



ROYAL BOTANIC GARDENS,
TRINIDAD.



ANNUAL REPORT

FOR THE YEAR 1897.

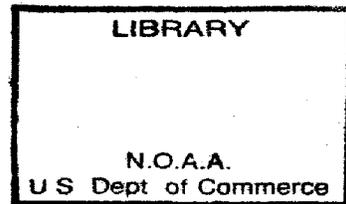
BY

J. H. HART, F.L.S., C.M.P.S., F.M.S.L.,

SUPERINTENDENT.



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1898.

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ANNUAL REPORT

OF THE SUPERINTENDENT OF THE

ROYAL BOTANIC GARDENS FOR 1897.

SIR,

I have the honour to submit for the information of the Government, the Annual Report on the working of the Botanical Department for the year ending December 31st, 1897.

This Report forms the eleventh of the series I have had the privilege to submit during my tenure of office (1887-1897), both years inclusive.

ESTABLISHMENT.

There has been no change in the *personnel* of the Department during the past year. The Superintendent went on leave to England in May, and returned to duty again in August. During this period, Mr. Lunt, Assistant Superintendent, was in charge of the Department. Mr. H. G. Hart acted for a period of seven days as Supernumerary.

METEOROLOGY.

The Meteorological Returns for the Royal Botanic Gardens form, as usual, an Appendix to the Annual Report. The Table of Returns of Island Rainfall from 102 Stations, will also be found in an Appendix.

The Rainfall for 1897 was above the average by 11.77 inches, January, February, April, August and December being below; and May, June, July, September, October, March and November, being above the average. The year, however, was not noted for long periods of rainy weather, but rather for an intermittent rainfall, with heavy rains at intervals, from the month of May onwards. The month of April has not been so dry since the years 1862 and 1864, when .25 and .04 inches were registered. The record for the month of February, our driest month, is not remarkably low, as in nine out of the previous 35 years, the amount registered was less than for 1897. No rain at all was recorded for February, of the year 1878. The 13.88 inches for the month of July is in excess of all records during the previous 35 years; except those for 1886 and 1893, when 17.48 inches, and 16.32 inches were respectively recorded; so that no record, either high or low, has been established during the year 1897.

A station has been established at the newly erected light-house on the Island of Chacachacare at the entrance to the harbour of Port-of-Spain, our chief town. This will be a station of the second order. It is also intended to institute a station at another new light-house which has been built on Point Galera, on the north-east point of the island. In instituting these stations, every facility has been given by Captain Saunders, the Harbour Master of the Port, from whom the first proposal to establish these stations emanated. The stations, when in proper working order, will be of the greatest service, as by means of the telephone shortly to be laid, we can obtain information of the state of the weather on the extreme north-east, and the extreme north-west points in a few seconds of time.

HERBARIUM.

The routine work of collecting, drying, and mounting herbarium specimens, has been carried on as usual, but particular pains have been taken to make the collection of Ferns and Selaginellas as complete as possible.

During 1897 the following plants have been determined as new species. *Anona Prestoei*, Hemsley; *Phorodendron Hartii*, Kr. et Urb.; *Phthirus Seitzii*, Kr. and Urb.; *Omphalea megacarpa*, Hemsley; *Daldivia aspera*, Masec; *Anemopaegma carrerense*, Burkill. Many other plants new to the Trinidad flora, but known previously from other localities, have also been determined. Among these is *Asplenium gracilescens*, Mett., a very graceful fern, a growing plant of which was brought in by one of our native collectors. The cacao shade tree in Nicaragua, introduced by the Superintendent in 1893, has now been referred to *Gliricidia maculata*, H.B.K. This tree is well known in the neighbourhood of Kingston, Jamaica, where I met with it many years ago, and where it has probably been naturalised. It bears large quantities of lilac-coloured flowers, on branches nearly leafless, in the early months of the year, following the

habit of *Coursetia arborea*, Gr., of Trinidad, a tree it much resembles. Humboldt, Bonpland, and Kunth, give it as a native of Campeachy. I found it in 1893, common in Nicaragua, and it is probably indigenous to a greater part of Central America. It does not appear, however, to be indigenous to Jamaica, as it is only found in the neighbourhood of gardens. The plant was also introduced to Trinidad from Jamaica in 1891, so that there has been full opportunity for comparing the Nicaraguan with the Jamaican plant, which had formerly been referred to *Lonchocarpus*. The plant is known as "Madera" in Nicaragua.

A curious lime-attracting *Algae* was determined at Kew as *Schizothrix fasciculata*, Gomont. This *Algae* was brought some years ago from the Botanic Garden at Grenada with some water plants. The plant, in combination with *Schizothrix Friesii*, Gomont., and *Chlorococcus turgidus*, Naeg., forms a heavy spongy lining on the walls of any tank or fresh water reservoir into which it may be introduced. This spongy layer rapidly decomposes and forms mud, and consequently, the tanks where it is present require frequent cleaning, but even after the most careful cleaning, the plants re-appear again and again. *Schizothrix fasciculata* attracts to itself large quantities of lime, the incrustations of which are freely apparent to the naked eye.

The experiments in the fermentation of saccharine fluids have been continued, and the various stages of the indigenous or native ferments, or yeasts, have been closely watched. From material sent from our laboratory, it has been ascertained that the ferments which occur here naturally or spontaneously in cane juice or other saccharine fluids, are quite distinct from those of the neighbouring island of Jamaica. Professor Jorgensen reports that he has separated several distinct species of alcoholic ferments from our material, an account of which will probably be found in the forthcoming revised edition of his valuable work on fermentation.

The importance of work in this direction is better understood, when it is stated that it has been found possible to induce certain flavours by using certain ferments in the "wash" or material from which Rum is distilled, and that the flavour of distilled liquor can in this way be brought under control of the operator.

Our share in the investigation has been a limited one, as our task was to simply show that the Trinidad indigenous alcoholic ferment had a different action to those occurring in Jamaica distilleries; and forward material to a specialist for the full examination. Material was sent on to Professor Jorgensen of Copenhagen, who has now decided that our organisms are distinct.

The exact processes to be used to give marked benefit to our distilling industry, have yet to be worked out, but it will probably take considerable time before such can be elaborated, and numerous experiments are requisite before it is possible for the exact detail to be laid down.

We have, however, on trial a species of pure yeast from Jorgensen's laboratory which we hope to test on some of our largest distilleries during the coming year.

CORRESPONDENCE AND DISTRIBUTION OF INFORMATION.

I have to report a large increase in office correspondence for 1897, notwithstanding the absence of the Superintendent for three months on leave. The number of registered communications of all kinds reached a total of 4,072 (previous year 3,491).

The type-writer purchased last year has been of the greatest service in preparing Reports and Bulletins for the hands of the printer.

During the year the Superintendent was appointed a member of a sub-committee of the Agricultural Society on Agricultural education. At the meetings of this committee a question arose as to the best means of disseminating agri-horticultural knowledge, and the sub-committee reported, as a body, in favour of the adoption of "Blackie's Tropical readers" Nos. 1 and 2, in the primary schools. It was my duty to point out, however, that the books, to be made fully applicable to Trinidad, stood in need of considerable revision, several of the articles referring exclusively to Jamaica. I had also to point out that the articles on sugar and rum were faulty, and the details too antiquated, to be of any use in Trinidad, where more modern methods of sugar manufacture have long been in constant use on the greater number of estates.

Again, the use of local names and description of things in the colony of Jamaica, unfits it in a great measure for use in other places. Notwithstanding these faults, however, the books are of sterling value, and a little revision to adapt them for general use, would make them admirably suited for the instruction of youth in most tropical countries.

In return for our Bulletins and Reports, we yearly receive a large number of exchanges, and among these none are more valued, or of greater use to us than the Reports which have from time to time been issued by Professor Harrison of Demerara.

That made by him, having for its subject a series of analyses of the various parts of the cacao bean, is a most valuable work. These analyses enable us to see what is really lost, and gained, during the process of fermentation and curing, which previous to Professor Harrison's Report, were points undetermined. The paper has been re-published in full at my suggestion by the Agricultural Society. Another Report of great value to all West Indian cultivators, is Professor Harrison's Report on the soils of Grenada. In this Report he inserted for purposes of comparison, an analysis of our garden soil. The Report is republished here, for although it differs in some items from an analysis made by Professor Carmody, it confirms his estimate of the extreme poorness and barrenness of the soil at the Royal Botanic Gardens.

GOVERNMENT LABORATORY,
GEORGETOWN, BRITISH GUIANA,
August 6th, 1897.

Certificate of Analysis of 2 samples of Soil and Sub-soil, marked "Royal Botanic Gardens,"
Trinidad, sent by the Government Botanist, British Guiana, received 1896:—

| | | | |
|--|--------------|--------------------------|------------------|
| Air-dried soil retained ... | ... | 1.94 per cent. moisture. | |
| Air-dried sub-soil retained ... | ... | .72 " " " | " |
| <i>Air-dried.</i> | <i>Soil.</i> | | <i>Sub-soil.</i> |
| 1. Root residues and combined water ... | 4.414 | ... | .807 |
| 2. Humus ... | .766 | ... | .060 |
| Quartz sand ... | 48.919 | ... | 45.840 |
| Clay and insoluble silicates (by difference) | 88.010 | ... | 45.008 |
| Iron-peroxide ... | 6.858 | ... | 3.225 |
| Alumina ... | 5.063 | ... | 4.521 |
| Manganic oxide ... | .102 | ... | .101 |
| Calcium oxide ... | .814 | ... | .282 |
| Magnesium oxide ... | .128 | ... | .145 |
| 3. Potassium oxide ... | .285 | ... | .865 |
| Sodium oxide ... | .080 | ... | .149 |
| 4. Phosphoric anhydride ... | .066 | ... | .002 |
| Sulphuric anhydride ... | trace | ... | trace |
| | 100.000 | ... | 100.000 |
| 1 and 2. Total nitrogen ... | .150 | ... | .063 |
| 2. Nitrogen in amides and in humus ... | .051 | ... | .017 |
| 3. Soluble in 1 % citric acid solution ... | .0055 | ... | .0025 |
| 4. " " " " " " ... | .0015 | ... | .0014 |

A very poor, sandy, soil, deficient in humus, available nitrogen and both available and total phosphoric anhydride.

J. B. HARRISON,
Government Analyst.

LECTURE.

The Superintendent was asked by the governing body of the Victoria Institute to give a lecture on the minor industries of the West Indies, and having consented to do so, it was delivered on the 23rd December, His Excellency Sir H. E. H. Jerningham, K.C.M.G., Governor of the Island, in the Chair, who proposed the publication of the lecture for general distribution, and it will therefore, in compliance with this proposal, be published in pamphlet form for distribution throughout the Colony.

FLOWER GARDEN.

