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ANNUAL REPORT

FOR THE YEAR 1896.

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1896

BY

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

SUPERINTENDENT.

TRINIDAD:
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ANNUAL REPORT

OF THE SUPERINTENDENT OF THE

ROYAL BOTANIC GARDENS FOR 1896.

ROYAL BOTANIC GARDENS, TRINIDAD,
2nd January, 1897.

SIR,

I have the honour to submit herewith the Annual Report on the working of the Botanical Department for the year ending December the 31st, 1896.

This report forms the tenth of the series which have been issued and submitted by me during my tenure of office (1887 to 1896) without intermission.

ESTABLISHMENT.

No changes have taken place in the *personnel* of the establishment. Mr. Massy, Clerk to the department, was on leave during the month of November.

METEOROLOGY.

The annual returns have been compiled as usual, and the tabulated return of Island Rainfall is also appended to this report.

The value of Meteorological returns was clearly proved during the past year, by their being used for the purpose of calculating the Rainfall on the areas drained by the Caroni River, and the amount of flood water which has to be discharged by it during heavy storms.

Further use has also been made of them by the Railway construction staff as a guide in making their estimates for culverts, bridges, &c., and for other purposes.

The monthly mean maximum temperature in the shade for the five months—June to October—was 88 Fah., with variations ranging from ·2° to ·9°. The hottest month of the year was May, with a temperature of 91·1 mean maximum and a mean of 81°·5 Fah.

January was the coolest month of the year, February the driest, May was the hottest, June the wettest, and August had the greatest humidity.

The Sunshine records have been regularly kept, and the daily statements are shown in the Appendix to this report.

HERBARIUM.

The work of this section has made steady progress, and the collection of specimens of the Island Flora is gradually being made more complete.

The whole of the indigenous plants have now been separated from those which are known to have been introduced from other countries.

A set of duplicates numbering 211 sheets have been forwarded to the Director of the Berlin Herbarium (Dr. I. Urban) in exchange. A similar set of 133 sheets were sent to Mr. W. E. Broadway, of the Botanic Gardens, Grenada. 853 sheets of the commoner Medicinal and Economic plants were sent to Dr. H. H. Rusby, of New York, in exchange for specimens of the Flora of the Delta of the Orinoco, collected by him when attached as Botanist to the expedition recently sent there by a large Company holding concessions from the Venezuelan Government. In addition to these, Dr. Rusby sends us a fine collection of Bolivian plants, which are a welcome and valuable addition to the Trinidad Herbarium. The Orinoco set numbers 96 sheets, many of them representing specimens of value for direct comparison with the Trinidad Flora. The Bolivian set numbers 471 sheets. From Mr. Broadway of Grenada 17 sheets were received.

The principal point of interest outside of the ordinary routine, was the re-discovery of *Sacoglottis amazonica* in the Irois district of Trinidad by Mr. W. Lunt, the Assistant Superintendent, who was sent on an expedition for that especial purpose. The results of this expedition were very satisfactory, but as the details have already been fully given in the departmental Bulletin for October, 1896, they need not be repeated in this report. It may be mentioned, however, that the re-discovery is considered a very interesting one, from the fact that the source of one of the "drift fruits" discussed in the reports of the Challenger expedition, as being found by various collectors in the Caribbean and other Seas, has now been definitely decided.

As showing the difficulties met with, and the time it takes to carry Botanical work to its completion, I may mention that for many years there has existed a wish among Botanists to have the tree known locally as the "Contrevent" correctly determined. Some nine years ago the department commenced this task, but from the distance to be travelled to the habitat of the trees, the short period of flowering, and the difficulty of getting down the specimens from immense forest trees, our efforts (though persistently carried on through successive years) have as yet only resulted in the collection of material sufficient to make a fairly good single sheet of Botanical specimens. This sheet has been sent on to the Director of the Royal Gardens, Kew, for critical examination and determination, and we have to hand information which shows that this old and locally well known tree proves to be an undescribed species of the order *Sapotaceæ*. It had previously been for many years referred to *Lucuma multiflora, A.D.C.*, but that plant has been recently described in full in Hooker's "Icones Plantarum" Pl. 2498. The local name of *Lucuma multiflora* is "Penny Piece" or "Pain d'epece." The fruit is eaten readily by children, but would be fairly described as a "not quite undesirable" table fruit.

The Rust disease of the sugar cane was observed on canes growing in the Garden, and specimens were determined at Kew as being identical with the *Leptosphæria sacchari* of Van Breda, specialist at the Dutch experimental station in Java.

A curious instance of the flowering of small seedlings of Mahogany (*Swietenia*) also came under notice. These produced flowers when not more than six inches high. Specimens were secured for our own and for the Kew Herbarium.

Polystictus sanguineus, L., a finely coloured fungus, was found destroying hardwood gate-posts in one of the pastures; posts that had only been in the ground a few months being entirely destroyed. From this and other observed instances it appears evident that the knowledge of the destructive nature both of Saprophytic as well as Parasitic fungi, has not as yet been put to such practical use as it might be. Perhaps the fact that people who have not had them under close observation and study can hardly realize that such apparently (to them) insignificant organisms should do so much harm. We constantly see builders, carpenters, &c., laboriously tarring or painting, and even charring the ends of posts, the sills of houses, and the flooring of bridges, &c., &c., when the work is often absolutely worse than useless; for the germs of decay in the form of the mycelium of a fungus have already permeated the woody tissue, so that all they do in many cases is to seal up in the interior of the wood, and in a suitable place for its growth, the vegetative and most destructive part of a Saprophytic fungus. The indications of the action of these minute vegetable organisms is much more pronounced in a tropical, than in a temperate climate; the destructive action is much quicker, there is far better opportunity for observation, and the damage is more quickly apparent. Modern Science shows, however, that the only means of properly treating or preserving timber is first to sterilize it by heat, to thoroughly dry it, and afterwards to use outside preservatives in the form of paint, tar, or charred surfaces, &c., &c.

Creosote is often used to preserve timber, but unless the operation is performed exceptionally well, "Creosoted" timber falls a prey to "dry rot," otherwise fungus, almost as readily as any other, especially in the Tropics.

Applications of preservatives should always be made under pressure, and with sufficient heat to destroy the growing parts of these destructive fungi.

CORRESPONDENCE, DISTRIBUTION OF INFORMATION, &c.

The total number of registered communications which left the office during the year was 3,491. This is a larger number than during any of the previous nine years. Besides the registered communications, there are issued large numbers of bills, receipts, and numerous memoranda.

This is a very large correspondence for a small department, but it is necessitated by the large number of enquiries which are annually addressed to it by local and foreign correspondents.

A pamphlet issued by the English Emigration department, and dealing with the West Indies, was referred to this office by His Excellency the Governor for revision with respect to that portion dealing with the Island of Trinidad; Mr. H. J. Clark revising the statistics. This pamphlet is widely distributed by the Enquiry Office in London, and it is therefore highly important that a correct and impartial account of the Island, and its suitability for the investment of capital should be obtainable by those who wish to devote themselves to agricultural pursuits in the Tropics. Considerable time was expended in the preparation by the Superintendent, and it is believed that the compilation, as now written, is likely to attract capital to the Colony.

The following is a register of the correspondence sent out during the past ten years :—

1887 (March to December)	774
1888 (January to December	1,150
1889	1,789
1890	1,664
1891	1,701
1892	1,506
1893	3,140
1894	3,048
1895	2,635*
1896	3,491
Total—Ten years	20,898

Taken on the average of the past ten years, the number of communications sent out is over 2,000 annually.

It has also to be remembered that with the small staff at command, and for other reasons, a large portion of the correspondence must of necessity be performed by the Head of the Department.

In December, 1896, the Government allowed the purchase of a type-writer for office use. This is a great acquisition, as it not only saves a large amount of time, but it facilitates in no small measure the preparation for the printer, of the Departmental Reports and Bulletins.

FLOWER GARDEN.

There is nothing of special interest to record under this section. It has been understood, I hope, from previous reports that unless extensive re-arrangements are in progress, there is little but the *daily routine* to be annually noticed. This has been fully carried out. Many of the beds in the front of Government House (especially the larger ones) are becoming much overgrown, and will have to be renewed shortly. The lawns suffered very severely in October and November from the ravages of the mole cricket *Scapteriscus didactylus*, and I am sorry to say, it has to be confessed, that we have as yet been unable to find a means to deal successfully with this pest, without the attack recurring periodically.

The large tank or pond, spoken of in last year's report, was completed in October and the water laid on ; and what was formerly for many years a rubbish corner, is now a clean and tidy portion of the Garden, and adds not a little to its interest. This tank was constructed chiefly for the purpose of growing the mammoth water-lily of the mainland known as the Victoria Regia.

Seeds of this have been kindly sent me by Mr. G. S. Jenman of the Botanic Gardens, British Guiana, and have now (December, 1896) just commenced to germinate ; so that it is hoped that during the coming year we shall have specimens of this fine water-plant to please the sight of visitors who have no opportunity to see the mainland. Several species of Nymphea, and other smaller water-plants are already flowering and doing well in it. The tank is circular in form and is over thirty feet in diameter ; its outlet or overflow is so arranged as to utilize the water in other portions of the establishment, instead of allowing it to run to waste.

The large Arbour which stood directly in front of Government House was removed in December, and it is intended to re-erect it in a position where it will be as useful for the growth of climbing plants as heretofore, and at the same time afford a shady retreat to visitors.

I mentioned in last year's report the introduction of twelve seeds of the double Coconut Palm from the Seychelles Islands, two of these have now developed a single leaf, and five others have commenced to show above ground their pointed and spear-shaped leaf sheath. I learn from Mr. Jenman of British Guiana, who has had them longer under cultivation, that their growth is extremely slow, and that it sometimes takes over two years before the leaves appear above the ground, so that we may be considered fairly successful to have as many as seven out of twelve to appear above ground in little over the year.

DECORATIVE WORK, &c.

The demands for decorative work, or plant furnishing has been as heavy as usual ; but we have been able to meet it with less labour than formerly, on account of the increased stock of large and small plants which is on hand, which, is probably larger and in better order than at any previous time. Although the number

* In last annual report the number was erroneously given 600 less than it should have been.

sent out to applicants is somewhat less, the plants being larger made up an equal number of loads as during the previous year. The number loaned to applicants during the year was 848. Under this head, it should be understood, Flower Garden work is not included, but merely the labour of maintaining and growing the plants for the decoration and furnishing of Ball rooms, places of public and private entertainment, and for use in the residence of Her Majesty's representative situated within the bounds of the Garden. A total of 3828 plants were in use during the year.

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

Among the improvements carried out under the above headings may be mentioned the paving of the nursery walks and the completion of the re-arrangement of the same.

A new iron gate with concrete pillars has been placed at the southern entrance to the gardens; this was fully completed during the early part of the year.

A temporary iron gate was at first placed at this spot, but this was removed in due course, and placed in the position for which it was intended, viz.: at the southern entrance to the nurseries.

Another iron gate has also been hung in the nursery fence, near to the Assistant Superintendent's quarters. The fencing in the nursery portion of the establishment is expected to be fully completed during the coming year.

The road near the Guard-house has been re-arranged and levelled up; a small culvert being built to divert surface waters from the main entrance, and the road itself has been newly gravelled for part of its length.

The paving of the main drainage ravine has been extended to a point below the western bridge. Several of the drains carrying surface water have been cleaned and relaid, and that on the main carriage road covered for some distance with new concrete slabs the material for which was supplied to us by the Public Works Department.

At the south-western corner of the Gardens, near ravine bridge, the boundary fence has been extended along the top of the bridge wall. Formerly this place was quite unsightly, and afforded easy means of ingress and egress for trespassers.

Now that the Savannah fence has been renewed, the fences on the Garden side look shabby in comparison, and to be in harmony therewith would have to be replaced with one of more modern character. I have long wished to see entrance gates erected on the main drive to Government House, but for many years the Botanic Gardens and necessarily Government House—the residence of Her Majesty's representative built inside the Gardens a few years ago—have been without an entrance gate, which is probably an unique fact in the history of Government Houses as well as of Botanic Gardens, but one nevertheless which speaks well for the supervision exercised over straying cattle, &c., on the public roads; for only on very rare occasions during the past ten years, has any damage been done by such intruders. This, of course, is partly due to the fact that a Guard-house—in which a regular guard is maintained, is situated near to the gateless entrance.

