless overgrowth, has been added. Most of the trees in the garden are reported to be flourishing.

9. *Kalhatti.*—The Director states that the year's experience in this garden has confirmed his opinion that it is not worth the while of Government to continue operations here. In a recent order, the Government have called upon the Director to report upon various localities suggested as suitable for the establishment of Botanical Gardens, and upon receipt of his reply, final orders will be passed regarding the further maintenance of the Kalhatti garden. A garden should, no doubt, be established at Gúdalúr and also at Calicut. It is noted that the Director intends visiting the latter place for the purpose of choosing a suitable site.

10. The subject of the proposed museum for Ootacamund, dealt with at considerable length by the Director, should have furnished matter for a separate communication. The report now under review should have been confined to recording the salient features of progress during the year. The Government agree with the Director in considering that the cost of the building proposed as a museum by Dr. Bidie, Mr. Burrows, and

Mr. Gamble would be excessive, and for this reason, if for no other, their proposal must be negatived. The Director should obtain and submit plans and an estimate for the building suggested by him, when final orders upon the subject will be passed. A definite site for the building should be selected, which need not, necessarily, be in immediate proximity to the Government Gardens. The essential point in the building should be its ready adaptation for extension. The Government are much indebted to the Collector, Dr. Bidie and Mr. Gamble for the trouble they have taken in discussing the question which was submitted to them. Financial considerations, however, prevent the Government from sanctioning the erection, at present, of such a spacious building as that suggested by them.

11. The number of plants in the Herbarium, owing to the kindness of various contributors, considerably increased during the year. The Government are much indebted to the various gentlemen who kindly forwarded specimens to Mr. Lawson. Sanction is accorded to the suggested alteration of the old cinchona laboratory and its use, in the future, as a building for the accommodation of the Herbarium. Plans and estimates should be submitted as soon as possible.

12. *Special Products.*—It seems clearly established that the *Erythroxylon coca* will thrive very well and can be easily propagated from seed in many parts of Southern India. The price of the alkaloid manufactured from this plant has however declined from 2*s.* 6*d.* to 7*d.* per grain during the year, and it seems very doubtful whether its cultivation here could ever be a commercial success. The alkaloid has been successfully manufactured from the plant by the Government Quinologist and used and approved of by Surgeon-Major Drake-Brockman in his ophthalmic operations. The analyses made show that the trees grown in Barliyár are particularly rich in the alkaloid. Specimens of the *Erythroxylon monogynum* which is common in many districts of the Presidency and which has been used, at times of scarcity, as an article of food, were analysed and found to contain no anæsthetic property analogous to that met with in *Erythroxylon coca* but to possess a bitter and a tonic principle, which would mitigate the pangs of hunger.

13. In the review on the report for the previous year, it was noticed that no information was afforded regarding *Taraxacum*, medicinal rhubarb, and *Hyoscyamus*. The Director now reports that the *Taraxacum officinale* is advancing in all directions about Ootacamund. It is unnecessary to pay any further attention to its special cultivation. The plants of the herb producing the medicinal rhubarb have not thriven as well as could be wished. Mr. Lawson promises to make further experiments regarding them. The *Hyoscyamus* can be grown easily on the Hills, but the demand for the plant has ceased.

14. The report contains very interesting information on the processes required for the manufacture of oil from the various varieties of Eucalyptus. The consignment of oil from the leaves of *Eucalyptus globulus*, which was sent to the Madras Medical Department, was sold at the rate of Rs. 3-3-0 per lb., 5 shillings per lb. being the wholesale English quotation. The medicinal use of the oil, made from the various varieties of the Eucalyptus, is, it is believed, rapidly spreading. A paper on the uses and virtues of the oil extracted from the Eucalyptus was recently widely circulated by the Director of Agriculture.

15. The experiments made in the growth of Ipecacuanha during the year were not successful. The number of plants is, however, being increased, and, with further experience, the Director has no doubt that the cultivation of the plant will prove a success.

16. Seeds of the *Joannesia* (*Anda*) *Gomesii* received from the Curator of the Lâl Bagh, Bangalore, were planted during the year and young plants raised; the bark of the tree is said to contain useful medicinal properties. A valuable timber tree, the *Acacia homalophylla*, which produces the Australian violet wood, fruited for the first time during the year. It would probably thrive well at elevations between three and four thousand feet. The *Castilloa elastica* continues to grow very well at Barliyár. The Ceara plants fruit freely and young plants are now found growing where they

must have been sown by birds, and it may from this be hoped that the tree will become a free grower in the ghât forests.

17. The mangosteen, *Garcinia Mangostana*, and litchi, *Nephelium litchi*, fruited freely in Barliyár: both these trees, which are so valuable for their fruits, should be widely cultivated. There is no doubt they would succeed admirably in many parts of the Presidency. A good report is given of the following:—*Rhus vernicifera*, *Rhus succedanea*, *Quillaja saponaria*, *Kumera aracha* and the Cochin China tuberous-rooted vine. The report contains some useful notes on *waras*. The dye was not very favorably reported on when tried in England by Mr. Thomas Wardle (G.O., 25th September 1885, No. 1096).

18. The receipts for the year amounted to Rs. 2,077-12-1, compared with Rs. 4,300, the estimate in the budget for the year. The decrease is accounted for by the gratis distribution of plants which, had the practice of former years been followed, would have been sold. The expenditure amounted to Rs. 24,574-12-7, or Rs. 875-11-5 below the estimate. The saving occurred, principally, in the allotment made for the purchase of cabinets and materials; on the whole, the budget allotments were closely followed.

19. *Miscellaneous.*—There seems to be no object, at present, to be gained by the establishment of a seed stall for seeds in the market at Ootacamund. It is well known that seeds are offered for sale at the Government gardens. The remarks of the Director regarding Nílgiri peat have been noted with interest.

20. His Excellency in Council has much pleasure in again congratulating the Director on the progress made during the year, and notes the remarks he has made in appreciation of the services of the subordinates employed.

(True Extract.)

Ag. Secretary to Government.

To the Director of Government Cinchona Plantations, &c.
„ the Director of Revenue Settlement and Agriculture.
„ the Board of Revenue.
„ the Accountant-General.
„ the Superintendent, Government Central Museum.
„ the Surgeon-General with the Government of Madras.
„ the Public Works Department.
„ the Financial Department.
„ the Honorary Secretary, Agri-Horticultural Society, Madras.
„ Deputy Surgeon-General G. Bidie, M.B., C.I.E.
„ the Honorary Secretary, Wynaad Planters' Association.
„ the „ Nílgiri „
„ the „ Yercaud „

Exd. W. H. French.

200 Copies.

Encl 49

Govt. of {1885} Madras.

REVENUE.

20 J.C.

5

Issued

Recd. 8/1/86 Encl.

G.O., 30th November 1885, No. 1329.

B. Rc. 11 Vr. of 14 January

NOVEMBER.

Government Botanical Gardens and Parks.

Reviewing annual report of — for 1884-85.

247

Can—

This seems to be the first of the kind sent to us— We cannot find a previous one— D.P.—

12/86—