The character of the weather during a greater part of the year, was not in favour of the general operations of this section, successive downpours doing considerable damage to small plants, and to garden annuals, but the general routine has been regularly maintained.

Plants of the large South American lily, the handsome *Victoria Regia*, are growing well in the lily tank or pond constructed last year.

Plants of the "double coconut" or "coco-de-mer," *Lodoicea sechellarum*, obtained from Mauritius in 1895, have made fair growth, but do not appear to put on as yet the healthy green of our native palms.

The members of the Royal Commission sent out to enquire into the condition of the West Indies, paid several visits to the gardens, and I am pleased to be able to point out that the estimate made by the Commission of the work carried out by the Botanical Department is of the highest class, and has been so recorded in their Report to Her Majesty's Government.

Attention has been directed to a sudden disappearance of the grass on several sections of our extensive lawns. This is not to be accounted for by the ravages of the mole cricket, but must be ascribed to other causes. At present, however, we are unable to account for the disappearance, but it has been noted that wherever a thick growth of *Vandellia crustacea*, Benth., occurs, in such places the grass is sure to disappear. One of the plants belonging to the same order as *Vandellia*, well known to

sugar cane growers as the "cane-killer," *Alectra brasiliensis*, Benth., is parasitic upon plants of *Saccharum officinalis* (sugar cane), and completely kills them in a few weeks' time, and it has been thought possible that *Vandellia* may have also a parasitic habit upon the roots of *Gramineæ*, causing their destruction. It has been found on trial that the complete removal of the *Vandellia* insures a fresh growth of grass, but it has yet to be proved by further experiment—now in progress—that the *Vandellia* kills by a parasitic habit, or destroys the grass in some other way.

Several plants of *Araucaria excelsa* and other trees of suitable character have been planted in the large savannah known as the Queen's Park, for shade purposes, each tree being securely fenced off from the attack of cattle, by iron fencing.

The trees on the same circuit as the new asphalt walk (which is two miles in length) have all been carefully pruned, and a large number have been freely trimmed in the section known as the Maraval corner.

A fine batch of Cannas of the most improved dwarf kinds was selected by the Superintendent while in England. These have commenced flowering, and now show to great advantage. It is hoped that they will not be attacked by the destructive fungus which destroyed our beds of seedling kinds on a former occasion (*Uredo canne*.)

In the gardens there are several fine plants of *Quassia amara*, one of the bitter woods of commerce. These plants, besides being useful medicinally, are very useful for furnishing supplies of cut flowers at many seasons of the year.

Mr. Lunt, Assistant Superintendent, has lately taken the height of some of our trees, which may prove interesting for comparison with those grown in other gardens. The Brazil-nut, *Bertholletia excelsa*, has a stem four feet in diameter, a height of 105 feet, and a spread of branches having 94 feet diameter. *Araucaria excelsa* is 92 feet in height, and has a stem 7 feet in circumference at the base. *Amherstia nobilis* is 50 feet in height, with a stem 5 feet 6 inches in circumference at the base two feet from the ground, and a spread of branch having a diameter of 48 feet.

DECORATIVE WORK.

The demand for decorative plants was larger during 1897 than during the previous year, probably owing to the occurrence of Centenary and Diamond Jubilee celebrations. The number loaned out was 1,564 on 19 separate occasions, while the total number used amounted to 4,173.

ROADS, WALKS, DRAINS, GATES, FENCES, &c.

As all the above are now in fair order, they do not require so much attention as formerly, and by due and regular attention to the opening of drains after heavy showers, it is found that considerable expenditure is avoided.

The rain-water gutterings of our buildings have also been regularly cleaned. Too little attention is generally paid to this duty in tropical climates, for when filled up with leaves, seeds blown by the wind easily find a resting place therein and grow, and very often quite large plants may be seen growing luxuriantly in the spoutings and gutterings surrounding a building. In the town of Port-of-Spain this is a very common feature, and even in houses whose owners are wealthy, the duty of keeping the house gutterings clear is often neglected. Not only is this neglect a source of expense to the owner for constant repairs, but it is productive of other ills. One of the first and most annoying, is the opportunity it affords for the growth of the mosquito. The down pipe being blocked, little pools of water accumulate in the gutters, and in these little pools, thousands of these spiteful little annoyances develop, while residents are all the time wondering where they come from. Other evils arise from the decay of the vegetable matter, and also the impediment this decaying matter opposes to the washing away of the deposits of bats, birds and insects by the rainfall. Inattention to these little details often affects adversely the health of the inmates of a dwelling, while harmless trees near by are supposed "to bring mosquitos," and are therefore condemned to be cut down. Mosquitos do not breed in trees, unless there are water-containing plants in the branches, and I register a good word for the trees, when I show that the gutters are greater offenders.

A considerable portion of the fence on the Garden boundaries was repaired by the Public Works Department at different times of the year.

VISITORS.

The number of visitors who registered at the office was 298, a much smaller number than during the previous year. Among the names to be found, are those of the Royal Commissioners, Sir H. W. Norman, Sir D. Barbour, Sir Edward Grey, Dr. D. Morris and Mr. S. Olivier, Mr. J. B. Morrell, and Mr. F. H. Rowntree, of the firm of Rowntree & Co. of York, cacao manufacturers. Mr. W. R. Douglas, of Castle Douglas,

Mr. W. Cadbury, of Birmingham. Many visitors from the tourist steamer *Lusitania* Professor Earnst and son, of Caracas; F. C. Lehman, the well known orchid collector and German Consul at Popayan in Columbia; Mr. Esme Howard and Mr. R. H. Biffen, making investigations in furtherance of the Rubber industry; General Clive Justice, Mr. Haggard, H. B. M. Minister to Venezuela, and Mr. A. A. Astor and party from New York.

NURSERIES.

The general character of this section as described in former Reports, has been fully maintained, and somewhat improved. Two new orchid shelters have been built. The glass houses described and discussed in last Annual Report still continues to do excellent service.

The total receipts for the year for plants, etc., sold from the gardens, amounted to \$1,283 09, or £267 6 2 sterling. This amount does not cover the value of plants disposed of by exchange or allotted *gratis* to public institutions.

The total number of plants disposed of is shown in the following Tables, Nos. 1, 2, 3 and 4.

Table I.—Distribution of Plants and Seeds in exchange, 1897.

| WHERE DISTRIBUTED. | PLANTS. | SEEDS. | |
|-------------------------|---------|------------|-----------|
| | | Countable. | Packages. |
| To places abroad... .. | 1,159 | 9,131 | 376 |
| To places inland | 5,036 | 4,500 | 24 |
| Totals | 6,195 | 13,631 | 400 |

Table 2.—Plants and Seeds received in exchange, 1897.

| WHENCE RECEIVED. | PLANTS. | PACKAGES OF SEEDS. |
|---------------------------|---------|--------------------|
| From places abroad | 690 | 193 |
| From places inland | ... | 3 |
| Totals | 690 | 196 |

Table 3.—Plants, Seeds and Flowers, purchased and sold, 1897.

| PURCHASED. | | | SOLD. | | |
|------------|--------------------|------------------|---------|---------------|------------------|
| Plants. | Packages of Seeds. | Countable Seeds. | Plants. | Bouquets, &c. | Countable Seeds. |
| 1,313 | 122 | 653 | 13,800 | 26 | 3,782 |

Table 4.—Total number of Plants, Seeds, and Flowers, distributed by sale and exchange, 1897.

| PLANTS. | SEEDS. | | BOUQUETS, &c. |
|---------|------------|-----------|---------------|
| | Countable. | Packages. | |
| 19,995 | 17,413 | 400 | 26 |

6 bushels of Logwood also sold.

While the Superintendent was in England on leave, advantage was taken to make as full a selection of decorative and economic plants as was possible from the collection of the Royal Gardens, Kew, and several days were devoted to this special purpose. The Director of the Home establishment, W. T. Thistleton-Dyer, Esqr., C.M.G., &c., &c., afforded me every facility in his power, and encouraged the making out of a long list of *desiderata*, so that it could be supplied to us from time to time as convenient. The first consignment I brought with me on my return from leave in August last.

A purchase of plants was also made at the nurseries of Messrs. Jas. Veitch and Sons of Chelsea, showy plants for the garden beds being selected, and a few free flowering orchids.

A consignment of plants of the Norfolk Island pine, *Araucaria excelsa*, was received during the year. This plant does well as a decorative plant with us, and we sell many dozens to Venezuelan and other foreign buyers, as well as supplying local demands.

Our general stock of timber trees, flowering plants, etc., etc., has been fully maintained, and in some sections has been largely increased.

A point is made of keeping on hand stocks of the principal rubber-producing trees and shrubs, and we have some eight or ten different kinds in hand. *Castilloa elastica*, and *Hevea brasiliensis*, the Central American, and Brazilian rubber, have been in great demand, and many thousands have been sold. We have received many enquiries from abroad also, both for seed and plants. Rubber is further discussed under the head of Economics.

A parcel of seed of the very finest quality of Honduras logwood, was received from Mr. E. Campbell, the newly appointed Curator of the botanical station in that Colony.

A well established plant of *Diacrium bicornutum* of the largest size was despatched from our nurseries to the Royal Gardens, Kew, early in the year, where it was much appreciated.

Trinidad has long been noted for the orchids it has from time to time forwarded to Kew, and from Smith's Historical Record it may be seen that David Lockhart, the first Government Botanist, forwarded in 1823 and 1825 plants of *Stanhopea insignis*, *Oncidium papilio*, *Lockhartia elegans*, *Catasetum tridentatum*, and *Ionopsis pallidiflora*, from Trinidad.

The Mangosteen, *Garcinia mangostana*, fruited during the months of October, November, and December; and some fruit sent on to the Royal Gardens, Kew, was successfully passed on to the Right Honourable J. Chamberlain, Secretary of State for the Colonies, and a few others, from all of whom excellent reports have been received of the fine quality and splendid condition of the fruit. A large number of seedling plants has been raised, which are healthy and thriving, and will be ready for distribution during 1898. Could this exquisitely flavoured fruit be grown in large numbers, an expert reports that it would meet with ready sale in London at highly remunerative prices. There is no reason whatever that it should not be grown more widely, for the development of our largest plant shows that it is well adapted to our climate.

BULLETIN.