Although there is therefore little to complain of in this respect, it cannot be denied that a handsome entrance would greatly improve this approach to the Gardens. The absence of such a feature has been very often adversely commented on by visitors, and wonder is often expressed at the fact that in a Colony like Trinidad, no gates have yet been erected at the entrance to its Government House.

Near to the old gas-house on the southern boundary, a small piece of land has been added to the area of the Gardens. This has been effected by straightening the fence between the St. Ann's pasture and the Garden.

It effects a great improvement in the appearance of this part of the establishment, and makes a small piece of land available for cultivation but not as much as the necessities of the Garden require. Most of the land available for cultivation has been under tillage for many years, and those who have had experience of tropical agriculture know well what that means. Even the uneducated native peasant often teaches a lesson in this matter, by the methods he adopts to obtain good crops. This he generally succeeds in doing by giving frequent change of land, no doubt to the detriment of the forest, but certainly to his own benefit.

During several months of the year, an inflow of drainage from a neighbouring property on the North-eastern boundary took place, which caused considerable anxiety. This drainage found its way into the main ravine, and at one time threatened to become a nuisance of no small moment. I am happy to say, however, that a way was

found out of the difficulty, and a scheme decided upon by which all the drainage from this property will be disposed of by a new drain running southwards from the property in question through the pastures to the Dry River, the Government paying half the cost of the improvement, which was a very necessary one.

VISITORS.

The number of visitors who registered their names during the year under review was 362.

Among the names are to be noticed the following:—Colonel Green, F. W Fison, Esq., M.P.; the Misses Maguire, celebrated artists; Mr. and Mrs. A. J. Coe, the Revd. H. A. Berners, A. Chamberlain, Esq., and Miss Chamberlain, Mr. Pears and party, the Earl of Carlisle, Mr. and Mrs. Ponsonby, Mr. Lamont, Mr. Withes and party, Dr. H. H. Rusby, on his journey to and from the Orinoco; and Lady Hay from Barbados.

The number of visitors to the Gardens, especially those coming on tour is so numerous, that it has become a matter of impossibility that the Superintendent should receive all who call upon him; but at the same time it is the endeavour to secure to all who may require it a suitable guide to the points of greatest interest.

Our collection of living animals has received but few additions; but two or three specimens of mainland Tortoise were kindly presented by J. J. Quelch, Esq., of the British Guiana Museum.

NURSERIES, &c.

I am glad once again to be able to report a small improvement in this section In a Botanic Garden where regular routine work has to be carried out, the aim at improvement must necessarily be a constant one, or nothing would be accomplished; and it is satisfactory to find that by doing a little each year, in course of time really substantial progress is made. Ten years ago when I assumed charge, the nurseries were a heterogenous collection of plants without arrangement, or facilities for finding any required kind with despatch. There was no proper provision or convenience for the sowing of seeds, or the potting of plants, and the Garden was wanting the necessary shelters for the protection of tender plants and seedlings. Year by year, however, little improvements have been carried out, and there is now suitable conveniences for the potting and packing of plants, and for the storage of tools, soils, seeds, and packing materials, and there are extensive glass-houses and seed-sheds for the protection and primary culture of the more delicate plants. Residents in temperate climates who may read this report, may wonder at the statement that glass-houses are a necessity in a tropical climate; but after twenty-one years of tropical work, I think I may put on record my own estimate of their value without undue egotism, and I must say that I consider them to be *an absolute necessity,* if delicate operations are to be successfully carried out. A single instance will suffice to prove this. Sugar cane seed is very light and also very small, and it is absolutely impossible to raise seedlings out doors—except, perhaps, by accident— for a single shower will often be quite sufficient to completely destroy them, so that they must be raised under a shelter of some kind, and a glass-house is to be used in preference to any other kind of protection. Many plants also which will not stand heavy weather in their juvenile stages are regularly and successfully raised by aid of the glass-house, and when grown to a sufficient size, are placed in the open ground in permanent quarters. Our greatest addition to the nurseries during the year under report has been the erection of our largest glass-house. It is 38 feet in length, 13 in width, and is 11 feet in height. It is built of durable hardwood, and consists of a simple frame with rabbeted sash bars forming the roof placed one foot apart. The sash bars are filled up alternately with sheets of glass and sheets of zinc, as an experiment, to provide a partial shade, and so far it appears to answer admirably, as it gives quite sufficient shade without the use of blinds or shading of any other kind. Such houses are also very useful for gradually hardening* to the climate plants received from abroad, many of which would inevitably be lost, if at once planted out in the open on their arrival in this country. Glass-houses in the tropics may, perhaps, be looked upon by some, as mere heat traps, but in reality the very reverse is the case, for it has been proved by regular readings of the thermometer, that constructed on the lines we adopt, they are actually cooler than in the open air. The sides of our house are built quite open but covered with wire netting, while at the apex of the roof there is a lantern opening which stands some fifteen inches above the main roof, so as to give free egress to any air that may become heated. The lantern is covered with corrugated zinc, and the house being placed north and south, this gives abundant shade during the hotter parts of the day.

* *It is quite as necessary to harden to heat as to cold.*

An orchid shed has also been partly built. This is made by roofing in an open framework with split bamboo placed the hollow side upwards and about two inches apart. A roof of this kind collects about 60% of the rain that falls and sheds it away from the plants. It also affords good and sufficient shade for most orchids when in growth.

By being placed near to the water-tight glass roof, it will allow of changing the plants, so as to afford them the different positions they require during their resting season; for under glass we can, of course, withhold water at will from any plant that may require a resting period. The distribution of plants during the year has been up to the average, and our total receipts amounted to the sum of £320 6 2. Large numbers of plants have been this year distributed *gratis* to Railway Stations and to Churches, Schools and Public Institutions, &c., &c., included below :—

Table 1.—Distribution of Plants and Seeds in Exchange, 1896.

Where Distributed.	Plants.	Seeds.	
		Countable.	Packages.
To places abroad	1,595	5,737	239
To places inland	11,425	...	...
Totals	13,020	5,737	239

Table 2.—Plants and Seeds received in Exchange, 1896.

Whence Received.	Plants.	Packages of Seeds.
From places abroad	723	310
From places inland	...	16
Totals	723	326

Table 3.—Plants, Seeds and Flowers purchased and sold, 1896.

Purchased.				Sold.		
Plants.	Packages.	Seeds.	Countable Seeds.	Plants.	Bouquets, &c.	Countable Seeds.
2,287	23	...	500	22,518	28	15,339

Table 4.—Total number of Plants, Seeds and Flowers, distributed by Sale and Exchange, 1896.

Plants.	Seeds.		Bouquets, &c.
	Countable.	Packages.	
35,538	21,076	239	28

Among the list of plants received were four valuable cases of miscellaneous plants from the Royal Gardens, Kew, which arrived in excellent condition. Cases were also sent to Kew from our Gardens, which were reported as arriving in first-rate order. Before the institution of a special time of the year for sending plants home, the reports we received were not usually so favourable, but since the practice of sending only in July and August has been adopted, they have generally been found to arrive in excellent condition, and I make it a point to recommend this period of the year to any of our correspondents who may be desirous of sending plants to Europe.

We are indebted to the Curator of the Botanic Gardens, Grenada, for numerous additions to our stock of plants available for distribution, and we have conducted a mutual exchange with that establishment with pleasing results. Mr. Broadway having been in the Trinidad Gardens as Assistant Superintendent for several years, knows our *desiderata*, and is thus able to help to great advantage.

BULLETIN.

The issue of the Bulletin has been regularly maintained, and four quarterly parts were issued in January, April, July, and October.

The following is the list of articles treated upon :—

156.—Cricket Grounds and Tennis Lawns.
157.—Adrue or Ardrue.—*Cyperus articulatus.*
158.—Garden seats.
159.—A fodder grass.—*Pennisetum orientale.*
160.—"Tabasheer."
161.—Natural History Notes.
No. 23.—*Termes tenuis, Hagen.*
No. 24.—*Cutiterebra funebris, Austen.*
162.—Latania borbonica.—*Livistona chinensis.*
163.—Lignum vitæ.—*Guaiacum officinale, L.*
164.—Ginger.—*Zingiber officinale, L.*
165.—Fibre from Gru-Gru.—*Acrocomia sclerocarpa.*
166.—Circular Notes.
No. 26.—Grafting the Mango. Lecture on Coffee, &c.
No. 27.—Silica in Grasses.
No. 28.—Sugar Cane seedlings.
No. 29.— " "
167.—Analysis of Garden soil.
168.—Castor oil manufacture. (Extract.)
169.—Botanical Notes.
No. 1.—*Polypodium trinidadensis, Jen., n. sp.*
No. 2.—*Cynometra trinitensis, Oliver, n. sp.*
No. 3.—*Asplenium nidus, var. B. Mett.*
No. 4.—*Tricopilia hymenantha, Rchb. f.*
170.—The Loquat—*Eriobotrya japonica, Lindly.*
171.—Giant Cactus.—*Cereus peruvianus.*
172.—Shallots.—*Allium ascalonium, L.*
173.—The Ground Nut.—*Arachis hypogea.*
174.—Watercress.
175.—Artichokes.
176.—Roses. (Extract.)
177.—Sisal Hemp.
178.—Notes on manuring. (Extract.)
179.—Introduction of double Coconut.—*Lodoicea Sechellarum.*
180.—Robbery and Murder.
181.—Circular Notes.—No. 30—Sugar Cane Seeds.
182.—Water Measures and Rainfall. (Extract.)
183.—Jamaica Drift Fruit.
184.—Gordon's Coffee Machines.
185.—Chrysanthemums.
186.—Natural History Notes.
No. 25.—Corbeau in error.
No. 26.—New Coccids.
No. 27.—Snake Bites. (Extract.)
187.—"Tabasheer."
187A.—Rum aroma.
188.—Trinidad Orchids.
189.—Natural History Notes.
No. 28.—Night Noises, *Athene torquata, Daud.*
No. 29.—"Petite Chouette," *Athene phalænoides, Daud.*
No. 30.—A Bat's Dining Room.
No. 31.—Life History of the Parasol Ant, &c.
No. 32.—Origin of Sex.
190.—Onions in the West Indies.
191.—Cedar, *Cedrela odorata*, L.
192.—Mahogany, Swietenia Mahogany, L.
193.—Vanilla.
194.—Botanical Notes.
No. 5.—*Cynometra trinitensis, Oliver.*
No. 6.—*Schizea elegens, Sw.*
No. 7.—*Schizea pennula, Sw.*
No. 8.—*Fungus on Coccidæ.*
195.—Eucharis amazonica.
196.—"El Canto" Bark.
197.—Sugar Cane experiments and report of Seedlings Committee.
198.—Sweet Cassava.
199.—Loranthaceæ.
200.—The "Gru-Gru" Palm. (*Acrocomia.*)
201.—The "Timite" Palm. (*Manicaria.*)
202.—The "Date" Palm. (*Phœnix.*)
203.—The "Betel Nut" Palm. (*Areca.*)
204.—"Yams." (*Dioscorea.*)
205.—Report on Sacoglottis.
206.—Natural History Notes.
No. 33.—Wood destruction in Trinidad.
207.—The "Avocado" Pear. (*Persea.*)
208.—The "Fustic" Tree. (*Maclura.*)
209.—"Guinea Grass."
210.—Trinidad Orchids.

211.—Arrowing of the Sugar Cane. (Extract.)
212.—Botanical Notes.
No. 9.—Mechanical action and irritability in the flower of *Catasetum Tridentatum, Hook.*
213.—Circular Notes.
No. 30.—On Seedling Sugar Canes.
214.—The improvement of the Sugar Cane.

Attached to the Bulletin for 1896 is a very valuable Appendix by Professor T. D. A. Cockerell of Las Cruces, New Mexico, United States of America, containing a list of all the known Coccids or Scale Insects which live upon plants in Trinidad. The principal articles in the Bulletin as will be seen by the list, are varied in character, and for the most part original; only five extracts having been used during the year. Mr. Wm. Lunt, the Assistant Superintendent contributed two short articles, besides furnishing the report of his collecting trip in search of *Sacoglottis Amazonica.*

I am glad to be able to report that the Bulletin has received very high commendations from some of the best Botanical Authorities in England, but I am still more pleased to report that it is now being asked for by some of the local school masters. Its distribution abroad, brings to this office a very valuable set of exchanges from all parts of the world, from which it is my duty to gather all the information that can or may be at any time useful to residents in the Colony. Locally, the circulation of the Bulletin is on the increase. It is sent free of charge to any resident in the Colony who applies for it.

ECONOMIC SECTION.

SUGAR.—Last year's report under this sub-head recorded the passing of a resolution by the Agricultural Society that it was desirable to establish an experimental plot for the raising and testing of seedling canes at the Royal Botanic Gardens. This plot has been established, and the culture of numerous varieties has been commenced.

The number of varieties, was 41, and the number of examinations made amounted to 86. The examination made gives, 1st, the percentage of juice extracted; 2ndly, the specific gravity; 3rdly, the lbs. sucrose per gallon; 4th, the lbs. glucose per gallon; 5th, the quotient of purity; and 6th, the quotient of impurity; so that it is a fair test of the value of a cane at any particular season of the year.

The result of our examination was published in the proceedings of the Agricultural Society for April, 1896, and showed that the canes did not reach their maximum yield until nearly the end of the crop season. It is curious to note that in colonies situated so near together as British Guiana and Trinidad, that the season of harvest should differ by several months. The crop is generally over in the former colony by the end of December, while that of Trinidad is not finished until the month of May or later.

As to the value of the canes we have on trial, it is as yet too soon to speak. The greater part of our seedlings now on trial are canes raised in the British Guiana Gardens, a few received from Mr. Bovell of Barbados, and three of our own raising from Barbados seed received in 1889. Failing to raise anything but a single seedling during last season, and that from seed obtained from *Forres Park*, I obtained a few from J. R. Bovell, Esq., of the Botanical Station, Barbados. These have done extremely well, and show the varying character of canes raised from seed in an admirable manner for, in colour, in size, or in form, no two are alike, and no two have the same habit of growth. This tendency to variation I regard as one of the greatest features in favour of the theory that better canes than any yet grown may possibly be raised by a continuous course of selection from seedling plants.

It is very evident retrogression can as easily be made—perhaps more easily—than progression; as the useless kinds which come from seed are seen to be much more numerous than those which are found to be suitable for cultivation.

In my article published in the* "Sugar Cane" I have endeavoured to show the objects and aims which must be kept in view by the growers of seedling canes, if progress is to be made, and these views are known to be upheld by planters of large and varied experience.

The growth of the seedling canes under cultivation has been all that could be desired, but as the canes are not yet ripe, I cannot include the results of the season's growth in this report. I may say, however, that the propagation of No. 95, one of the best of the British Guiana lot, and of which we had but a single stool in November, 1894, has been so successful that I have been able to distribute in all over 5,125 cuttings during the month of December, while still leaving stools in the ground, and a sufficiency for further propagation. The following is a list of the total number of the new canes which were distributed during the year 1896.

* January, 1897.

A very large number of the canes were distributed during the year, and planters have shown great anxiety to obtain the new kinds. One of these gentlemen who has been carefully propagating No. 95, recently told me that he expected to have a field of some 50 or 60 acres for the crop 1898–9, which is a rate of progress leaving nothing to be desired when it is remembered that we had only a single stool of this kind late in the year 1894.

In our last Annual Report it was recorded that 5,305 cuttings of No. 95 had been sent out, and since then 3,200 more have been distributed, which, taken together with plants sent out as stools, makes a total of 8,505 plants. This work has been done while maintaining many other varieties at the same time, on little more than a third of an acre of ground.

The canes planted at *Aranguez* estate in October and November of 1896, will be ready for reaping in March next. Many of the canes have done exceedingly well, but as they will not be examined for some time, the report on them will come into the Annual Report for 1898.

CACAO.—The price of cacao, which was very low at the time my last Annual Report was written, improved very considerably during the early months of the year 1897, and after another somewhat low period, it again rose steadily at the close of the year.

It does not appear that the fall in prices has affected the rate of planting new land in any serious degree, and the output from Trinidad will probably increase year by year, for some time to come.

While in England on leave, I visited two of the largest firms of Cacao and Chocolate manufacturers, namely, Messrs. Rowntree of York, and Messrs. Cadbury of Birmingham. These establishments, I was informed, were not open to visitors as a rule, but I was permitted to see many of the different sections, such as roasting, grinding, and the manufactory of confectionery, etc., etc.

One can scarcely conceive the size of one of these establishments, until the close of the day, when the employees issue from the works some thousands in number. Each division of the factory is complete in itself, and has its own staff, and very convenient provisions are made for the comfort of the work people, at no little cost to the employer.

I was told by the member of the firm who personally conducted me over the Bourneville works, that there were sections of the manufacture which are not shewn, but I saw sufficient to enable me to realize the enormous trade which is carried on in a single establishment, and the influence even one such firm has over the price of the raw material they handle.

One of the greatest aids to success I observed, is for the manufacturer to maintain a uniform quality of the article he produces ; and this can only be done by a thorough knowledge of the character of the interior of the cacao bean.

The several grades made, require different blends of cacao, that from one country being mixed with that of another, in certain proportions, *only to be properly assessed by those who have had a lengthy practical training.* Sometimes the character of cacao is so varied in itself, even from one country, that blends have to be made of the produce of a single country to make a uniform sample. Again, different qualities of cacao are required for different purposes. For some classes of confectionery, a high-class cacao will be in demand ; while for other classes, the common kinds will be principally used.

I believe it to be a mistake to suppose that Trinidad, or indeed any special class of cacao, even from noted estates, is essential to the manufacturer. Makers no doubt like to get marks of known and standard repute, to save themselves and their employees the trouble of special examination each time a purchase is made ; and therefore uniform quality is paid for by the manufacturer as well as superlative quality, as it saves trouble in blending. This is how some estates have obtained a special mark, and it shows the value of that mark to be of the nature of *ascertained reliability.* If, however, it is found by the manufacturer that any mark is becoming less reliable, that mark will most assuredly decline in favour, and the produce it covers will realize much lower prices.

There have been cases reported where inferior cacao has been sold under a standard mark, and the result has been pointed to as "*the mark that did it.*" So no doubt it was ; but at the same time the originator of such a policy was playing a very dangerous trick, for it is certain that the buyers know good material when they examine it, and that such a trick would, when discovered, result in serious loss to the owner of the "mark."

Manufacturers when examining cacao closely, do not trust to the appearance of the outside of the bean, but cut sections of and roast a fair sample and judge from the interior colour, break and aroma, and not from the outside polish.

Theobroma bicolor., H.B.K., which I brought from Nicaragua in 1893, fruited for the first time in these Gardens, and I believe for the first time in the West Indies, in 1897.

A good many plants have been raised from the seeds produced, which are growing freely, so that the introduction may now be considered fairly secure. The fruits of this species—unlike those produced by *Theobroma cacao*—fall to the ground when fully ripe. Whether it will be of economic value sufficient to place it as a commercial plant, is a question for the future; but from a Botanical point of view, the successful introduction of a new species is a fact worthy of record.

The cacao trees introduced from Ceylon some three years ago produced ripe pods in 1897, and plants have been raised for distribution. Like our own cacao, however, it appears to have some of the Forastero blood in it, judging from the appearance of the pods, but the interior shows the superior influence of the "old red Dutch," as the beans are uniformly of a quality which will produce cacao of the highest class.

A paper on the commercial varieties of cacao was read by the Superintendent before the Agricultural Society in April, but the discussion of it did not take place for various reasons until the 9th of November. The paper called attention to the question of deterioration of the quality of Trinidad cacao, and the need for measures of improvement. This paper is printed in the proceedings of the Agricultural Society, and the report of the discussion at page 300. The question of the maintenance of established quality is a very important one, and it is highly desirable that a regular system of improvement of produce should be maintained. A system of this kind is a very difficult one to carry out on a private estate, and therefore certain provisions are now being made by the Botanical Department for carrying on experiments in this direction, as will be seen in a later section of this Report.

Attention to the question of the extraction of what is called "the indigestible fat" from the cacao bean, has been much discussed during the year 1897. It has been shown that a very large percentage of fat can be extracted from cacao after roasting and grinding, and that the residue forms a cacao powder of superior excellence which can be used at once for the breakfast table without further preparation. It cannot be denied that an inmense amount of adulteration occurs in cacao preparations, and although it may be freely conceded that there are numbers of good preparations on the market, yet it is equally clear that the adulterated article is now assuming a prominence which lessens sales, and reduces the price of the growers, from the fact that the most inferior and stronger flavoured kinds admit of more adulteration than the higher qualities, and therefore the latter are less in demand than formerly, and the public suffers by being compelled to consume mixtures consisting of sometimes more than 50 per cent. of sugar and starch, instead of having a pure cacao. If a pure cacao is sold, the buyer not only gets a pure article, but he also gets the highest flavour, for common cacao is much too bitter and disagreable, to be used without the admixture of other ingredients. It is clearly to the interest of the grower, therefore, to send as much of the higher qualities as possible to the market, as it admits of less adulteration, and it is also his interest to prevent adulteration as much as possible, so as to increase the consumption of the pure article.

The removal of the fat is purely a matter of taste, for while it is considered unwholesome in a cup of chocolate or cacao, it is not considered indigestible or objectionable when used to twenty times the same extent in chocolate creams or other confectionery. It is said that some manufacturers go so far as to add alkalies to cacao powder to saponify the excess of fat, and that the admired ring of white froth which appears on the breakfast cup, is nothing more than *sweetened soapsuds*. If this is so, it is surely better for the consumer that a small portion of fat should be present, than to drink a preparation containing similar constituents to the wash tub of a laundry. The extraction of fat from the cacao bean has been carried out at the gardens, and it has been found that the powder resulting is of the finest quality, and requires no admixture of starch to make it palatable, and although ground by hand in the crudest way, it compares favourably with the preparations of the best manufacturers. Pure cacao cannot be sold at the same low price as starch and sugar, but it would certainly be better for consumers to have a pure article, and add what they require of the lower priced ingredients themselves.

PINE APPLES.—When I arrived here in 1887, I found but few pine apples in the garden, and those few I found under shade. Mr. Prestoe, my predecessor, has noted in some of his Reports that the pine apple, in Trinidad, requires shade, but coming as I did from Jamaica where they are commonly grown in the open, I could not understand this, and planted in the open, as is the practice in the neighbouring Colony. Our success for several years has not been anything like what obtains in Jamaica, and therefore in future

it has been determined to try what virtue there is in shade for the pine apple. I am fully convinced, however, that many plants which require no shade when grown in some climates, may still require to be shaded to be successfully grown in Trinidad, owing to the humidity of the climate at some periods of the day, and the power of the sun at others. In the Departmental Bulletin for July, 1897, Article 250, the matter is more fully discussed. The pine apple seedlings mentioned in last year's Report had a bad time of it in 1897, as they were planted out in the open, and met with very severe weather, and were only rescued by being taken up, re-potted, and placed under shade, where they are now doing well again, although somewhat checked in growth.

COFFEE.—Plants of *Coffea arabica* have been in demand, but there is little disposition at present among the planters to regard them as valuable. Charges at the rate of one half-penny per plant are considered too high, and many use plants dug up from under growing trees (rat-planted coffee) in preference to our nursery plants, simply because they can be obtained at a cheaper rate. In countries where coffee is scientifically grown, such procedure is strongly condemned, and very rightly so. I know estates in Central America where all the plants are not only raised in the nurseries, but they are trained there for two or three years, until considered to possess sufficient vigour to stand the hardships of the field, and all weakly and inferior plants are rejected. The value of this practice is seen, when the observer notices what a high place is accorded on the markets to Costa Rican and Nicaraguan coffee.