The publication of the Bulletin of Miscellaneous Information has been regularly maintained, and no delay in issue has occurred. In consequence of the Superintendent being away on leave in July, the number for the quarter ending on the 31st of that month, was issued at the same time as the April number, or three months in advance. The contents of this year's numbers, is given in the following list:—

| | |
|---|--|
| 215.—Caladiums. | } Part I., Vol. III., January, 1897. |
| 216.—Agricultural Teaching. | |
| 217.—Petreaea sp. | |
| 218.—Analysis of St. Ann's Limestone. | |
| 219.—The Cocorite Palm.—(<i>Maximiliana</i> .) | |
| 220.—The Saman.—(<i>Pithecolobium</i> .) | |
| 221.—Tonca Beans.—(<i>Dipteria</i> .) | |
| 222.—Decreasing Rainfall. | |
| 223.—Rainfall a fertilizer. | |
| 224.—Natural History Notes. No. 84.—Fertilization by Hymenoptera. | |
| 225.—Oranges from seed. | |
| 226.—The Wild Coconut.—(<i>Cocos arama</i> .) | |
| 227.—The Agricultural Society. | |
| 228.—Note to Correspondents. | |
| 229.—Rubber. | |
| 230.—Agricultural Degrees and Diplomas. (Extract.) | |
| 231.—The "Hunterman's Nut."—(<i>Omphalea megacarpa</i> .) Hemsley. | |
| 232.—Natural History Notes. No. 85.— <i>Neorophagus diptera</i> No. 86.—The "Corn Bird"—(<i>Ossicus</i> .) No. 87.—Bats fertilizing flowers. | |
| 233.—Chemical work in factory and field. | |
| 234.—Study Nature's way.—(Extract in part.) | |
| 235.—Rubber at the Botanic Gardens. | |
| 236.—Taking a cooler.—(a suggestion.) | |
| 237.—Botanical Notes. No. 10.— <i>Loranthaceae</i> . No. 11.—Old Red Dutch Cacao. No. 12.— <i>Polypodium multiserialis</i> , Moore. No. 13.— <i>Potamogeton fluitans</i> , Kth. | |
| | |

| | |
|--|---|
| 238.—Shaddocks, Grafting, &c., &c. | } Part II., Vol. III., April, 1897. |
| 239.—The Yellow Yam. | |
| 240.— <i>Thrinax Barbadosensis</i> . | |
| 241.— <i>Myrozyton Pereira</i> . | |
| 242.—The Aroma of Rum. | |
| 243.—The selection of seedling Sugar Canes. | |
| 244.— <i>Grevillea robusta</i> , Cunn. | |
| 245.— <i>Isotoma longiflora</i> , Presl. | |
| 246.—Visitors to Royal Botanic Gardens. | |
| 247.—The utilization of the Bamboo. | |
| 248.—Botanical Notes. | } Part III., Vol. III., July, 1897. |
| No. 14.— <i>Acrostichum Herminierii</i> , Bory. | |
| No. 15.— <i>Theobroma pentagona</i> , Bern. | |
| No. 16.— <i>Gymnogramma pumilla</i> , Sprengl. | |
| No. 17.—A false Cacao.—(Identification of.) | |
| 249.— <i>Cinnamomum Camphora</i> .—(Camphor.) | |
| 250.—Shade Trees. | |
| 251.—The Bergamot Orange. | |
| 252.—"Concise Notes," "Short Cuts" in agricultural practice. | |
| 253.—Budding the Lemon. (Extract.) | |
| 254.—"Dhal" or "Dhol." | } Part IV., Vol. III., October, 1897. |
| 255.—Tonca or Tonquin Beans.—(Export of.) | |
| 256.—"Balata." | |
| 257.—Natural History Notes. | |
| No. 28.—A rare Bat. | |
| 258.—Aristolochias. | |
| 259.—The use of the Bamboo for layering. | |
| 260.—An Orchid House. | |
| 261.—A new machine for drying Cacao, Coffee, &c. | |
| 262.—Rice. | |
| 263.—How the tank was built. | |
| 264.— <i>Tradescantia zebрина</i> . | |
| 265.— <i>Thunbergia laurifolia</i> , Lindly. | |
| 265A.—Floral Painting. | |
| 266.—Botanical Notes. | |
| No. 18.—Fungus on spider. | |
| No. 19.—Fungus on Canna. | |
| No. 20.— <i>Sobralia</i> species. | |
| No. 21.— <i>Anona Prestoeii</i> , Hemsley. | |
| No. 22.— <i>Furcraea macrophylla</i> , Bak. | |
| No. 23.— <i>Sacoglottis amasonica</i> , Mart. | |
| No. 24.— <i>Lucuma multiflora</i> , A.D.C. | |
| No. 25.— <i>Omphalea megacarpa</i> , Hemsley. | |
| No. 26.— <i>Dalldina aspera</i> , Massee. | |
| 267.—The Grenadine Orange. | |
| 268.—The Soap berry.—(<i>Sapindus</i> .) | |
| 269.—Grafting Oranges. | |

The Bulletin continues in demand. I have been informed that the article on the Parasol or leaf-cutting ant, published last year, has been made an object lesson in some of our primary schools. The last application for a copy came from a Scotchman in British Central Africa which shows its wide distribution.

"RED HOUSE" GROUNDS.

(GOVERNMENT OFFICES, PORT-OF-SPAIN).

The relaying of the lawns around the newly completed Government Offices was efficiently carried out by Mr. Lunt during my absence on leave.

From the position of the ground it has been decided to maintain this area principally in grass, with a few trees for shade purposes.

ECONOMIC SECTION.

SUGAR.—First in the list of economic plants once more comes sugar. Our work in this direction has been of more than usual interest, owing to the depression which has existed, and the hope that some cane might be found which would relieve in some manner a certain amount of the existing apprehensions.

The Royal Commission which visited us early in the year, made a close examination into all the experiments which were being carried out, and their opinion is duly expressed in the Report they issued. The substance of their recommendations was that the experiments should be carefully continued, in the hope that canes of greater richness might be raised, than those hitherto cultivated. So far, however, owing to our experiments having been only little more than a year in existence, we have no great progress to report; but we may put on record the growth and examination of our second batch of seedlings of Barbados origin. These were few in number, but the average "quotient of purity" of the number examined (some fourteen kinds), was 81.1. A full record of the examination was laid before the Agricultural Society in April, 1897, and printed in their proceedings, and therefore need not to be repeated here.

The examination of the Demerara seedlings was also continued, and an examination was also made of a number of seedlings grown from seed ripened in the Gardens. Numbers D 74, D 95, D 102, and our own seedling T 2 showed sugar contents above the average, our own seedling heading the list, closely followed by D 95 of the Demerara lot.

I obtained from Mr. Jenman canes of seedlings Nos. D 115, D 116, and D 117, all of which are this year showing well and making great promise. They are certainly canes which do credit to men who selected them, for they appear to possess qualities which will generally recommend them for growth under various conditions. They stand for examination during the early months of the coming year, when it will be seen whether their sugar contents follow the record of their previous character.

Our success in raising seedlings has much exceeded our expectations. In some places where cane seedlings are grown reference has been made to the great liability of seedlings to damp off, and the great loss sustained in the seedling stage, which may possibly be due to some peculiarity of climate; for with us so far the loss has been insignificant from the seed box, to the time when large enough for the field.

The mode adopted has been to burn, or rather parch, all earth used for seed boxes, in a large iron pan, and then expose it to air for some five or six weeks before using. This rids the earth of all seeds of weeds, spores of fungi, etc., and the exposure rids the soil of the caustic properties resulting from combustion. The cane seeds are then sown on the surface of the soil, and kept properly shaded and watered until they germinate, when they are gradually given a larger amount of light and air. As soon as the seedlings are large enough to handle, they are pricked out into fresh soil in boxes, at about one inch apart, and when sufficiently grown, they are put singly into bamboo pots, in which they remain until ready for the field.

As soon, however, as they are placed in the bamboos, they are put out in the open air, under a frame which supports canvas covers, which protects them from hot sunshine and heavy rains; but full exposure is always given at night, unless heavy rain is falling. Under these conditions the plants soon become very hardy, and the greatest loss that occurs is due to our ever present enemy the mole cricket, which visits them with discriminating favour, leaving plants less sweet, untouched.

It was stated in my last year's Report that some two thousand seedlings had been raised. These were all planted out in due course in our experimental grounds, but being much cramped for room, many will not be large enough for examination this year (1898). The plants as they now appear, show a very wide range of variation, some varieties producing but few plants like the maternal parent. Our principal source of seed (season 1896) was from the varieties D 95, D 170, D 74, D 102,* D 116, T 2, and Caledonian Queen. This year (1897) our seed producers were D 116, D 115, D 117, D 95, and D 74, and the fertility of all is much beyond anything previously seen. Every kind without exception has germinated in the boxes sufficiently close to form a sward like that of a tennis lawn, and we have thousands more seedlings than can possibly be grown, all of which were obtained from not more than three dozen arrows. Last year I received a large number of bags of seed of the "Bourbon" from various planters, the result of which is to be seen in four good plants of the Bourbon type, which are all that was raised.

The fertility of the seed is to be accounted for in some measure by the fact that its collection is personally supervised, and only those arrows are taken which are ripe for harvesting; a stage which may be known, by a slight shake causing the seed to leave the arrows in considerable quantity.

I have not as yet had an opportunity of collecting seed from the "Bourbon" cane as none of our plants have fruited, so that it has not yet been possible to show with any accuracy whether that variety would prove itself fertile, if seed were collected under the same conditions as that from the various other kinds. Numbers D 115, and D 116 of the Demerara set have been much admired by planters of great experience, and are, so far, quite on a par with their former character, and it is to be hoped that they will prove out as well as they promise, for both are considered by Messrs. Jenman and Harrison as among the best of the Demerara set, one of their best characters being that they stand up well and very seldom fall, while D 145, another of the Demerara set, although it has a high record for sugar contents, always falls to the ground more or less, and this is also the case with some others, our own seedling T 2 being among the number.

During the months of August and September our canes were badly attacked by the moth borer, but since that period the attack has been nominal.

On small experiment stations, and possibly on larger areas, I am of opinion that much good might be done by the use of lamp traps, for catching the females of this insect during the season when they are most numerous. One is in use at the Botanic Gardens, which is very effective in this respect, and catches numerous other night flying insects besides the cane moth.

* It has been agreed between the Trinidad and Demerara Gardens that all new canes raised shall have a distinguishing prefix (i.e.) D. for Demerara, T. for Trinidad, and B. for Barbados.