Liberian coffee has been in more demand for the neighbouring island of Grenada, than for Trinidad, although it grows here rapidly into small trees and fruits abundantly, an illustration of the fact, that it is not as yet considered a good enough "minor product" by the Trinidad planting community. In the Dutch Colony of Surinam, however, Liberian coffee is being largely planted, some estates having as much as 250 acres in a bearing condition. Trinidad might very well grow Liberian coffee to the value of many thousand pounds per annum, as there are thousands of acres of land available, and admirably suited for this crop. There are minor difficulties in the way, no doubt, such as the general want of knowledge among the labouring class of the methods of harvesting and preparing for market; but these would, I believe, entirely disappear, if the culture was generally and earnestly taken up. Large quantities of Liberian coffee plants were sold in my predecessors' time to private buyers in Jamaica, and to many in the other islands, soon after its introduction in 1875; so that it cannot be said that plants have not been available, and yet in Trinidad few trees have been planted except in a desultory and careless manner by the side of, or under other crops; or in out-of-the-way corners where nothing else could be got to grow.

Another competitor for public favour has proved itself this year under the name of *Coffea stenophylla*, Don.—or hard-leaved coffee. This coffee grows freely, but is not in any way so robust as Liberian, but has more of the character of growth of the Arabian, although it is decidedly distinct from the latter. Our trees four years old are some eight feet in height, and beautifully furnished with branches from the ground upwards. Though fruiting this year for the first time, it gives promise of becoming an abundant bearer, and its produce is of a quality to take its place at once upon the markets as a first-class coffee of the Mocha type of bean. The "cherry" is small and of a deep purple colour when ripe, not red like the Arabian. The beans are small and roundish, less in size than the Arabian, but when in the parchment, are clean and smooth like the seeds of that species, and the parchment is readily removed. The flavour of the coffee when roasted and ground is of a very high order.

A fair crop of seed produced during 1897, has enabled the foregoing observations to be made, but a further series will of course be necessary before the question can be decided whether *Coffea stenophylla* will be a profitable crop to grow or not. All that can be said at present is, that in growth, in crop, in quality, and in facility for preparation, it promises to prove a plant of the best class for cultivation in the West Indies.

There is in the gardens also a variety of the Arabian known hitherto as "Narrow-leaf coffee." This coffee has been on trial for some years, but until lately it was not possible to carry out suitable observations. It can now be recorded after observations made during the past three seasons, on young plants specially grown for the purpose, that it is an abundant bearer, producing beans of fine size, and of the highest class.

A variety called "Hybrid Mocha" by Mr. Prestoe, does not appear to be anything more than a prolific variety of the ordinary Arabian. Under no circumstances could it be a hybrid, as the mocha itself is nothing more than a variety of the well known Arabian. Whatever its origin may have been—and it appears to be involved in no little amount of uncertainty—it is still, however, a variety of coffee of the best quality and deserving of a place on every estate.

Our little experiment ground for Arabian coffee is covered with about 50 trees which have been, like Cook's tours, "personally conducted." The result has been to show that coffee when properly treated, grows and fruits well, and can be profitably grown at an elevation little above sea level in Trinidad. It should, however, be pointed out that our soil is a dry one, and our position is some 130 to 150 feet above sea.

ABBEOKUTA COFFEE.—This is a coffee that has been sent to us from the Royal Gardens, Kew. It is an African coffee, and has much the appearance of the Liberian, but it is too early to say or to estimate what it will turn out to be like.

MARAGOGIPE COFFEE.—This variety of coffee grows well in the gardens, and yields fairly well, but so far it does not compare with the ordinary varieties for productiveness. It is a Brazilian variety of *Coffea arabica*.

MEXICAN COFFEE.—*Coffea arabica var. Mexicana*, is a coffee which promises to be a very prolific variety.

I am glad to be able to report that so far, the coffee disease of Ceylon has not made its appearance in Trinidad, and we suffer from little else than the common *Cercospora coffeicola*, which does but little harm, except to young plants.

RUBBER.—Plants producing rubber or caoutchouc, have been in cultivation in Trinidad for many years. *Ficus elastica*, or East Indian rubber, grows freely, and soon extends over a large area of ground, especially if helped by protecting its aerial roots, enabling them to reach the ground. Our method of protection is to procure large bamboo stems, and after driving a hole through the joints with an iron rod, to place them beneath where the aerial roots have made their appearance, planting them firmly in the ground. After having inserted the root, the top part is loosely closed with a little moss or fibre. Treated in this way, roots reach the ground in the space of a few months, and grow so rapidly that the protective bamboo is burst away, and the root remains large enough and strong enough to afford support to the branch from which it sprung. This practice has been found very useful where support is desired for overhanging branches, in several other species of *Ficus*, notably *Ficus Benjaminia*, which is now showing as quite a "Banyan" by these means. I may mention, however, that the word "Banyan" is usually allotted to trees of *Ficus Indica*. *Ficus elastica* is a good rubber-producer, although it does not yield well until of large size.

Several other kinds of rubber are grown, the following being a list of the species cultivated :—

1.—India Rubber.—*Ficus elastica.*
2.—Para or Brazilian Rubber.—*Hevea brasiliensis.*
3.—Ceara or Brazilian Rubber.—*Manihot Glaziovii.*
4.—Demerara Rubber.—*Hevea Spruceii* and *H. pauciflora.*
5.—African Rubber.—*Kickxia africana.*
6.— ,, ,, —*Tabornamontana crassa.*
7.—West African Rubber.—*Landolphia species.*
8.—Central American Rubber.—*Castilloa elastica.*

Of these, according to our experience, the most suitable for growth in Trinidad is CASTILLOA ELASTICA. Trees in the Gardens are over 60 feet in height, and from these we have now annual supplies of well ripened seed. Both in 1896 and 1897, the demand for young plants has exceeded our means of supply, but as the trees increase in size, larger supplies of seed will of course come to hand, and we shall be better able to meet demands.

I hear from several cultivators that trees purchased at the Gardens, are growing rapidly and well, which fact is encouraging to those about to commence cultivation.

Castilloa is a tree that—in Trinidad—grows quickly, and, if in good land, may be expected to be large enough for bleeding in seven or eight years. The grower, however, must take great care in early bleeding not to exhaust his trees. At the Royal Botanic Gardens trees 8 years of age yield a large quantity of *latex* or milk, and experiments are now being carried on to enable us to say with accuracy what trees of a given age should produce. It has recently been ascertained that the rubber of *Castilloa* can be readily separated from the *latex*, by a mechanical process, very cheaply, and producing rubber of the best quality.

By this process the rubber is separated from the water, albumenoids, proteids, etc., very quickly, and never becomes foul as is the case with rubbers produced by coagulation, and therefore, may always be expected to make the best price in the market.

I am informed by an expert who had recently been in the Ceara rubber district of Brazil, that *Hevea* and *Ceara latex* will not yield up its rubber by the mechanical process. I have mentioned, which is a fact worthy of note in favour of planting

COFFEA STENOPHYLLA, G. DON.

A NEW AFRICAN COFFEE (6 feet).

Castilloa, especially as the difference in price between the best qualities of Para and Central American Rubber is merely nominal. Some of the advantages of planting *Castilloa* may be here enumerated :—

1st.—It takes but few years before obtaining returns.

2nd.—It is easily tapped, and the *latex* is given off in good quantity.

3rd.—The rubber can be obtained by mechanical means.

4th.—The rubber is of the finest quality.

It is further estimated that trees will yield, according to size and age, from two to six or eight pounds of rubber per annum, and when this is valued, as it now is, at rates over three shillings per pound, it is not hard to see that a paying industry will result.

Of *Kicksia africana* it is as yet too soon to speak definitely, as we have only seedlings a little more than a year old. These, however, give promise of a rapid growth, more rapid indeed than that of many other rubber-producing trees.

Ceara rubber, the produce of *Manihot Glaziovii*, does not do well in Trinidad so far as I have seen, and previous experience of it in Jamaica strengthens our belief that it is not to be compared to *Castilloa* for cultivation in our climate.

Tabornamontana crassa grows freely, and keeps in excellent health, and we are shortly to try what class of rubber it will yield as grown here.

Landolphia species is growing in the Garden, but it takes many years to attain a size to be worth while tapping for rubber. Our vine of it is to be seen climbing a tree in the grounds to the height of some thirty feet, and yet the thickness of the stem is only a little more than an inch in diameter. Rubber of excellent quality can however be made direct from the stems without any further preparation than rolling the first portion of the quickly coagulating juice in the wounds from which it is taken, thus forming it quickly into balls of rubber. This rubber has been reported on as of fine quality.

The *Heveas*, or the Brazilian and Demerara rubbers, are trees of large size, and do not bleed so freely as *Castilloa*, neither do they grow so quickly, but they have the advantage of being able to grow in places where *Castilloa* could not thrive. Trees of large size are present in the Garden, and annually give us seed in limited quantities.

The list of rubbers would not be complete if we did not mention the indigenous *Mimusops globosa*, the "Balata;" from which the very hard rubber or balata gum is extracted. These trees are quite common in our forest lands, and from these and from private lands, a large quantity is annually exported. Large quantities of balata also pass Trinidad in transit from mainland ports. The tree itself is a very valuable hard wood, and is invaluable for railway sleepers, and also for any position where a moisture-resisting wood is required.

Latest advices from Europe show that there is a prospect of being able to obtain annual crops of *Castilloa*. It has been found from experiment that small stems of one year's growth contain as much as seven or eight per cent. of their dry weight of good rubber; that amount having been extracted from material grown in Trinidad. If this experiment can be worked out on a large scale, it is not hard to imagine fields of *Castilloa* reaped annually, and large factories for manufacture of the crop. The *latex* of our rubber trees (*Castilloa*), has been proved by careful experiment to give twenty-five per cent. of its weight, in pure and clear rubber.

Near the close of the year, His Excellency the Governor informed the Legislative Council, that he wished to initiate the growing of rubber on Crown lands, and I received instructions to [illegible]st the district and lands where operations of this character could be successfully carried out. My recommendations have been sent in, locating an area of some 300 acres for the purpose, and I expect to receive final instructions in due course. It has been abundantly proved that *Castilloa* rubber can be most successfully grown here, but an initiative is sadly wanted to turn the matter into a commercial success. The planting of a large area like this, by the Government, is not in any way a new departure, for the same thing has been done in India and many of the Colonies, with Cinchona and other things, and Government plantations of rubber are at the present moment being well maintained in Ceylon, with a strong probability of their being still further extended.

"TANNIAS."— *Colocasia esculenta*.—Some two years ago I obtained from Jamaica, plants of what is there known as the "Commander Coco." Our local name of "*Tannia*" is a word unknown to the Jamaica cultivator. Local names aside, this plant has long been known as producing a "*Tannia*" of superior excellence, and I was anxious to introduce it, to prove whether its excellence would be maintained under cultivation in Trinidad. I am very glad to be able to report that the