List of the Land and Fresh-water Mollusca of Trinidad.

| | |
|-----------------------------|---------------------------|
| *Cocilioides minutissima | *Ennea bicolor |
| *Lantia insignis | *Streptaxis deformis |
| *Subulina simplex | *Simpulopsis rufovirens |
| " Urichi | *Succinea Cuvieri |
| " octona | " pusilla |
| *Opeas Beckiana | *Homalonyx felina |
| " plicatella | *Veronicella occidentalis |
| " subula | " sp? |
| " Goodalli | Auricula pellucens |
| " micro | Melampus coffea |
| *Leptinaria lamellata | " pusillus |
| Omphalina Guildingi | Pedipes mirabilis |
| Vitrea implicans | Ancylus textilis |
| " umbratilis | Gundlachia crepidulina |
| " Luntii | Planorbis terverianus |
| *Guppya semen-lini | " lucidus |
| " hallucinata | " Haldemani |
| Selenites alicea | " Gundlachi |
| *Sophina trinitaria | *Physa rivalis |
| Epiphragmophora coactiliata | " " var. |
| Thysanophora bactricola | *Paludestrina crystallina |
| " fuscula | *Ampullaria cornu-arietis |
| " dioscoricola | " urceus |
| *Orthalicus zebra | " glauca |
| *Strophochilus oblongus | *Neocyclotus translucidus |
| *Plecochilus glaber | " grenadensis |
| Bulinulus pilosus | Diplomatina occidentalis |
| " fraterculus | Truncatella pulchella |
| " aurcolus | " bilabiata |
| " trinitarius | " subcylindrica |
| " Rawsoni | Taheitia reclusa |
| " Mossi | Cistula aripensis |
| " Broadwayi | Helicina nemoralis |
| " " var. | " Dysoni |
| " Vincentinus | " lirata |
| " " v. stramineus | " ignicoma |
| *Cylindrella trinitaria | Sphaerium incurvum |
| Pupa uvulifera | Pisidium punctiferum |
| " Eyrisei | Anodonta Leotaudi |

APPENDIX I.

Plant and Seed Distribution.

Plants and seeds were distributed to the following correspondents during the year :—

| | | | |
|-----------------|------------------------|---------------------------------|--------------|
| Royal Gardens | ...Kew | Dr. Winter | ... Brighton |
| Botanic Gardens | ...British Guiana | Thos. Christy & Co. | ... London |
| " " " | ...Jamaica | Captain Short | ... Tobago |
| " " " | ...Grenada | Vilmorin Andrieux & Cie | ... Paris |
| " " " | ...St. Lucia | Siebrecht & Wadley | ... New York |
| " " " | ...St. Kitts | Haage & Schmidt | ... Germany |
| " " " | ...Ceylon | Damman & Co. | ... Italy |
| " " " | ...Sydney | Dr. Ernst | ...Caraccas |
| " " " | ...Adelaide | Captain Smith | ...Barbados |
| " " " | ...St. Vincent | | |
| " " " | ...Port Darwin | | |
| " " " | ...Brisbane | | |
| " " " | ...Melbourne | | |
| " " " | ...Straits Settlements | Customs Department | ...Trinidad |
| " " " | ...Antigua | Rev. Father Wolseley | " " " |
| " " " | ...Mauritius | Police Hospital | " " " |
| " " " | ...Hong Kong | Colonial Hospital | " " " |
| " " " | ...Lagos | H. M. S. "Talbot" | " " " |
| " " " | ...Dominica | H. W. C. Dihm, Esq. | " " " |
| " " " | ...Barbados | J. P. Bain, Esq. | " " " |
| " " " | ...Java | Government Farm | " " " |
| " " " | ...Accra | Mr. Brown | " " " |
| " " " | ...Bombay | Llanos & Co. | " " " |
| " " " | ...Fiji | Mrs. Massy | " " " |
| " " " | ...Saharunpur | District Medical Officer, Couva | " " " |
| " " " | ...Bangalore | Government Railway Stations | " " " |
| " " " | ...Natal | Police Head Quarters | " " " |
| " " " | ...Madras | Borough Council | " " " |
| " " " | ...Singapore | Warden Savana Grande | " " " |
| " " " | ...Calcutta | " Tunapuna | " " " |
| " " " | ...Glasgow | Hon'ble Wm. Gordon Gordon | " " " |
| " " " | ...Gambia | E. M. Lazare, Esq. | " " " |
| " " " | ...British Honduras | G. W. Arkless, Esq. | " " " |
| " " " | ...Cape Colony | Aranguez Estate | " " " |
| " " " | ...Montserrat | Philippine Estate | " " " |
| " " " | ...Old Calabar | St. Madeleine Estate | " " " |
| " " " | ...Sierra Leone | Tenant's Estate | " " " |
| " " " | ...Berbice | Forres Park Estate | " " " |
| " " " | ...Martinique | Craignish Estate | " " " |

APPENDIX II.

Plant and Seed Exchange.

Plants and seeds were received from correspondents according to the following list, which forms annually a permanent record of introductions made, and is also an acknowledgement to our correspondents in the various institutions which favour us with exchanges, and present similar returns:—

| NAMES. | NAMES. |
|---|---|
| <p style="text-align: center;">From Royal Gardens, Kew.</p> <p>Apocynum venetum Copernicia cerifera Perak Lemon Kickxia Africana Monodora myrsinica Ficus altissima Dracaena sp. Asparagus Sprengeri Bambusa vulgaris, var. constrictinoda Bertonia vars. Bowenia spectabilis Canella alba Cinnamomum Cassia Cryptostegia madagascariensis Cyrstostachys Renda " Lacca Dracaena terminalis, var. bellula Ficus Canonii " irregularis Hernandia ovigera Hibiscus Archeri Jasminum sambac Labisia malouiana Orbignya Sagotii Pentadesmia butyracea Piper porphyrophyllum Pseudophoenix Sargentii Ptychoraphis angusta Raphia vinifera Rondeletia latifolia Sonerila vars. Strophanthus bullenianus " petersianus Zamia pumila Abutilon " Golden Fleece" " " Purity" " " Sanglant" " vexillarium, var. variegatum Aphelandra aurantiaca, var. Roezii Begonia carminata " coccinea " " Gloire de Jouy" " Lubbersii " " M. de Lessops" " olbia " " President Carnot" " semperflorens, var. gigantea-rosea Carex Morrowii Cleyera japonica, var. variegata Citrus aurantiaca, var. (Otaheite Orange) Crinum Woodrowii Rhododendron Fordii Fuchsia "Telegraphe" Ficus elastica, var. variegata Humulus lupulus, var. variegatus Hypericum Moserianum, var. tricolor Japanese Sugar Cane Kniphofia Northii Lantana "Saraphin" Musa sapientum, var. oleracea Rose "Crimson Rambler" Scutellaria mociniana Senecio macrophylla Browallia Jamesoni Tecoma Smithii Datura flava Clitoria ternatea Ruellia tuberosa Kigelia pinnata Antigonon leptopus Hibiscus collinus Ficus racemosa Solanum seaforthianum</p> | <p style="text-align: center;">From Royal Gardens, Kew.—Continued.</p> <p>Bauhinia acuminata Adansonia digitata Lagerstroemia flos-reginae Kleinhowia hospita Cassia auriculata Anogeissus acuminata Colubrina asiatica Nannorrhops Ritcheana Calamus tenuis Caesalpinia minax, var. burmanica Mysore Cardamom Asparagus decurrens</p> <p style="text-align: center;">From Botanic Gardens, British Guiana.</p> <p>Nelumbium luteum Orbignya Sagotii Astrocaryum gynacanthum Euterpe stenophylla Attalea sp. Acrocomia lasiospatha Victoria regia Phaseolus semi-erectus Triplaris surinamensis Sabal umbraculifera Astrocaryum sp. Socratea exorrhiza Calyptrogyna Swartzii Verschaffeltia splendida Aiphanes corallina Latania Commersonii Pritchardia Thurstonii Aristolochia ridicula " tagala Passiflora glandulosa " Jenmani Norantea guianensis Porana tuberosa Jacquemontia violacea Celastrus paniculatus Aristolochia semi-caudata Petraea volubilis " alba Solanum sp. Ampelopsis quinquefolia Odontadenia speciosa Jasminum angulare Creeper (unnamed) Phaleria laurifolia Brownea sp. Clitoria sp. Tecoma jasminoidea Bignoniaceae</p> <p style="text-align: center;">From Botanic Gardens, Natal.</p> <p>Monsonia biflora Celtis Kraussiana Littonia modesta Agapanthus umbellatus Anona senegalensis Xanthoxylon capense Ophiocaulon gummifera Crotolaria capensis Strelitzia angusta Chlorocodon Whitei Drimys neritiformis Scilla rigidifolia Albizia fastigiata Capparis Zeyheri</p> |

APPENDIX II.—Continued.

| NAMES. | NAMES. |
|---|--|
| From Botanic Gardens, Natal.—Contd. | From Botanic Gardens, Sydney.—Contd. |
| <i>Carissa grandiflora</i> <i>Luffa spherica</i> <i>Albica Wyliei</i> <i>Oncoba Kraussiana</i> <i>Tephrosia canescens</i> <i>Antidesma venosum</i> <i>Asparagus Sprengeri</i> <i>Calodendron capense</i> <i>Hibiscus tiliacens</i> <i>Cyrtanthus Mackenii</i> | <i>Acacia hispida</i> " <i>linifolia</i> " <i>prominens</i> " <i>Baileyana</i> <i>Boronia ledifolia</i> <i>Hovea longifolia</i> <i>Dodonea triquetra</i> <i>Dillwynia floribunda</i> <i>Hibbertia volubilis</i> <i>Dillwynia ericifolia</i> <i>Bassiaea Stephensonii</i> <i>Callistemon linearis</i> " <i>lanceolatus</i> " <i>pithyoides</i> <i>Conospermum taxifolium</i> <i>Bassiaea heterophylla</i> <i>Frenela Muelleri</i> <i>Kunzea corifolia</i> <i>Clematis glycinoides</i> <i>Pultenaea stipularis</i> <i>Helichrysum diosmifolium</i> <i>Hibbertia dentata</i> <i>Patersonia glabrata</i> <i>Actinotus Helianthi</i> <i>Leptospermum flavescens</i> <i>Kennedyia rubicunda</i> " <i>monophylla</i> <i>Billardiera scandens</i> <i>Cassia Brewsteri</i> <i>Ficus macrophylla</i> " <i>rubiginosa</i> " <i>robusta</i> <i>Grevillea robusta</i> " <i>sericea</i> <i>Elaeodendron australe</i> <i>Cedrela australis</i> |
| From Botanic Gardens, Jamaica. | |
| <i>Eupatorium (Critonia) dalea</i> <i>Raphia tædigera</i> | |
| From Botanic Gardens, Grenada. | |
| <i>Caryota urens</i> <i>Nelumbium speciosum</i> <i>Kentia McArthurii</i> <i>Calamus asperimus</i> <i>Thrinax radiata</i> " <i>parviflora</i> <i>Stevensonia grandifolia</i> <i>Anona squamosa, purple var.</i> <i>Hyophorbe Verschaffeltii</i> | |
| From Botanic Gardens, Ceylon. | |
| <i>Dendrobium Macarthise</i> <i>Adiantum Fergusoni</i> <i>Doodia dives</i> <i>Acrostichum Wilkesianum</i> <i>Angiopteris evecta</i> <i>Adiantum hispidulum</i> <i>Gleichenia linearis</i> <i>Asplenium tenerum</i> <i>Nephrolepis Duffii</i> <i>Acrostichum appendiculatum</i> <i>Nephrodium Trimeni</i> <i>Asplenium esculentum</i> " <i>Wightianum</i> <i>Hemitelia Walkersæ</i> <i>Dicksonia flaccida</i> <i>Cyathea Hookeri</i> <i>Ceratopteris thalictroides</i> <i>Alsophila crinita</i> <i>Acrostichum scandens</i> <i>Osmunda javanica</i> <i>Helminthostachys zeylanica</i> <i>Drymoglossum heterophyllum</i> <i>Mysore Cardamom</i> | |
| From Botanic Gardens, St. Lucia. | |
| <i>Mangifera indica, var. "Père Louis"</i> <i>Dioscorea, 10 varieties</i> | |
| From Botanic Gardens, Hong Kong. | |
| <i>Desmodium tortuosum</i> <i>Rauwolfia chinensis</i> <i>Rhododendron Fordii</i> <i>Hibiscus coccineus</i> <i>Cupressus funebris</i> <i>Uraria crinita</i> <i>Enkianthus quinqueflorus</i> <i>Poinciana alata</i> <i>Aristolochia Tagala</i> <i>Habenaria militaris</i> | |
| From Botanic Gardens, Sydney. | |
| <i>Eucalyptus pilularis</i> " <i>capitata</i> " <i>botryoides</i> <i>Acacia longifolia</i> | From Botanic Gardens, Port Darwin. |
| | <i>Albizzia procera</i> <i>Gossypium flaviflorum</i> <i>Dodonea lanceolata</i> <i>Phillydium lanuginosum</i> <i>Urena lobata</i> <i>Convolvulus parviflorus</i> <i>Cassia occidentale</i> <i>Acacia holosericea</i> <i>Petalostigma quadriloculare</i> <i>Grevillea heliosperma</i> <i>Mucuna gigantea</i> <i>Eschynomene sensitiva</i> <i>Adansonia Gregorii</i> |
| | From Botanic Gardens, Singapore. |
| | <i>Pithecolobium bigininum</i> |
| | From Botanic Gardens, Melbourne. |
| | <i>Celastrus australis</i> <i>Cordyline australis</i> <i>Casuarina distyia</i> <i>Sterculia acerifolia</i> " <i>diversifolia</i> <i>Hibiscus splendens</i> <i>Hakea gibbosa</i> <i>Eucalyptus platypus</i> " <i>macrandra</i> " <i>calophylla</i> " <i>ficifolia</i> " <i>pilularis</i> <i>Acacia itesphylla</i> " <i>saligna</i> " <i>dealbata</i> " <i>salicina</i> " <i>cultriformis</i> " <i>phillyrsoides</i> <i>Callistemon phonicus</i> " <i>rigidus</i> <i>Doryanthes Guilfoylia</i> " <i>Falmeri</i> |