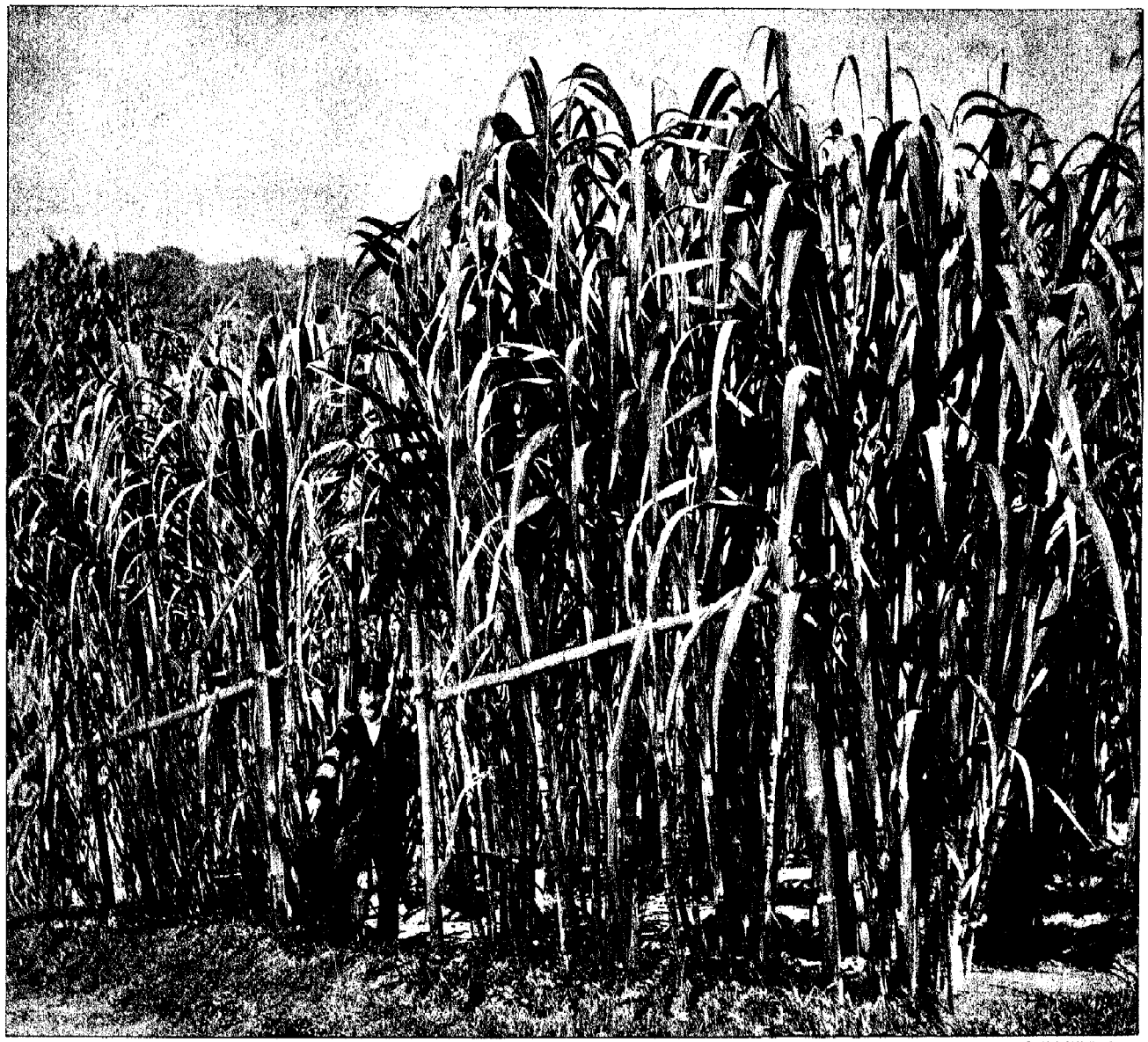
trial has proved highly successful, and that an esculent has been grown of the highest value for the table. The "Commander Coco" is the highest of its class and certainly takes precedence of any of the tannias of Trinidad. This experiment again shows what might be done in the improvement of our food crops and ground provisions, if more trouble were taken to hunt up the very best varieties which are grown in the neighbouring islands.

BAMBOO.—Staves made of bamboo stems are used by the Ordnance Department of Her Majesty's Army in the manufacture of lances for certain regiments. From time to time West Indian Gardens receive inquiries for this class of goods, and one of these inquiries came to hand during the past year. The material required for the purpose is known in India as the "male bamboo," a bamboo having usually, but not always, a solid stem. Plants of this species of bamboo were introduced to the Gardens many years ago, and some during the past decade, which have grown well, and produced stems of a similar size to those required. Samples of these sent to England for examination, were declared unfit for use, owing to the fact of their being sent in an unstraightened condition. It appears that the bamboo, to pass the army test, must be quite straight; and that the work of straightening has to be performed by persons who are experts in the work shortly after the material is cut. The species of bamboo is known as *Dendrocalamus strictus*, and could be grown to any extent in this colony. Staves nine feet in length are worth, after passing the standard tests, about 3/3 each; and as they weigh only three pounds each, this is at the rate of over a shilling a pound for bamboo wood. All that appears to be wanted is skilled labour for the preparation of the stems before sending them to England, and there is certainly good inducement for trials to be made. We can affirm that the right plants are growing here, producing stems as solid and as good as the specimens forwarded to us by the Ordnance Department as specimens. These latter can be seen by any one interested in the culture, at the Garden's office, at any time.

ORANGES.—An orange grove planted some years ago by Mr. Prestoe has lately been put into better order. The trees are beginning to come into bearing, and will, it is hoped, give annual crops in future. So far as I am able to judge from the appearance of the trees, and the character of the few fruit they have borne, I believe them to be all seedlings. This fact, of course, lessens their value, as the class of fruit they will produce cannot be depended upon. Trinidad oranges, as yet, do not show the harsher qualities of some of the seedlings from other islands, as they are generally of the Azores and Madeira strains; but if the policy of growing from seed, indiscriminately collected, is not discouraged, it will be impossible to secure the production of fruit of even quality. There are fine oranges in almost every West Indian island, but there are also oranges of the sourest description, only fit for the manufacture of citric acid. Specimens of the latter kind were observed and tasted on the tables of a Mail Steamer in May last, on my voyage to England. These, although fine and nice to look at, were certainly of the most acid description I have ever tasted, and the steward who bought them was probably deceived by their appearance as much as I was. The appearance of fruit of this class on board an ocean steamer, does a great deal of harm to the fruit trade generally, for any person remembering their experience and not knowing that better fruit is procurable, would certainly conclude that the class of orange growing in the West Indies was a very poor one indeed. The West Indies can produce excellent oranges, and it is a great pity that the credit of the West Indies generally, should be spoiled, by placing on the tables of an ocean steamer, oranges that no one could eat.

A proof of variation from seed was placed on record at the Royal Botanic Gardens in November, 1897. It will be remembered that some few years ago I noted and introduced to this Colony, an orange called the Grenadine (*see Bulletin, Article 267*). Seed was procured and plants grown, and two of the largest of the trees fruited in November last. The fruit of these two trees differ in many respects from the parent, and from each other. One of the trees produces a very large fruit with a thick skin, while the other produces a medium sized fruit with a fairly thin skin, and much more acid in flavour. The character of the two oranges, however, shows clearly that they belong to, and are varieties of, *Citrus nobilis*. This record, therefore, so far, proves nothing directly as to whether variation takes place with seedlings of *Citrus aurantium* or not, but the inference is strongly in favour of the view, that the quality of oranges raised from seed, is as variable as that of apples raised in a similar manner.

YAMS.—Our yield of yams during the past year was fairly up to the average of preceding years. The yellow yam (*Dioscorea cayenensis*, Lam.), has again proved the best for kitchen use, while the white yam (*Dioscorea alata*, L.), has proved to be the largest cropper. The best among the white yams was a kind imported from Jamaica, known there as "Negro Yam." This kind is far and away above the varieties sold in



NEW SEEDLINGS CANES.

Nos. 115 and 116.

our local markets as "white" or "water" yam. The latter are generally, as indeed their name indicates, very watery when cooked; while the "Negro yam" produces tubers which, when properly cooked, are quite dry and mealy. Among the yams I have obtained from various places, is a variety of (*Dioscorea alata*, L.), which has tubers of purple colour. If in this instance we followed local nomenclature consistently, we should have to call this variety *purple white yam*. Purple tubers are of course quite common with (*Dioscorea triphylla*, L.), or "cush-cush," the "Indian yam" of Jamaica, but I had not before seen a coloured variety of (*Dioscorea alata*, L.), until this kind was received from St. Lucia. I have since learned that it is commonly cultivated in Barbados and other islands.

I should be glad if correspondents will kindly send us tubers of any marked variety, so as to be able to continue our experiments on this valuable class of native food products.

Only one plant of the large number under cultivation produced flowers in 1897; so that one cannot wonder that material of the genus *Dioscorea* should be so scarce in different *herbaria* when it is known that certain kinds may be grown for years without a single flower being produced.

STYRAX.—*Styrax benzoin* which is said to yield the gum benzoin of commerce, is growing very successfully, and promises in a short time to become well established.

CANELLA.—*Cinnamodendron corticosum* has been planted out, and is doing well. This bark, it has been found, plays no unimportant part in the flavouring of some of the Bitters in so common use in America and the West Indies for making the compound drinks known as "Cocktails."

EXPERIMENT STATION.

I have deferred mention of a most important change in the arrangements for work of the Botanical Department until near the end of this Report; first, because the arrangements were only completed late in the month of December; and secondly, because it is better that the record of the work of the year 1897 should stand alone without reference to the work of 1898. It will be convenient to give a brief sketch of the conditions which have led the Government to sanction this most important extension of the operations of the Botanical Department. The Royal Commission sent out by Her Majesty's Government to examine into the state of the several West Indian Colonies, reported in favour of separating the ornamental section from the purely Economic, Botanical, and Scientific; and I was called upon for a Report on the subject by His Excellency the Governor. The Report sent in contained suggestions which occurred to me, for facilitating the work of the Department, and after consideration by the Executive, a portion of the lands of the St. Clair Dairy Farm, to the extent of nearly 33 acres, has been reserved for the initiation of an experiment station, for nurseries for economic plants, and with a view of its becoming a centre for the diffusion of information on agricultural matters generally.

The grounds around Government House, where the work has been carried on for so many years, are intended to be retained under control of the Department, and will be devoted to ornamental purposes, due care being had for the preservation of the many unique specimens they contain.

The proposed work of transferring the Nurseries, &c., to the St. Clair lands, can only be done in a gradual manner, and the first year's work will be for the most part employed in fencing, draining, &c., and in forming the experimental plots for plants waiting in the old Nurseries. In due course, it is intended to transfer the Nursery stock, Botanical specimens, Herbarium material, and the offices of the Department entirely to the St. Clair grounds. The necessary propagating houses, potting sheds and shelters, will have also to be erected, but many of these can well be spared from the old site. All the buildings are intended to be of a plain and useful character. The piece of ground first taken up will be that adjoining the estate of J. Rapsey, Esq., other portions being brought under cultivation as required. The first blocks of land put into cultivation will be devoted to the Seedling Sugar Canes, which I hope to have in position before the end of March. Others will be devoted to Rubber plants, new Coffee, and Food products, while others again will be planted with some of our most useful indigenous timber trees, so as to enable us to illustrate, in a convenient spot, what is most desirable to cultivate, or conserve, in another; and to furnish supplies of seed for *reboisement* purposes. When the necessary buildings have been erected, it will be possible to institute Agricultural classes, but until such provision is made, no classes can be undertaken.

The land selected is within a short distance of the present establishment, and is convenient in many respects for the purposes for which it is to be devoted. Not the least of these conveniences, is the supply of water, a twelve-inch main running through

the grounds, almost in the centre of the field. The land to be taken up this year will be some ten to fourteen acres. The land selected was formerly cultivated as a sugar estate, and has on it many traces of estate roads, which are in fairly good order, although the land has been for some years devoted to grazing purposes. The drains, however, will need considerable attention, and many new ones will have to be cut to ensure a proper condition of the soil for the various cultures to which it will be devoted. The largest road runs in a direct line, straight from the Maraval corner through the centre of the ground, giving very convenient access to all parts of the field, and will greatly lessen the amount of work required to bring the place into working order.

NATURAL HISTORY.

The land and fresh-water Mollusca of Trinidad are many of them vegetable feeders. Some of them do no little injury to plants, and, therefore, a list of them may be useful or interesting to readers of the Annual Report. The list has been prepared by Mr. Lunt, Assistant Superintendent, who has devoted much of his leisure to the study of this section of Natural History, and has been successful in discovering several species, and one new genus, named in his honour by Mr. A. E. Smith of the British Museum, who has fully examined the set. Those species marked with an asterisk, have all been collected in the grounds of the Royal Botanic Gardens by Mr. Lunt, 38 species and varieties in all, and may be considered as the Mollusca of the Gardens. The commonest form is probably *Subulina octona*, followed by *Plecochilus glaber*, *Bulimulus vincentinus, var. stramineus*, and *Strophochilus oblongus*. The latter produces eggs of large size, which are commonly found when digging ground, and may readily be mistaken for the eggs of a bird, by those unacquainted with their true character.

CONCLUSION.

I would conclude this Report with hope that the scientific and economic work of the Department, which has so long and steadily been carried on at the St. Anne's site, may not only lose none of its usefulness by its transfer to St. Clair, but that the facilities the new site affords, will enable the Botanical Department to enter upon an extended sphere of usefulness to the Agricultural community.

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

The Honourable
COLONIAL SECRETARY,
Trinidad, W. I.