APPENDIX II.—Continued.

| NAMES. | NAMES. |
|---|---|
| <p style="text-align: center;">From Botanic Gardens, Melbourne. —Continued.</p> <p>Pittosporum Ralpii " Buchananii Metrosideros tomentosa Prostanthera lasianthos Alyxia buxifolia Kennedy rubicunda Eustrephus latifolius Chorizema cordatum Geitonoplesium cymosus Swainsonia galegifolia var. Angophora subvelutina Hardenbergia Comptoniana Hymenosporum flavum Sophora tetraptera, var. microphylla</p> | <p style="text-align: center;">From Botanic Gardens, Barbados.</p> <p>Furcraea macrophylla</p> <p style="text-align: center;">From J. O'Brien, Esq., London.</p> <p>Dendrobium Wardianum " Devonianum " Falconeri " thyrsiflorum " sanguinolentum " Farmerii " Dalhouscianum " chrysotoxum " Findleyanum " superbum giganteum " caespitatum " Hildebrandtii</p> |
| <p style="text-align: center;">From Botanic Gardens, Calcutta.</p> <p>Caesalpinia minax, var. burmanica Saraca cauliflora Ficus altissima</p> | <p>Dendrobium Phalaenopsis Schrodere Marmodes pardenium Vanda Roxburgi " amesiana Ærides Lobbii Coelogyne massangeana Aerides quinquevulnerum Cymbidium Lowianum Cattleya Aclandiae</p> |
| <p style="text-align: center;">From Botanic Gardens, British Honduras.</p> <p>Malvaceæ</p> | <p style="text-align: center;">From Technological Museum, Sydney.</p> <p>Endiandra discolor Cryptocarya glaucescens Pittosporum rhombifolium Ochrosia Poweri</p> |
| <p style="text-align: center;">From Botanic Gardens, Bangalore.</p> <p>Cryptostegia grandiflora Æschynomene indica Rosa moschata Rhamnus sp. Desmodium sp. Sterculia urens Smilax auriculata Milletia rasemosa Cedrela Toona, var. serrata Prunus padus Cornus sp. Lettsamia elliptica</p> | <p style="text-align: center;">From C. Federol, Esq.</p> <p>Catasetum Bungeirothii Cattleya Coryanthes Stanhopea Catasetum Cycnoches Catasetum Aroides Seeds unnamed</p> |
| <p style="text-align: center;">From Botanic Gardens, Brisbane.</p> <p>Acacia stenophylla " Baileyana</p> | <p style="text-align: center;">From E. M. Lazare, Esq.</p> <p>Stephanotis floribunda</p> |
| <p style="text-align: center;">From Botanic Gardens, Saharunpur.</p> <p>Phoenix humile Calamus tenuis Nannorhops Ritcheana</p> | <p style="text-align: center;">From G. W. Arkless, Esq.</p> <p>Manicaria saccifera Mauritia setigera</p> |

APPENDIX III.

DAILY RECORD OF SUNSHINE OBSERVATIONS AT ROYAL BOTANIC GARDENS.

| DATE. | JAN. | FEBY. | MARCH. | APRIL. | MAY. | JUNE. | JULY. | AUGUST. | SEPT. | OCTR. | NOVR. | DECR. |
|-------------|-----------|------------|------------|-----------|------------|-----------|------------|------------|------------|----------|------------|-----------|
| | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. | H. M. |
| 1st ... | 8 22 | 6 6 | 7 18 | 6 32 | 6 15 | 27 | 6 30 | 4 2 | 11 | 7 45 | 1 36 | 3 21 |
| 2nd ... | 9 26 | 5 53 | 8 22 | 6 24 | 6 54 | Nil. | 8 58 | 4 32 | 4 37 | 6 56 | 7 46 | 43 |
| 3rd ... | 9 3 | 8 57 | 1 45 | 5 45 | 7 7 | Nil. | 3 | 8 50 | 5 43 | 7 34 | 3 30 | 2 30 |
| 4th ... | 8 | 8 50 | 3 36 | 7 14 | 6 7 | 1 | Nil. | 5 30 | 3 45 | 7 34 | 12 | 1 45 |
| 5th ... | 8 35 | 6 16 | 1 59 | 7 19 | 3 16 | Nil. | 8 40 | 7 1 | 2 35 | 3 | 12 | 2 24 |
| 6th ... | 6 38 | 1 9 | 6 26 | 7 48 | 8 43 | 50 | 9 22 | 5 37 | 1 23 | 4 49 | 7 | 4 |
| 7th ... | 5 32 | 8 42 | 5 45 | 48 | 9 4 | 2 20 | 3 12 | 2 52 | 6 30 | 13 | 4 21 | 15 |
| 8th ... | 5 17 | 6 7 | 6 15 | 6 41 | 6 15 | 6 13 | 6 36 | 8 8 | 1 31 | 6 20 | 37 | 5 |
| 9th ... | 2 | 4 15 | 6 52 | 7 22 | 8 32 | 4 41 | 37 | 1 20 | 2 9 | 3 30 | 7 40 | 8 30 |
| 10th ... | 3 50 | 4 17 | 8 46 | 7 30 | 6 29 | 3 48 | Nil. | Nil. | 3 52 | 4 1 | 8 37 | 9 10 |
| 11th ... | 7 | 8 21 | 3 46 | 7 26 | 8 53 | 7 44 | 45 | 2 50 | 4 39 | 7 54 | 3 17 | 3 37 |
| 12th ... | 5 15 | 58 | 4 15 | 7 17 | 6 46 | 8 45 | 8 21 | 4 45 | 5 9 | 6 9 | 8 30 | 3 45 |
| 13th ... | 4 49 | 7 15 | 3 43 | 7 | 8 4 | 4 19 | 6 4 | 1 9 | 6 1 | 6 30 | 4 30 | 7 41 |
| 14th ... | 4 47 | 4 17 | Nil. | 6 25 | 2 15 | 5 28 | 8 16 | 7 1 | 2 59 | 4 36 | 8 31 | 7 |
| 15th ... | 6 42 | 5 47 | 5 49 | 5 46 | 4 36 | 8 26 | 7 17 | 6 56 | 3 38 | 7 40 | 8 25 | 6 35 |
| 16th ... | 9 30 | 5 47 | 6 52 | 3 37 | 7 15 | 6 59 | 1 28 | 5 7 | 4 54 | 7 30 | 7 20 | 5 27 |
| 17th ... | 6 32 | 5 38 | 6 40 | 1 21 | 5 | 4 15 | 2 8 | 7 31 | 2 9 | 8 29 | 3 44 | 3 13 |
| 18th ... | 9 30 | 6 | 6 59 | 1 51 | 2 8 | 2 | 7 41 | Nil. | 5 | 8 17 | 7 3 | 7 26 |
| 19th ... | 7 15 | 5 34 | Nil. | 1 5 | 5 35 | 44 | Nil. | 2 46 | 1 37 | 7 25 | No Recd. | 1 27 |
| 20th ... | 5 15 | 4 2 | 6 18 | 6 50 | 5 44 | 2 8 | 4 41 | 5 23 | 6 15 | 7 22 | No Recd. | 1 50 |
| 21st ... | 3 8 | 3 18 | 7 30 | 3 26 | 55 | 4 8 | 6 52 | 4 45 | 7 10 | 8 41 | 7 24 | 7 7 |
| 22nd ... | 9 15 | 3 48 | 53 | 2 15 | 5 52 | Nil. | 5 16 | 8 21 | 48 | 6 52 | 6 | 3 15 |
| 23rd ... | 9 22 | 8 19 | 7 8 | 6 30 | 9 7 | 5 43 | 7 59 | 6 13 | 3 10 | 2 35 | 42 | Nil. |
| 24th ... | 6 46 | 3 49 | 5 37 | 8 14 | 3 40 | 7 19 | 8 23 | 3 14 | 4 55 | 8 1 | 4 30 | No Recd. |
| 25th ... | 7 31 | 7 29 | Nil. | 5 | Nil. | 4 20 | 7 28 | 3 14 | 2 35 | 6 | 4 34 | No Recd. |
| 26th ... | 9 | 7 6 | 2 | 5 55 | 4 59 | 6 43 | 8 47 | 1 15 | 59 | 7 5 | 4 27 | 7 23 |
| 27th ... | 4 14 | 3 23 | 3 51 | 8 12 | 8 14 | 4 30 | Nil. | 4 9 | 5 4 | 7 58 | 1 41 | 3 51 |
| 28th ... | 4 51 | 4 15 | 21 | 7 39 | 9 4 | 3 45 | Nil. | 3 15 | 8 21 | 6 50 | 5 31 | 1 30 |
| 29th ... | 8 7 | ... | 1 25 | 6 45 | 6 10 | Nil. | 2 | 2 23 | 5 43 | 5 56 | 4 | 8 50 |
| 30th ... | 6 30 | ... | 1 20 | 6 7 | 48 | 1 29 | 4 55 | 56 | 57 | 80 | 5 43 | 1 23 |
| 31st ... | 7 5 | ... | 5 10 | ... | 1 3 | ... | 3 50 | 2 27 | ... | 2 35 | ... | 6 32 |
| Totals ... | 204 7 | 155 43 | 131 41 | 178 4 | 174 50 | 108 4 | 149 6 | 131 37 | 114 19 | 136 35 | 137 28 | 130 30 |
| Daily Means | 6h 35' 3" | 5h 33' 40" | 4h 14' 52" | 5h 58' 8" | 5h 38' 23" | 3h 36' 8" | 4h 43' 34" | 4h 14' 44" | 3h 43' 38" | 6h 1' 7" | 4h 54' 34" | 4h 30' 0" |

APPENDIX IV.