APPENDIX II.—*Continued.*

NAMES.	NAMES.
From Botanic Gardens, Saharunpur.	**From Botanic Gardens, Nagpur.**
Phœnix rupicola	Mimusops Kaukii
Dobinea vulgaris	Soymida febrifuga
Prunus Puddianus	Hardwickia binata
Ficus foveolata	
Elsholtzia blanda	**From Botanic Gardens, Brisbane.**
Tephrosia candida	
Grewia lævigata	Acacia pendula
Ophiopogon sp.	,, decora
Daphne papyracea	Cedrela Toona
Cassia sp.	
Astilbe rivularis	**From Botanic Gardens, Ceylon.**
Erodia fraxinifolia	
Urena lobata	Sterculia fœtida
Mœsa macrophylla	
Mimosa rubicaulis	**From Botanic Gardens, Palermo.**
Rhus semicelata	
,, Griffithii	Citrus Bergamia, var. vulgaris
Boehmeria Hamiltonianus	
Callicarpa arborea	**From J. Veitch & Son, Chelsea.**
Capsicum cerneum	
Mallotus philippinensis	Flower seeds (collection)
Uncaria sessilifructus	
Smilax sp.	**From M. Buysman, Holland.**
Lonicera glabrata	
	Commelina scapigera
From Agri-Horticultural Society, Madras.	Bulbine semibarbata
	,, asphodeloides
Ficus racemosa	Chenopodium atroplicinum
,, indica	Calendula persica
,, religiosa	Lobelia purpurascens
Cassia fistula	Caltha leptosepala
,, nodosa	Globba marantina
Parkia biglandulosa	Doronicum carpetanum
Lagerstrœmia flos-Reginæ	Iris fragrans
Bombax malabaricum	Artemisia discolor
Peltophorum ferrugineum	Geranium canariense
Thespesia populnea	,, yesœnse
Hibiscus collinus	Cistus undulatus
Gmelina arborea	Allium altissimum
Terminalia arjuna	
Pterocarpus marsupium	**From J. C. Lewis, Trinidad.**
Sterculia fœtida	
Azadriachta indica	Pritchardia pacifica
Adenanthera pavonina	Hippeastrum equestre
Acacia sundra	
Erythrina indica	**From Prof. Carmody, Trinidad.**
Cæsalpinia sappan	
Corypha umbraculifera	Anona sp.
	From T. Christy & Co.
From Botanic Gardens, Bangalore.	
	Roses (collection)
Ipomæa tuberosa	Coffea sp.
Cassia montana	
Bauhinia tomentosa	**From T. J. St. Hill, Esq., Trinidad.**
From Botanic Gardens, Hong Kong.	Hibiscus mutabilis
Camellia reticulata	From Ben Lomond Estate, Cane Seed
Cupressus funebris	,, Malgrétoute Estate, ,,
Cratæva religiosa	,, J. H. Connell, Esq., Cedros, ,,
Aleurites cordata	,, Cedar Hill Estate, ,,
Ardisia humilis	,, Hermitage Estate, ,,
Eugenia buxifolia	,, R. D. Chandler, Esq., Chaguanas, ,,
Rhodoleia Championi	,, Plein Palais Estate, ,,
Melastoma sanguineum	,, La Fortuné Estate, ,,
,, candidum	,, Tennant's Agency, ,,
Sida corylifolia	,, Bonne Aventure Estate, ,,
Coffea bengalensis	,, Inverness Estate, ,,
Pottsia cantonensis	

APPENDIX III.

DAILY RECORD OF SUNSHINE OBSERVATIONS AT ROYAL BOTANIC GARDENS, TRINIDAD, 1896.

Date.	Jany.		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 ...	2	10	1	28	6		7	6	6	15	0	40	1	28	1	37	6	30	4	30	4	30	6	45
2nd ...	7	48	8		4	43	6	38	7	52	1	54	1	1	7	41	3	48	4	20	8	41	8	51
3rd ...	8	20	6	30	2		7	29	9	2	9	23	8	53	2	7	2	31	2	20	7	42	2	33
4th ...	6	49	5	50	2	55	3	8	7	30	4	54	5	2	4	11	5	6	6	45	6	12	8	4
5th ...	1		8	20	1	29	0	57	7	30	7	36	7	46	8	15	2	47	7	25	2	6	1	28
6th ...	1	56	7	50	6	9	7	30	8	13	8	40	Nil.		5	33	3	30	8	20	3	43	3	30
7th ...	4	55	7	36	7	41	4	9	4	1	7	30	4	4	3	52	0	28	8	13	4	27	Nil.	
8th ...	2	39	8	6	4	51	2	8	7	59	8	25	3	45	3	35	3	50	8	30	9	8	0	45
9th ...	8	4	4	9	5	42	4	59	9	18	Nil.		8	6	6	5	5	28	8	8	6	33	3	28
10th ...	7	39	2	20	1	30	1	12	No Recd.		6	30	1	31	7	26	5	50	6	8	1	27	3	36
11th ...	0	45	5	50	4	58	4	1	4	44	8	1	7	43	0	43	3	14	6	15	9	10	4	30
12th ...	7	4	8	24	4	30	0	42	8	2	3	17	No Recd.		3	20	6	2	5	8	3	21	1	52
13th ...	7		7	18	5	39	0	28	5	11	1	7	9	10	4	45	6	7	4	25	4	44	6	47
14th ...	0	19	8	29	7	43	1	52	3	9	2	55	4	5	1	24	5	50	3	52	5	11	Nil.	
15th ...	3	7	6	44	7	2	2	22	7	52	1	16	7	14	0	39	4	30	1	17	Nil.		5	55
16th ...	No Recd.		4	21	5	41	6	58	8	12	0	2	2	43	2	56	3	34	5	22	4		8	45
17th ...	No Recd.		6	37	6	55	5	13	8	45	1	5	2	45	7	9	3	15	1	13	4	45	7	58
18th ...	9	7	8	2	3	10	4		3	58	0	50	8	43	0	35	7	35	2	30	9	30	9	25
19th ...	8	23	8	22	7	30	1	49	8	1	4	18	5	26	4	15	5	51	4	49	9	15	9	25
20th ...	5	46	5	36	2	47	8	5	7	6	8	20	5	9	4	50	5		7	10	5	46	3	29
21st ...	5	12	8	12	6	6	6	42	2	11	8	34	3	55'	5	55	4	7	6	58	4	15	7	16
22nd ...	0	50	6	23	3	2	4	15	3	4	8	10	3	16	6	50	3	50	8	32	5	17	9	23
23rd ...	9		7	32	6	49	5	29	4	18	8	15	8	43	2	29	Nil.		3	25	3	38	5	45
24th ...	6	30	4	3	2	53	7	21	5	5	1	45	5	13	2	35	3		8		3	22	5	35
25th ...	0	24	1	42	5		6	6	4	4	4	40	8	40	5	37	0	32	7	40	5		8	27
26th ...	8	24	8	23	7	45	7	14	2	29	3	16	1	28	2	45	7	40	1	7	2	30	2	4
27th ...	8	54	7	25	4	51	8	16	5	9	2	13	7	25	2	58	4	48	2	32	3	14	6	1
28th ...	4	38	6	14	Nil.		6	45	Nil.		4	36	5	47	2	22	7	50	4	14	6	8	8	15
29th ...	8	50	4	55	2	36	8	10	2	16	7	47	4		2	46	4	45	5	40	Nil.		8	8
30th ...	8	40	...		2	20	5	15	4	43	3	16	3	27	Nil.		6	38	2	59	2	6	9	23
31st ...	6	27	...		5	36	...		3	50	...		2	40	7	40	...		0	59	...		9	16
Totals ...	155	40	184	41	145	48	141	14	169	49	139	15	144	8	122	55	139	51	158	46	145	41	176	39
Daily Means	5h 22' 4"		6h 22' 6"		4h 42'11"		4h 42'28"		5h 39'38"		4h 38'30"		4h 48'16"		3h 57'54"		4h 27'42"		5h 7'17"		4h 51'22"		5h 41'54"	

APPENDIX IV.

ROYAL BOTANIC GARDENS, ANNUAL RAINFALL, 1862 TO 1896, 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	4·96	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	6·82	67·86	
1867 ...	1·31	6·36	·83	1·32	2·33	5·30	12·20	15·21	10·45	7·87	·67	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	5·87	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	9·89	3·04	49·95	In the decade 4 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	1·96	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	1·78	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	In the decade 4 years above and 6 years below 30 years average.
1883 ...	1·56	·71	·26	3·37	5·89	10·91	13·66	10·26	5·53	3·99	6·06	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	3·46	11·92	6·89	7·02	5·53	5·06	7·76	2·95	65·44	
1889 ...	0·94	0·85	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	7·28	3·16	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	

*Average Annual Rainfall for 30 years—1862 to 1891 = 65·91 inches.
†Average last 5 years—1892 to 1896 = 72·92 ,,

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

APPENDIX V.

METEOROLOGICAL RESULTS FOR 1896, TAKEN AT THE ROYAL BOTANIC GARDENS.

MONTH.	BAROMETER.		THERMOMETERS.												
	Reduced Readings.		Dry & Wet Bulbs.				Maximum.	Minimum.	Mean Temperature, Blackened Bulb in Vacuo.	Mean Temperature, Thermometer on Grass.	Humidity.	Tension of Aqueous Vapour.	Rainfall.	Dew Point, 7 A.M.	Dew Point, 3 P.M.
	7 A.M.	3 P.M.	7 A.M.		3 P.M.										
	Bar.	Bar.	D.	W.	D.	W.									
	In.	In.	°	°	°	°	°	°	°	°	°		In.	°	°
January ...	29·994	29·938	70·1	69·1	82·2	75·0	85·8	67·5	155·1	66·8	80·	·708	7·08	68·33	70·18
February ...	30·018	29·975	68·5	67·5	84·5	74·7	86·9	66·7	159·0	65·2	77·	·672	·88	66·71	68·24
March ...	29·990	29·935	72·4	70·7	83·9	75·4	87·7	68·8	162·5	67·0	76·	·720	1·59	69·43	69·79
April ...	29·963	29·911	73·5	72·0	85·6	76·2	89·4	69·4	161·6	67·6	76·	·746	2·33	70·89	70·09
May ...	29·979	29·927	75·9	74·0	86·4	77·4	91·1	72·0	161·2	70·0	76·	·798	1·62	72·66	71·55
June ...	30·023	29·960	75·2	73·4	83·1	77·1	88·9	71·7	160·8	70·5	80·	·798	10·29	72·11	73·08
July ...	30·031	29·989	74·1	73·0	84·0	78·4	88·2	70·5	160·4	69·5	83·	·826	6·35	72·20	74·71
August ...	30·010	29·955	74·9	73·9	82·8	78·2	88·4	71·7	160·4	70·9	84·	·840	7·66	73·18	75·12
September ...	29·954	29·897	75·3	74·1	84·1	78·4	88·6	72·1	160·3	71·0	83·	·840	6·46	73·24	74·64
October ...	29·953	29·889	75·7	74·4	85·1	79·0	88·8	72·1	158·9	71·0	81·	·840	6·05	73·48	75·04
November ...	29·914	29·855	73·8	73·4	82·7	78·1	88·3	71·2	159·3	70·3	86·	·840	9·81	73·11	75·02
December ...	29·969	29·921	72·9	72·0	83·4	77·2	87·0	70·1	154·0	69·4	82·	·785	6·33	71·31	73·05
Average for year.	29·983	29·929	73·52	72·29	83·98	77·09	87·84	70·31	159·45	69·1	80·	·784	5·53	71·38	72·54
Mean daily height of Barometer	29·956 inches.				Mean Annual Temperature		79·07					Total Rainfall		66·45 inches.	

APPENDIX VI.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING 31ST DECEMBER, 1896.