ROYAL BOTANIC GARDENS, ANNUAL RAINFALL, 1862 TO 1897. INCLUSIVE.

| YEAR. | JAN. | FEB. | MAR. | APRIL. | MAY. | JUNE. | JULY. | AUG. | SEPT. | OCT. | NOV. | DEC. | Total Rainfall in each year in Inches. | Decades. |
|--|-------|------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--|---|
| | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | Ins. | | |
| 1862 | 0.00 | .66 | .77 | .25 | 1.41 | 8.47 | 10.36 | 9.57 | 11.97 | 6.60 | 10.06 | 3.03 | 63.15 | In the decade 6 years above and 4 years below 30 years average. |
| 1863 | 1.54 | 2.71 | 1.45 | .85 | 1.26 | 9.12 | 10.12 | 10.53 | 12.11 | 6.24 | 4.30 | 6.57 | 66.80 | |
| 1864 | 2.51 | .53 | .36 | .04 | 8.15 | 4.06 | 7.17 | 12.06 | 8.04 | 6.53 | 5.94 | 6.61 | 62.90 | |
| 1865 | 2.62 | 3.20 | 1.07 | 7.98 | 3.22 | 5.64 | 10.35 | 14.83 | 7.32 | 14.62 | 4.81 | 9.62 | 85.28 | |
| 1866 | 2.24 | 3.91 | 1.44 | 1.09 | 1.45 | 6.59 | 7.83 | 12.34 | 5.87 | 10.11 | 8.17 | 6.32 | 67.86 | |
| 1867 | 1.31 | 6.36 | .83 | 1.32 | 2.33 | 5.30 | 12.20 | 15.21 | 10.45 | 7.87 | .87 | 2.71 | 66.56 | |
| 1868 | 2.06 | .82 | 3.20 | .64 | 4.17 | 7.78 | 11.35 | 6.73 | 5.46 | 4.66 | 8.31 | 1.03 | 56.21 | |
| 1869 | .08 | .93 | .74 | .41 | .69 | 5.52 | 10.17 | 8.74 | 8.86 | 5.15 | 6.30 | 5.37 | 53.46 | |
| 1870 | 2.61 | .56 | 1.46 | 1.51 | 4.65 | 8.81 | 11.91 | 9.00 | 10.63 | 3.98 | 5.94 | 8.29 | 69.35 | |
| 1871 | 6.62 | 1.40 | 2.89 | .92 | 3.97 | 8.84 | 11.73 | 12.97 | 7.87 | 4.37 | 10.73 | 3.27 | 75.58 | |
| 1872 | 1.45 | .07 | .74 | .39 | 3.14 | 7.09 | 5.45 | 10.82 | 3.07 | 4.80 | 9.39 | 3.04 | 49.95 | In the decade 6 years above and 6 years below 30 years average. |
| 1873 | 1.78 | 1.08 | 1.98 | .53 | 0.00 | 4.31 | 5.04 | 8.37 | 5.80 | 10.34 | 3.48 | 1.31 | 44.02 | |
| 1874 | 3.47 | 1.98 | 3.67 | 5.16 | 2.51 | 12.28 | 12.28 | 11.20 | 9.38 | 6.42 | 3.66 | 4.29 | 76.28 | |
| 1875 | 3.39 | .91 | .56 | .42 | 2.61 | 4.15 | 12.62 | 7.22 | 11.95 | 10.85 | 3.74 | 2.48 | 60.90 | |
| 1876 | 3.26 | 1.03 | 1.73 | 1.67 | 6.65 | 11.17 | 12.23 | 15.18 | 12.03 | 7.04 | 5.95 | 3.96 | 81.95 | |
| 1877 | 2.14 | 0.00 | 7.46 | 3.38 | 3.19 | 8.43 | 8.35 | 12.94 | 6.39 | 6.68 | 7.66 | 5.48 | 72.10 | |
| 1878 | 3.44 | .70 | 0.00 | 3.22 | 4.99 | 5.78 | 5.42 | 8.88 | 11.15 | 5.89 | 8.72 | 3.05 | 61.24 | |
| 1879 | 1.52 | 2.76 | 4.56 | 3.03 | 3.08 | 14.92 | 6.86 | 10.35 | 6.15 | 3.54 | 4.28 | 4.38 | 65.43 | |
| 1880 | 11.72 | 6.53 | .67 | 2.32 | 3.90 | 7.83 | 6.30 | 17.39 | 7.47 | 5.74 | 10.51 | 1.96 | 82.34 | |
| 1881 | .57 | .65 | .23 | 1.60 | 4.66 | 11.05 | 7.82 | 10.90 | 10.59 | 3.36 | 12.06 | 2.23 | 65.72 | |
| 1882 | 1.33 | 2.38 | .73 | 1.57 | 3.74 | 6.33 | 5.93 | 8.40 | 4.93 | 5.86 | 10.29 | 1.50 | 52.99 | |
| 1883 | 1.56 | .71 | .26 | 3.37 | 5.89 | 10.91 | 13.66 | 10.26 | 5.53 | 3.99 | 6.08 | 8.30 | 70.50 | |
| 1884 | 3.43 | 2.50 | 4.40 | 1.51 | 2.91 | 6.84 | 5.71 | 8.70 | 5.03 | 5.05 | 5.14 | 5.66 | 56.88 | |
| 1885 | 1.30 | .89 | 1.49 | .43 | 5.27 | 3.44 | 5.87 | 4.56 | 6.08 | 4.08 | 5.37 | 4.44 | 43.22 | |
| 1886 | 3.32 | 1.97 | 3.27 | 3.83 | 4.49 | 9.70 | 17.48 | 8.15 | 6.73 | 12.59 | 8.54 | 6.75 | 86.82 | |
| 1887 | 2.69 | 1.46 | 1.67 | 1.08 | 3.98 | 7.40 | 5.51 | 9.93 | 5.07 | 5.84 | 7.60 | 11.86 | 64.09 | |
| 1888 | 8.37 | 1.79 | 2.41 | 2.28 | 8.46 | 11.92 | 6.89 | 7.02 | 5.53 | 5.06 | 7.76 | 2.95 | 65.44 | |
| 1889 | 0.94 | 0.35 | 4.16 | 1.05 | 6.34 | 11.66 | 12.14 | 11.73 | 3.76 | 6.30 | 7.38 | 7.48 | 73.79 | |
| 1890 | 7.76 | 0.51 | 2.09 | 7.62 | 5.14 | 9.68 | 12.89 | 11.65 | 3.37 | 10.98 | 5.93 | 5.28 | 82.90 | |
| 1891 | 3.17 | 0.92 | 0.03 | 1.44 | 2.54 | 5.54 | 11.88 | 4.26 | 7.44 | 5.77 | 6.66 | 4.09 | 53.74 | |
| Avg. Monthly Rainfall for 30 years, 1862-'91 | 2.94 | 1.69 | 1.87 | 2.03 | 3.65 | 8.04 | 9.45 | 10.32 | 7.53 | 6.67 | 6.86 | 4.81 | *65.91 | |
| 1892 | 1.93 | 2.19 | 1.85 | 7.59 | 11.55 | 16.26 | 15.55 | 9.21 | 3.57 | 11.49 | 5.40 | 4.69 | 91.14 | |
| 1893 | 3.43 | 1.85 | 0.19 | 3.61 | 11.35 | 10.19 | 13.28 | 16.32 | 11.73 | 5.47 | 7.84 | 7.23 | 92.49 | |
| 1894 | 3.22 | 2.36 | 3.12 | 1.22 | 2.69 | 3.26 | 4.53 | 12.06 | 5.48 | 3.93 | 7.23 | 3.15 | 52.31 | |
| 1895 | 2.52 | 1.33 | 2.27 | 2.52 | 2.11 | 5.00 | 2.57 | 4.86 | 5.69 | 10.89 | 15.15 | 7.32 | 62.23 | |
| 1896 | 7.08 | .88 | 1.59 | 2.33 | 1.62 | 10.29 | 6.35 | 7.66 | 6.46 | 6.05 | 9.81 | 6.33 | 66.45 | |
| 1897 | 1.67 | .75 | 3.96 | .26 | 5.58 | 11.19 | 13.88 | 7.90 | 9.83 | 8.87 | 9.39 | 4.40 | †77.68 | |

*Average Annual Rainfall for 30 years—1862 to 1891

†Average last 6 years—1892 to 1897

= 65.91 inches.

= 73.71 "

J. H. HART, F.L.S.,
Superintendent Botanical Department.

APPENDIX V.

METEOROLOGICAL RESULTS FOR 1897, TAKEN AT THE ROYAL BOTANIC GARDENS.

| MONTH. | BAROMETER. | | THERMOMETERS. | | | | | | | | Humidity. | Tension of Aqueous Vapour. | Rainfall. | Dew Point, 7 A.M. | Dew Point, 3 P.M. |
|--------------------------------|-------------------|--------|-------------------------|-------|--------|-------|----------|----------|--|---|----------------|----------------------------|---------------|-------------------|-------------------|
| | REDUCED READINGS. | | DRY & WET BULBS. | | | | Maximum. | Minimum. | Mean Temperature, Blackened Bulb in Vacuo. | Mean Temperature, Thermometer on Grass. | | | | | |
| | 7 A.M. | 3 P.M. | 7 A.M. | | 3 P.M. | | | | | | | | | | |
| | Bar. | Bar. | D. | W. | D. | W. | ° | ° | ° | ° | | | | | |
| January | 29.984 | 29.931 | 71.8 | 71.1 | 84.1 | 78.3 | 87.4 | 69.3 | 156.8 | 68.1 | 84. | .799 | 1.67 | 71.31 | 73.05 |
| February | 30.018 | 29.974 | 70.3 | 68.9 | 84.1 | 75.0 | 87.3 | 67.6 | 157.3 | 65.3 | 76. | .696 | .75 | 67.83 | 69.00 |
| March | 29.986 | 29.928 | 71.7 | 70.3 | 83.7 | 76.1 | 86.7 | 68.8 | 157.3 | 67.4 | 77. | .733 | 3.96 | 69.25 | 71.09 |
| April | 30.006 | 29.946 | 72.8 | 70.7 | 86.8 | 75.4 | 90.3 | 68.7 | 160.5 | 66.8 | 70. | .696 | .26 | 61.95 | 68.11 |
| May | 29.965 | 29.927 | 75.8 | 73.8 | 86.3 | 77.3 | 91.0 | 72.0 | 160.7 | 70.0 | 74. | .772 | 5.58 | 72.38 | 71.45 |
| June | 30.017 | 29.976 | 75.3 | 74.1 | 83.0 | 77.6 | 87.7 | 71.5 | 157.8 | 70.5 | 83. | .826 | 11.19 | 73.24 | 73.99 |
| July | 30.012 | 29.959 | 75.0 | 74.0 | 82.8 | 77.6 | 87.6 | 70.6 | 153.6 | 69.8 | 83. | .826 | 18.88 | 73.28 | 74.22 |
| August | 30.005 | 29.949 | 75.6 | 74.6 | 83.8 | 78.3 | 88.0 | 71.6 | 155.6 | 71.0 | 83. | .854 | 7.90 | 73.89 | 74.67 |
| September | 30.010 | 29.947 | 74.8 | 73.8 | 82.0 | 77.7 | 87.0 | 71.5 | 156.5 | 70.7 | 86. | .840 | 9.83 | 73.08 | 74.82 |
| October | 29.976 | 29.897 | 75.0 | 73.9 | 83.7 | 78.2 | 88.9 | 71.6 | 157.4 | 70.5 | 83. | .840 | 8.87 | 73.11 | 74.57 |
| November | 29.945 | 29.872 | 74.0 | 72.0 | 82.2 | 76.4 | 86.8 | 70.8 | 155.0 | 70.0 | 83. | .798 | 9.39 | 72.10 | 72.52 |
| December | 29.964 | 29.905 | 73.2 | 72.2 | 82.1 | 76.6 | 86.8 | 70.3 | 150.5 | 69.0 | 83. | .785 | 4.40 | 71.46 | 72.92 |
| Monthly Average for year | 29.990 | 29.934 | 73.77 | 72.45 | 83.71 | 77.04 | 87.91 | 70.35 | 156.58 | 69.09 | 80. | .788 | 6.47 | 71.67 | 72.53 |
| Mean daily height of Barometer | 29.962 inches. | | Mean Annual Temperature | | | | 79.13 | | | | Total Rainfall | | 77.68 inches. | | |

APPENDIX VI.

The Regulations in force for management of the Gardens are published in the Report for general information, as below :—

ROYAL BOTANIC GARDENS.

Regulations made under "The Royal Botanic Gardens Ordinance, 1894."

1. The Gardens, except as provided by these Regulations or otherwise specially ordered by the Governor, shall be open to Visitors from 6 a.m. to sunset, and on moonlight evenings to 8 p.m.
2. The portions of the Gardens attached to the Governor's and Superintendent's residences, or reserved as Nurseries and for other administrative purposes, shall be as marked on the Plan referred to in Section 2 of "The Royal Botanic Gardens Ordinance, 1894."
3. The Nurseries shall be open to Visitors, and for the sale of Plants, from 8 a.m. to 4 p.m., but shall be closed on Saturdays from 1 p.m., and on Sundays and Public Holidays.
4. Except as provided in Regulation 3, the special permission of the Superintendent is required for admission to the portions of the Gardens mentioned in Regulation 2.
5. Visitors must be completely and properly clad, and must conduct themselves in an orderly manner.
6. No Visitor shall carry any load through or into the Gardens, or shall sell or expose for sale any article of Merchandize or refreshment, or shall deposit bottles, paper or rubbish of any kind within the Gardens.
7. No wheeled vehicles of any description (except perambulators) and no animals (except dogs in charge of their owners) shall be allowed in the Gardens.
8. No Visitor shall cause annoyance, inconvenience, or obstruction to other Visitors.
9. No Visitor shall pick, handle, gather, cut, or collect any fruit, flower, plant, branch or portion thereof, or carry away fallen fruit, or in any way injure any tree, plant, or shrub growing in any part of the Gardens.
10. No Visitor shall climb or sit upon the fences, or swing or climb upon the trees or branches, or write, cut, or carve upon, or otherwise deface, the benches or buildings in the Gardens, or remove, or break, or injure, the fences or boundary marks, or remove, injure, or deface the notice-boards or notices.
11. Visitors shall not use firearms or other weapons of destruction in the Gardens, and shall not hunt animals, kill or catch birds, or take birds' eggs or catch butterflies or other insects in the Gardens.
12. Games of all kinds are prohibited in those parts of the Gardens open to Visitors.
13. Public meetings or speaking, for political or other purposes, are not allowed in the Gardens.
14. Any Visitor acting contrary to these Regulations may be removed from the Gardens, in addition to which such persons may be prosecuted under "The Botanic Gardens Ordinance, 1894," and, on conviction, will incur a penalty not exceeding Ten Pounds, or imprisonment in default of payment not exceeding six months, with or without hard labour.

Made by the Governor in the Executive Council this 23rd day of November, 1894.

S. W. KNAGGS,
Clerk of the Executive Council.

Approved by the Legislative Council this 21st day of December, 1894.

C. J. ROOKS,
Actg. Clerk of the Legislative Council.

Ordered to be published for general information.

J. H. HART, F.L.S.,
Superintendent.

1st January, 1895.

APPENDIX VII.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING
31ST DECEMBER, 1897.

| No. of Station | Diameter of Gauge, Govt. or Private. | STATIONS. | January. | Febry. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|----------------|--------------------------------------|---|----------|--------|--------|----------|-------|-------|-------|---------|-------|----------|-------|-------|--------|
| 1 | In. 8 c | St. Ann's—Royal Botanic Gardens ... | 1.67 | .75 | 3.96 | .26 | 5.53 | 11.19 | 13.88 | 7.90 | 9.83 | 8.87 | 9.39 | 4.40 | 77.68 |
| 52 | 8 c | Port-of-Spain—Police Station ... | 1.88 | .78 | 2.93 | .16 | 6.77 | 10.93 | 12.35 | 7.18 | 10.66 | 11.11 | 10.76 | 5.82 | 81.33 |
| 64 | 8 c | Royal Gaol ... | 2.18 | 1.07 | 3.60 | .23 | 5.78 | 10.26 | 8.65 | 6.97 | 7.83 | 10.14 | 8.51 | 4.34 | 69.56 |
| 4 | 5 | St. Joseph—Warden's Office, Queen-st. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 5 | 5 | St. Joseph—Police Station ... | 3.35 | 1.16 | 1.98 | .35 | 7.78 | 10.94 | 7.97 | 7.69 | 7.85 | 6.87 | 10.21 | 5.17 | 71.32 |
| 6 | ... | Colonial Hospital ... | ... | ... | ... | ... | 5.18 | 10.36 | 8.93 | 8.16 | 7.11 | 10.70 | ... | ... | ... |
| 44 | 8 c | Arouca—Bon Air ... | 3.12 | 1.34 | 7.01 | .25 | 9.18 | 15.95 | 11.46 | 11.94 | 10.94 | 7.41 | 10.29 | 7.69 | 96.58 |
| 9 | 8 c | Cumutio—Santa Teresa ... | 5.74 | 4.92 | 3.57 | .69 | 10.16 | 15.35 | 14.33 | 11.98 | 11.71 | 8.27 | 13.58 | 9.33 | 109.63 |
| 7 | 5 | Arima ... | 5.09 | 1.01 | 4.55 | .75 | 13.28 | 18.41 | ... | ... | ... | ... | ... | ... | ... |
| 11 | 5 | Toco—La Sagasse ... | 2.59 | 1.57 | .77 | .03 | 5.38 | 11.51 | 10.53 | 10.27 | 6.50 | 5.48 | ... | ... | ... |
| 10 | 5 c | Toco—Police Station ... | 5.51 | 2.87 | 2.24 | .11 | 5.81 | 14.48 | 12.67 | 12.07 | 6.81 | 5.84 | 19.65 | 7.48 | 95.54 |
| 14 | 5 | Conva—Exchange Village ... | 1.76 | 1.84 | 1.38 | No rain. | 6.34 | 7.53 | 8.33 | 12.38 | 4.11 | 4.75 | 5.40 | 5.74 | 59.27 |
| 15 | 5 c | Conva—Police Station ... | 3.56 | 2.93 | 3.15 | .17 | 6.98 | 7.50 | 13.03 | 14.66 | 6.07 | 6.75 | 6.15 | 5.86 | 76.81 |
| 19 | 5 | Montserrat—Tortuga Estate ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 20 | 8 c | La Reunion Estate—Caroni (Arima) ... | 4.25 | 2.67 | 8.36 | .51 | 7.19 | 12.85 | 15.71 | 10.37 | 11.88 | 6.24 | 10.25 | 10.74 | 101.02 |
| 18 | 5 c | Montserrat—Police Station ... | 2.57 | 2.45 | 3.51 | .35 | 5.87 | 12.01 | 10.93 | 10.27 | 6.66 | 4.37 | 6.72 | 4.88 | 70.59 |
| 25 | 5 c | Oropuche—Police Station ... | 3.39 | 1.92 | 5.05 | .92 | 4.74 | 8.32 | 5.46 | 12.29 | 6.86 | 7.81 | 7.63 | 4.73 | 69.42 |
| 26 | 8 | Savana Grande North—Elswick Village ... | 3.78 | 3.56 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 27 | 5 c | Centros—Police Station ... | 7.02 | 1.57 | 4.25 | 1.90 | 2.74 | 7.36 | 11.15 | 5.59 | 2.40 | 2.85 | 7.18 | 10.59 | 64.60 |
| 74 | 8 c | Torreclilla—Arima ... | 5.33 | 1.91 | 5.15 | 1.07 | 14.14 | 17.11 | 14.42 | 13.70 | 13.54 | 9.75 | ... | ... | ... |
| 2 | 5 | Tucker Valley ... | 4.34 | 1.29 | 1.74 | .12 | 5.52 | 12.77 | 12.73 | 13.58 | 13.64 | 4.93 | 6.71 | 12.84 | 90.21 |
| 21 | 8 | Sangre Grande—Sta. Estella Estate ... | 8.21 | 6.06 | 4.79 | 1.10 | 9.83 | 20.63 | 18.67 | 12.10 | 11.63 | 12.86 | 14.68 | 13.40 | 134.16 |
| 22 | 5 c | Princes Town—Police Station ... | 3.28 | 2.69 | 5.04 | .95 | 4.22 | 12.07 | 13.82 | 12.69 | 7.01 | 6.52 | 8.73 | 8.52 | 85.54 |
| 23 | 8 c | Arouca—St. Clair Estate ... | 2.94 | 1.85 | 6.22 | .18 | 8.75 | 14.39 | 10.20 | 12.09 | 11.48 | 7.00 | 8.73 | 7.40 | 91.23 |
| 48 | 8 | Princes Town—Lengua, Los Naraujos ... | 4.04 | 2.22 | 4.50 | .68 | 6.47 | 16.61 | 17.37 | 15.68 | 11.38 | 3.78 | 10.11 | 10.36 | 103.30 |
| 49 | 5 | Warden's Office—Couva ... | ... | ... | ... | ... | ... | ... | ... | ... | 4.86 | 6.17 | ... | ... | ... |
| 16 | 8 | Claxton's Bay—Mt. Pleasant Estate ... | 1.72 | 1.16 | 2.82 | .10 | 4.22 | 7.60 | 9.17 | 10.72 | 2.53 | 4.00 | 4.95 | 6.08 | 59.12 |
| 37 | 5 | Concord Estate—Naparima ... | 2.10 | ... | 5.08 | .82 | 4.58 | ... | ... | ... | ... | ... | ... | ... | ... |
| 32 | 5 c | Mayaro—Police Station ... | 5.39 | 4.77 | 6.38 | .83 | 11.52 | 12.59 | 24.69 | 10.11 | 16.85 | 6.50 | 16.78 | 11.60 | 128.01 |
| 12 | 5 c | Chaguanas—Police Station ... | 2.90 | 1.82 | 4.57 | .15 | 7.58 | 6.97 | 11.16 | 13.93 | 8.30 | 6.65 | 7.02 | 5.83 | 76.88 |
| 13 | ... | Point Galera Light House ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4.50 | ... | ... | ... |
| 60 | ... | Columbia—Cedros (c.w.) ... | 6.20 | 3.85 | 8.63 | 1.27 | .90 | 12.03 | 12.40 | 7.29 | 6.95 | 6.50 | 14.45 | 15.40 | 95.87 |
| 61 | ... | Chaguanas—Retrench (a.r.v.) ... | 2.15 | 2.85 | 4.31 | .64 | 3.35 | 11.08 | ... | 15.30 | 5.85 | ... | ... | ... | ... |
| 8 | 5 c | Tumpuna—Police Station ... | 2.40 | 1.37 | 1.91 | .42 | 2.64 | 6.16 | 6.11 | 5.54 | 5.21 | 2.49 | 4.11 | 3.31 | 41.87 |