No. of Station	Diameter of Gauge. Govt. or Private.	STATIONS.	January.	Febr.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
	In.														
1	8	St. Ann's—Royal Botanic Gardens ...	7·08	·88	1·59	2·33	1·62	10·29	6·53	7·66	6·46	6·05	9·81	6·33	66·63
52	8	Port-of-Spain—Police Station ...	6·26	·36	2·89	1·56	1·33	10·83	3·96	9·44	3·51	4·56	11·57	7·50	63·32
64	8	Royal Gaol ...	6·75	1·08	2·26	1·98	1·72	8·96	4·85	9·89	2·53	4·96	9·92	7·67	62·57
4	5	St. Joseph—Warden's Office ...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	5	St. Joseph—Police Station ...	6·67	1·11	2·37	5·14	4·30	12·52	5·95	11·84	4·89	5·44	8·98	9·96	79·05
6	8	Tunapuna Village—Macoya Estate ...	5·99	...	...	...	...	...	...	...	...	...	...	...	...
44	8	Arouca—Bon Air ...	...	1·21	2·31	3·43	...	...	...	8·50	7·44	3·96	11·16	...	...
9	5	Cumuto—Santa Teresa ...	17·15	1·53	4·41	4·03	7·43	17·24	9·19	10·51	5·41	4·43	15·12	14·77	111·22
49	5	Garden Estate—Arima ...	11·90	1·21	2·31	3·43	7·66	14·08	9·30	8·50	7·44	3·96	11·16	9·07	90·11
7	5	Arima—Sorzano Street ...	13·02	1·13	1·45	2·06	2·85	...	6·98	8·81	2·04	5·44	9·60	10·96	...
11	5	Toco—La Sagesse ...	8·66	1·49	1·28	2·29	5·86	7·66	6·54	3·76	6·49	3·36	16·20	12·03	75·02
10	5	Toco—Police Station ...	10·88	2·62	2·83	3·87	11·33	12·71	8·23	5·62	9·81	5·57	23·53	15·07	112·07
14	5	Couva—Exchange Village ...	9·30	·81	2·87	1·73	7·06	9·65	7·36	6·41	4·13	2·42	8·16	8·19	68·09
15	5	Couva—Police Station ...	9·79	1·15	2·90	2·20	7·58	12·65	8·04	6·78	5·21	3·39	8·97	8·56	78·02
19	8	Montserrat—Tortuga Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	8	La Reunion Estate—Caroni (Arima)...	11·78	1·62	2·54	3·16	8·32	16·04	10·33	12·31	5·83	4·72	11·69	13·88	109·22
18	5	Montserrat—Police Station ...	11·92	·91	1·78	·57	8·19	10·92	10·06	5·91	5·02	2·66	7·52	9·70	75·11
25	...	Oropuche—Police Station ...	6·65	·83	1·37	2·23	6·80	7·10	6·08	8·64	5·10	6·90	12·65	7·60	72·00
26	8	Savana Grande North—Elsewick Village	11·66	1·09	2·30	3·28	9·95	13·40	13·50	7·75	6·21	1·92	16·24	14·49	101·79
27	5	Cedros—Police Station ...	3·02	1·23	4·21	3·39	2·86	11·05	4·63	5·38	7·22	2·65	6·86	10·20	62·60
60	...	Cedros—Columbia (c.w.) ...	4·39	·62	7·40	6·50	2·55	16·85	17·30	9·50	7·50	4·69	8·80	18·87	102·97
72	...	St. Marie Estate—Cedros ...	...	...	...	...	...	...	...	...	...	...	...	...	...
73	...	La Retrait Estate—Cedros ...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	5	Tucker Valley ...	7·34	·70	1·10	4·11	3·76	7·90	10·15	12·37	4·68	3·95	13·87	10·07	79 98
21	8	Sangre Grande—Sta. Estella Estate ...	20·52	2·54	4·86	4·84	13·56	21·12	7·95	14·69	10·01	9·55	25·37	19·05	154·09
22	5	Princes Town—Police Station ...	10·60	1·49	2·42	2·60	7·77	11·94	9·08	6·98	8·80	2·71	11·67	8·08	84·14
23	8	St. Clair Estate—Arouca ...	9·77	·89	2·68	3·56	6·93	14·35	8·95	9·57	8·60	4·66	9·26	8·16	87·38
48	8	Princes Town—Lengua, Los Naranjos..	10·61	1·04	2·41	1·55	8·85	13·45	13·89	6·74	5·64	4·23	13·62	12·36	93·89
16	5	Claxton's Bay—Forrest Park Estate ...	9·40	·41	2·24	·11	7·12	12·52	9·48	6·73	5·84	2·68	6·36	5·93	68·77
17	8	District Medical Officer—Cedros ...	...	1·68	4·29	5·77	...	...	...	...	...	...	...	...	...
37	5	Concord Estate—Naparima ...	6·89	·76	1·41	2·68	...	...	...	4·06	6·69	3·31	9·61	...	...
32	5	Mayaro—Police Station ...	10·41	2·49	3·32	1·82	6·39	13·70	6·57	14·58	7·81	4·06	17·40	15·13	104·58
12	5	Chaguanas—Police Station ...	9·11	1·01	2·55	2·74	6·32	15·55	8·09	7·59	5·15	3·43	7·69	8·97	78·40
13	5	Chaguanas—Perseverance Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...

APPENDIX VI.—Continued.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING 31ST DECEMBER, 1896.

No. of Station	Diameter of Gauge, Govt. or Private.	STATIONS.	January.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
	In.														
50	8	Chaguanas—Convict Depôt ...	11·11	1·16	2·66	3·71	7·43	18·61	9·07	8·92	6·15	4·02	8·66	8·30	89·79
61	...	Chaguanas—Retrench ...	...	...	...	·70	·70	6·96	6·06	5·60	6·21	2·11	9·81	...	...
8	8	Tumpuna—Police Station ...	14·09	1·28	1·98	2·12	2·90	6·64	3·76	3·54	2·14	1·94	5·35	5·28	50·37
28	5	Erin—*La Ressource* Estate ...	...	1·97	2·32	3·25	3·12	9·23	5·86	5·68	5·31	5·20	...	...	...
46	8	Erin—Chatham ...	4·47	2·53	5·24	6·41	4·09	12·50	12·01	7·41	9·62	5·08	18·58	18·08	106·02
29	8	Moruga—Police Station ...	8·54	·97	1·37	·85	2·12	5·70	4·14	2·83	1·94	1·47	5·70	4·05	39·68
30	8	Moruga Road—Rest House ...	11·62	4·61	7·14	5·44	7·90	19·65	10·30	7·40	7·73	8·29	15·33	14·86	120·27
33	...	St. Juan—Barataria Estate ...	10·01	·58	2·91	2·52	2·99	13·95	7·30	12·48	4·75	3·66	12·30	8·62	82·07
34	...	Naparima—Harmony Hall Est. (H.H.)	...	...	...	...	5·74	...	7·08	...	...	...	...	...	...
35	...	Naparima—Tarouba Estate (T.B.) ...	...	...	...	·56	5·74	23·87	16·86	4·70	2·82	2·73	11·00	...	...
36	5	Naparima—Williamsville Est. (W.V.) ...	...	·91	1·90	2·15	7·62	11·05	8·86	9·06	7·72	1·99	10·61	...	...
38	...	Naparima—Union Hall Estate (N.) ...	9·43	·39	3·85	1·41	6·62	7·87	9·07	7·15	4·53	2·49	6·45	...	...
39	...	Naparima—Petit Morne Estate (P.M.)	8·79	·48	2·15	1·03	5·65	12·91	8·54	6·71	7·52	2·50	13·77	7·40	77·45
40	8	Naparima—Golconda Estate (G.C.) ...	8·09	·73	2·45	1·33	6·05	11·91	9·26	6·61	5·76	2·60	11·75	9·08	75·62
41	5	Naparima—Cedar Hill Estate (C.H.) ...	10·90	·65	2·36	1·30	8·54	11·25	9·56	6·35	7·45	1·68	16·15	9·76	85·95
42	...	Naparima—St. Madeleine Usine (U.S.M.)	9·60	·36	2·91	·68	7·69	13·86	8·84	6·28	7·56	2·32	14·63	10·78	86·41
59	...	Naparima—Plein Palais (P.P.) ...	8·03	·63	1·75	2·95	5·18	8·14	8·30	4·15	2·10	4·40	22·14	8·40	76·12
45	8	Naparima—Wellington Estate ...	9·00	1·29	1·96	1·22	2·53	10·69	7·49	5·35	6·47	1·83	11·62	8·05	67·50
56	5	Naparima—Craignish Estate ...	6·83	·75	2·05	...	9·17	12·76	8·30	7·10	8·56	1·93	14·08	...	...
47	8	San Fernando—Lewisville ...	8·73	·99	1·66	1·74	4·69	9·44	10·53	5·97	3·82	4·04	11·53	8·72	71·86
51	8	Maraval—Police Station ...	8·26	1·10	3·17	4·97	2·52	8·68	10·00	7·21	6·78	8·50	11·75	8·27	81·21
53	8	Diego Martin—Police Station ...	7·54	1·52	2·36	2·84	4·26	8·71	9·54	9·64	4·33	6·96	14·54	7·41	79·65
54	8	Maracas Bay ...	11·03	2·32	5·48	6·22	6·76	11·56	15·64	11·64	6·91	9·47	17·64	7·69	112·56
55	8	Maracas—Government School ...	9·78	·36	3·70	2·47	3·38	10·19	7·49	6·62	4·90	5·75	11·77	8·65	75·06
57	8	Blanchisseuse ...	17·17	3·18	6·04	4·08	7·50	16·23	8·15	5·50	5·38	1·76	12·69	14·78	102·46
58	8	Cap-de-Ville ...	4·03	·93	5·88	4·21	7·10	9·58	8·70	9·62	6·94	7·51	12·83	11·12	88·45
62	8	Valencia ...	...	...	...	...	...	...	...	...	...	...	...	...	...
63	8	La Brea ...	4·80	1·45	1·94	2·47	6·44	7·41	8·83	7·77	3·97	5·10	11·54	7·61	69·33
43	8	Hicacos—Constance Estate ...	3·90	·97	4·54	2·88	2·28	11·87	14·08	8·84	4·83	4·96	11·54	...	...
66	8	Carapichaima—Waterloo ...	8·03	·61	2·36	2·86	7·63	11·06	6·93	6·12	3·62	1·61	6·72	7·27	64·82
65	...	Hybernia Estate ...	15·03	1·25	2·62	·65	9·35	14·45	10·35	6·62	5·85	2·72	10·03	10·30	89·12
68	8	Manzanilla—Police Station ...	14·33	2·36	2·56	3·82	7·38	15·53	9·73	10·49	8·96	5·70	23·48	16·00	130·34
3	8	Santa Cruz—Police Station ...	6·99	1·76	3·68	4·26	8·09	8·74	7·61	8·03	4·16	7·79	13·13	9·18	83·32
69	5	Brechin Castle Estate—Couva ...	8·76	·90	3·32	2·36	7·39	10·59	8·15	8·22	5·52	1·96	9·86	8·64	75·87

APPENDIX VI.—Continued.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING 31ST DECEMBER, 1896.