APPENDIX VII.—CONTINUED.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING
31st DECEMBER, 1897.

| No. of Station | Diameter of Gauge, Govt. or Private. | STATIONS. | January. | Feb'y. | March. | April. | May. | June. | July. | August. | Sept. | October. | Nov. | Dec. | Total. |
|----------------|--------------------------------------|---|----------|--------|--------|---------|-------|-------|-------|---------|-------|----------|-------|-------|--------|
| 77 | In. 5 | Caroni—McLeod Plain Estate | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 78 | 5 | Caroni—Frederick Estate | 3.31 | 1.85 | 3.53 | .26 | 7.47 | 13.09 | 11.19 | 8.97 | 9.68 | 5.22 | 8.35 | 8.07 | 80.89 |
| 79 | ... | Orange Grove Estate—Tacarigua | 3.47 | 1.70 | 7.64 | .17 | 9.52 | 17.95 | 11.88 | 10.18 | 9.67 | 8.77 | 14.17 | 10.67 | 105.79 |
| 80 | 8 e | Siparia—Rest House | 3.93 | 4.00 | 8.81 | 1.14 | 6.40 | 15.30 | 18.71 | 14.30 | 10.77 | 11.05 | 14.16 | 11.16 | 119.23 |
| 81 | 8 | St. John's—Cedros | 7.41 | ... | ... | ... | 1.63 | 8.20 | 11.24 | 4.95 | ... | ... | ... | ... | ... |
| 83 | 8 e | Carenage—Police Station | 3.14 | 1.51 | 5.86 | .53 | 7.98 | 13.08 | 15.70 | 6.74 | 9.70 | 9.03 | ... | ... | ... |
| 84 | 8 | Guspo—Adventure Estate | 4.04 | 4.09 | 4.16 | .28 | 4.41 | 7.79 | 14.82 | 15.21 | 8.37 | 5.33 | 6.60 | 6.36 | 81.46 |
| 85 | 8 | Fairfield Estate—Princes Town | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 86 | 8 | Lothians—Princes Town | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 24 | 8 e | Maraval Reservoir | 4.65 | 1.97 | 3.25 | .03 | 8.39 | 7.33 | 16.27 | 9.62 | 11.14 | 8.37 | 11.92 | 7.09 | 90.03 |
| 67 | 8 e | St. Ann's Reservoir | 2.37 | .97 | 4.83 | .37 | 5.95 | 10.28 | 11.48 | 7.79 | 11.13 | 7.57 | 10.65 | 5.58 | 78.96 |
| 37 | 5 e | Cronstadt—Bocas | 3.90 | 1.30 | 3.82 | .23 | 6.94 | 10.72 | 9.21 | 4.44 | 6.56 | 7.38 | ... | ... | ... |
| 88 | 8 | Cedros—Perseverance Estate | 7.45 | 2.15 | 4.50 | 1.92 | 1.70 | 8.02 | 11.23 | 4.85 | 4.06 | 2.31 | 6.53 | 8.99 | 63.71 |
| 89 | 8 e | Savonetta—Esperanza Estate | 2.11 | 1.73 | 3.20 | .10 | 4.12 | 7.54 | 9.95 | 13.08 | 7.34 | 5.81 | 6.53 | 6.09 | 67.60 |
| 90 | 8 e | La Gloria Estate—Gran Couva | 3.50 | 3.04 | 5.35 | .87 | 9.43 | 14.74 | 14.46 | 12.59 | 8.69 | 5.24 | ... | ... | ... |
| 91 | 8 e | Dabadie | 4.39 | 2.91 | 8.22 | .85 | 10.52 | 22.22 | 19.68 | 15.23 | 18.67 | 6.21 | 11.73 | 11.12 | 131.65 |
| 92 | ... | Unupia—Mon Plaisir Estate | 2.21 | 1.57 | 4.50 | ... | ... | 10.94 | 13.95 | 17.77 | ... | 5.10 | ... | ... | ... |
| 93 | ... | Arouca—Laurel Hill Estate | 2.92 | .37 | 5.21 | .34 | 7.52 | 12.51 | 9.15 | 11.71 | 9.84 | 6.01 | 9.53 | 5.12 | 79.63 |
| 94 | ... | Naparima—Philippine Estate | 1.86 | 1.94 | 4.31 | .59 | 4.40 | 10.21 | 10.34 | 13.59 | 4.47 | 5.97 | 7.89 | 6.95 | 72.82 |
| 95 | 5 e | Naparima—Corinth Estate | 1.75 | 1.78 | 4.13 | .20 | 5.35 | 9.81 | 8.45 | 11.30 | 5.92 | 5.55 | 6.15 | 5.10 | 65.49 |
| 96 | 8 | San Juan—Aranjuez Estate | 3.50 | 1.02 | 1.44 | .27 | 6.88 | 11.96 | 10.00 | 7.13 | 10.96 | 9.52 | 10.76 | 6.13 | 79.57 |
| 97 | 8 e | Woodbrook | 2.36 | 1.50 | 5.02 | no rain | 5.85 | 10.33 | 9.19 | 6.30 | 8.35 | 10.52 | 8.02 | 3.16 | 70.60 |
| 98 | 5 e | Fort George Signal Station | 3.11 | 1.87 | 5.50 | .40 | 5.91 | 9.06 | 15.37 | 6.86 | 8.50 | 7.09 | 8.96 | 4.72 | 77.25 |
| 99 | 5 e | North Post " | 5.55 | 1.80 | 2.06 | .23 | 7.05 | 11.12 | 10.78 | 14.20 | 10.64 | 8.76 | 7.15 | 6.89 | 86.23 |
| 100 | 8 e | Perseverance Estate—Couva | 2.20 | 1.95 | 1.91 | .04 | 5.87 | 5.52 | 10.88 | 12.17 | 5.44 | 5.29 | 4.96 | 5.35 | 61.58 |
| 101 | 8 e | Camden Estate—Couva | 1.41 | 1.08 | 2.22 | no rain | 4.98 | 5.51 | 11.66 | 10.43 | 3.38 | 4.59 | 4.49 | 4.65 | 54.40 |
| 102 | ... | La Juanita—Couva | 9.86 | 4.15 | 4.15 | .71 | 9.59 | 18.21 | 14.90 | 14.54 | ... | 11.20 | ... | ... | ... |
| 103 | 8 e | St. Augustine—Tunapuna | ... | ... | ... | ... | 7.73 | 13.24 | 6.22 | 7.95 | ... | 5.00 | ... | ... | ... |
| 104 | 8 e | Ben Lomond Estate—S. Naparima | 1.75 | .97 | 5.64 | ... | 3.91 | 11.67 | 9.34 | 14.08 | 4.13 | 4.57 | 6.11 | 7.15 | 63.32 |
| 105 | ... | Woodford Lodge Estate | ... | 1.72 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 106 | ... | Palmiste Usine | 1.99 | 1.72 | 5.08 | .36 | 6.58 | 10.22 | 11.04 | 12.85 | 6.06 | 4.35 | 6.70 | 5.62 | 72.57 |
| 107 | 5 e | Carroll's Island | 2.22 | 1.40 | 3.71 | .32 | 6.27 | 8.62 | 8.60 | 4.11 | 6.56 | 5.74 | 8.19 | 3.84 | 59.58 |
| 108 | ... | Bronze Estate—Naparima | 3.19 | 1.86 | 7.17 | .37 | 4.84 | 11.23 | 11.71 | 13.17 | 8.05 | 5.49 | 8.61 | 10.27 | 86.01 |
| 109 | ... | Arima | 6.21 | 2.08 | 6.22 | .91 | 13.41 | 10.33 | 15.76 | 12.68 | 18.86 | 8.87 | ... | ... | ... |
| | | Monthly Average, and Mean for year all Stations | 3.66 | 2.25 | 4.37 | .49 | 6.41 | 11.59 | 12.25 | 11.12 | 8.22 | 6.56 | 9.20 | 7.45 | 83.33 |

Mean Rainfall for year at 67 Stations ... 83.33 inches.