No. of Station	Diameter of Gauge, Govt. or Private.	STATIONS.	January.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
	In.														
70	5	Rivulet Estate—Couva ...	·78	1·19	1·34	1·73	9·48	12·84	8·38	3·82	6·06	5·33	9·67	7·95	68·57
71	5	St. Helena Estate ...	3·24	1·06	1·45	·18	1·72	4·22	9·45	16·02	6·08	6·05	10·06	7·91	66·44
74	5	La Plaisance Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
76	5	Caroni—Curepe Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
77	5	Caroni—McLeod Plain Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
78	5	Caroni—Frederick Estate ...	9·86	1·37	3·52	3·40	9·49	15·44	9·74	8·76	7·10	2·93	9·77	10·06	91·43
79	5	Orange Grove Estate—Tacarigua ...	10·71	·76	2·02	3·08	6·00	16·57	9·73	11·39	14·71	2·76	11·36	10·55	100·54
81	...	St. Stephen's Rectory—Princes Town...	10·24	·32	2·23	2·24	7·89	11·47	8·66	6·22	8·41	2·62	10·62	8·55	79·87
80	8	Siparia—Rest House ...	7·67	2·60	4·75	4·06	7·31	12·81	9·90	12·85	8·30	8·77	20.78	11·08	110·85
81	8	St. John's—Cedros ...	...	...	...	...	...	10·22	6·42	...	5·24	4·48	...	...	...
82	5	Tacarigua—El Dorado Estate ...	6·25	·70	1·99	3·00	6·54	16·15	9·64	11·03	14·29	2·76	11·36	10·08	93·79
83	8	Carenage—Police Station ...	8·97	2·29	1·52	2·89	4·31	9·80	8·46	6·89	3·09	5·27	14·62	8·32	75·93
84	8	Guapo—Adventure Estate ...	8·75	1·17	2·74	3·48	5·13	9·07	10·34	11·17	6·48	6·50	16·04	8·47	84·34
85	8	Fairfield Estate—Princes Town ...	...	...	...	...	...	...	...	...	...	...	...	...	...
86	8	Lothians—Princes Town ...	12·02	·51	2·67	1·29	8·02	11·54	7·44	5·80	5·60	1·91	12·98	8·85	78·63
24	8	Maraval Reservoir ...	7·40	1·65	2·58	5·41	1·68	10·69	6·97	8·32	5·64	3·07	10·76	7·19	77·16
67	8	St. Ann's Reservoir ...	6·97	·73	2·50	3·20	1·73	8·52	5·95	6·04	3·54	5·64	7·82	5·68	58·32
87	5	Oropuche—Nelson Estate ...	5·14	...	...	...	...	...	...	...	...	...	...	...	...
88	8	Cedros—Perseverance Estate ..	2·96	1·43	3·87	4·16	2·48	9·77	6·53	6·75	8·82	4·36	7·55	10·29	68·97
89	8	Savonetta—Esperanza Estate ...	8·03	·61	2·84	·87	7·82	9·81	7·33	6·99	4·62	2·03	10·59	7·08	68·52
90	8	La Gloria Estate—Gran Couva ...	15·40	2·07	2·41	1·22	10·24	...	11·65	8·19	6·59	2·99	9·45	...	...
91	8	Dabadie ...	11·35	1·75	2·27	3·43	5·16	16·12	8·60	9·89	13·16	8·03	12·88	11·15	103·79
92	...	Cunupia—Mon Plaisir Estate ...	...	...	3·56	...	7·14	17·05	9·04	9·06	6·97	2·57	...	...	...
93	...	Arouca—Laurel Hill Estate ...	13·19	·71	2·85	4·02	6·63	13·34	8·76	11·01	7·18	5·62	10·96	9·40	93·67
94	...	Naparima—Philippine Estate ...	8·70	·74	4·11	2·52	4·87	8·31	7·78	5·41	7·56	2·36	10·05	8·40	70·81
95	...	Naparima—Corinth Estate ...	8·64	·60	2·07	·50	4·83	9·13	7·55	5·56	4·85	2·08	10·18	7·78	63·77
96	8	San Juan—Aranjuez Estate ...	7·59	·61	2·99	2·87	4·28	10·69	6·50	10·44	4·11	5·13	9·72	7·92	72·85
97	8	Woodbrook ...	6·37	·94	1·14	2·29	1·15	8·24	4·19	10·39	2·65	5·65	9·93	7·18	60·12
98	...	Fort George Signal Station ...	8·43	1·48	2·39	2·39	2·14	9·41	8·69	8·53	4·77	5·21	13·61	7·21	74·26
99	...	North Post " ...	7·56	2·07	2·01	3·25	4·84	6·44	8·18	9·74	4·19	5·82	12·07	7·98	74·15
100	8	Perseverance Estate—Couva ...	9·90	·62	2·71	1·75	6·25	8·26	6·66	6·66	4·05	1·38	9·33	7·92	64·89
101	8	Camden Estate—Couva ...	9·07	·74	1·76	·87	6·34	8·63	6·17	6·24	3·79	4·17	8·30	8·29	64·37
102	...	La Juanita—Maturra ...	...	...	...	...	...	19·60	...	11·45	11·18	4·56	23·79	...	...
103	8	St. Augustine—Tunapuna ...	7·69	·59	·63	2·03	3·95	11·50	7·36	10·83	6·53	4·39	8·21	6·13	69·84
104	8	Ben Lomond Estate—S. Naparima ..	8·50	·38	1·28	·82	5·83	8·39	4·57	6·69	6·32	1·90	11·04	8·19	62·91
105	...	Woodford Lodge Estate ...	9·25	1·06	2·57	2·71	7·36	13·13	...	7·04	4·76	2·92	...	...	...
106	...	Palmiste Usine ...	8·97	·52	2·03	1·88	5·92	7·64	7·79	6·92	4·19	3·14	9·93	8·29	67·22
107	5	Carrera Island ...	5·18	·63	·60	1·83	1·09	6·75	5·44	6·74	2·42	1·77	7·51	4·40	44·36
108	...	Bronte Estate ...	8·62	·42	2·05	1·39	9·22	12·42	6·79	5·42	5·60	2·48	11·47	8·28	74·16
109	...	Arima ...	13·66	1·44	2·50	3·64	8·07	18·06	9·83	10·56	11·15	6·45	11·84	13·22	110·42
		Totals ...	788·47	107·09	247·26	245·19	530·32	1054·75	770·16	747·79	573·78	396·48	1073·59	764·15	6440·37
		Monthly Average, and Mean for year all Stations	8·95	1·18	2·71	2·69	5·82	11·71	8·48	8·04	6·10	4·21	11·92	9·55	81·52

Mean Rainfall for year at 79 Stations ... ... 81·52 inches.

APPENDIX II.—*Continued.*

NAMES.	NAMES.
From Botanic Gardens, Saharunpur.	**From Botanic Gardens, Nagpur.**
Phœnix rupicola	Mimusops Kaukii
Dobinea vulgaris	Soymida febrifuga
Prunus Puddianus	Hardwickia binata
Ficus foveolata	
Elsholtzia blanda	**From Botanic Gardens, Brisbane.**
Tephrosia candida	
Grewia lævigata	Acacia pendula
Ophiopogon sp.	,, decora
Daphne papyracea	Cedrela Toona
Cassia sp.	
Astilbe rivularis	**From Botanic Gardens, Ceylon.**
Erodia fraxinifolia	
Urena lobata	Sterculia fœtida
Mœsa macrophylla	
Mimosa rubicaulis	**From Botanic Gardens, Palermo.**
Rhus semicelata	
,, Griffithii	Citrus Bergamia, var. vulgaris
Bœhmeria Hamiltonianus	
Callicarpa arborea	**From J. Veitch & Son, Chelsea.**
Capsicum cerneum	
Mallotus philippinensis	Flower seeds (collection)
Uncaria sessilifructus	
Smilax sp.	**From M. Buysman, Holland.**
Lonicera glabrata	
	Commelina scapigera
From Agri-Horticultural Society, Madras.	Bulbine semibarbata
	,, asphodeloides
Ficus racemosa	Chenopodium atroplicinum
,, indica	Calendula persica
,, religiosa	Lobelia purpurascens
Cassia fistula	Caltha leptosepala
,, nodosa	Globba marantina
Parkia biglandulosa	Doronicum carpetanum
Lagerstrœmia flos-Reginæ	Iris fragrans
Bombax malabaricum	Artemisia discolor
Peltophorum ferrugineum	Geranium canariense
Thespesia populnea	,, yesœnse
Hibiscus collinus	Cistus undulatus
Gmelina arborea	Allium altissimum
Terminalia arjuna	
Pterocarpus marsupium	**From J. C. Lewis, Trinidad.**
Sterculia fœtida	
Azadriachta indica	Pritchardia pacifica
Adenanthera pavonina	Hippeastrum equestre
Acacia sundra	
Erythrina indica	**From Prof. Carmody, Trinidad.**
Cæsalpinia sappan	
Corypha umbraculifera	Anona sp.
	From T. Christy & Co.
From Botanic Gardens, Bangalore.	
	Roses (collection)
Ipomœa tuberosa	Coffea sp.
Cassia montana	
Bauhinia tomentosa	**From T. J. St. Hill, Esq., Trinidad.**
From Botanic Gardens, Hong Kong.	Hibiscus mutabilis
Camellia reticulata	From Ben Lomond Estate, Cane Seed
Cupressus funebris	,, Malgrétoute Estate, ,,
Crataeva religiosa	,, J. H. Connell, Esq., Cedros, ,,
Aleurites cordata	,, Cedar Hill Estate, ,,
Ardisia humilis	,, Hermitage Estate, ,,
Eugenia buxifolia	,, R. D. Chandler, Esq., Chaguanas, ,,
Rhodoleia Championi	,, Plein Palais Estate, ,,
Melastoma sanguineum	,, La Fortuné Estate, ,,
,, candidum	,, Tennant's Agency, ,,
Sida corylifolia	,, Bonne Aventure Estate, ,,
Coffea bengalensis	,, Inverness Estate, ,,
Pottsia cantonensis	

APPENDIX III.

DAILY RECORD OF SUNSHINE OBSERVATIONS AT ROYAL BOTANIC GARDENS, TRINIDAD, 1896.

Date.	Jany.		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 ...	2	10	1	28	6		7	6	6	15	0	40	1	28	1	37	6	30	4	30	4	30	6	45
2nd ...	7	48	8		4	43	6	38	7	52	1	54	1	1	7	41	3	48	4	20	8	41	8	51
3rd ...	3	20	6	30	2		7	29	9	2	9	23	3	53	2	7	2	31	2	20	7	42	2	33
4th ...	6	49	5	50	2	55	3	8	7	30	4	54	5	2	4	11	5	6	6	45	6	12	8	4
5th ...	1		8	20	1	29	0	57	7	30	7	36	7	46	8	15	2	47	7	25	2	6	1	28
6th ...	1	56	7	50	6	9	7	30	8	18	8	40	Nil.		5	33	3	30	8	20	3	43	3	30
7th ...	4	55	7	36	7	41	4	9	4	1	7	30	4	4	3	52	0	28	8	13	4	27	Nil.	
8th ...	2	39	8	6	4	51	2	8	7	59	8	25	3	45	3	35	3	50	8	30	9	8	0	45
9th ...	8	4	4	9	5	42	4	59	9	18	Nil.		8	6	6	5	5	28	8	8	6	33	3	28
10th ...	7	39	2	20	1	30	1	12	No Recd.		6	30	1	31	7	26	5	50	6	8	1	27	3	36
11th ...	0	45	5	50	4	53	4	1	4	44	8	1	7	43	0	43	3	14	6	15	9	10	4	30
12th ...	7	4	8	24	4	30	0	42	8	2	3	17	No Recd.		3	20	6	2	5	8	3	21	1	52
13th ...	7		7	18	5	39	0	28	5	11	1	7	9	10	4	45	6	7	4	25	4	44	6	47
14th ...	0	19	8	29	7	43	1	52	3	9	2	55	4	5	1	24	5	50	3	52	5	11	Nil.	
15th ...	3	7	6	44	7	2	2	22	7	52	1	16	7	14	0	39	4	30	1	17	Nil.		5	55
16th ...	No Recd.		4	21	5	41	6	53	8	12	0	2	2	43	2	56	3	34	5	22	4		8	45
17th ...	No Recd.		6	37	6	55	5	13	8	45	1	5	2	45	7	9	3	15	1	13	4	45	7	58
18th ...	9	7	8	2	3	10	4		3	58	0	50	8	43	0	35	7	35	2	30	9	30	9	25
19th ...	8	23	8	22	7	30	1	49	8	1	4	18	5	26	4	15	5	51	4	49	9	15	9	25
20th ...	5	46	5	36	2	47	8	5	7	6	8	20	5	9	4	50	5		7	10	5	46	3	29
21st ...	5	12	8	12	6	6	6	42	2	11	8	34	3	55	5	55	4	7	6	58	4	15	7	16
22nd ...	0	50	6	23	3	2	4	15	3	4	8	10	3	16	6	50	3	50	8	32	5	17	9	23
23rd ...	9		7	32	6	49	5	29	4	18	8	15	8	43	2	29	Nil.		3	25	3	38	5	45
24th ...	6	30	4	3	2	53	7	21	5	5	1	45	5	13	2	35	3		8		3	22	5	35
25th ...	0	24	1	42	5		6	6	4	4	4	40	8	40	5	37	0	32	7	40	5		8	27
26th ...	8	24	8	23	7	45	7	14	2	29	3	16	1	28	2	45	7	40	1	7	2	30	2	4
27th ...	8	54	7	25	4	51	8	16	5	9	2	13	7	25	2	58	4	48	2	32	3	14	6	1
28th ...	4	38	6	14	Nil.		6	45	Nil.		4	36	5	47	2	22	7	50	4	14	6	8	8	15
29th ...	8	50	4	55	2	36	3	10	2	16	7	47	4		2	46	4	45	5	40	Nil.		8	8
30th ...	8	40	...		2	20	5	15	4	43	3	16	3	27	Nil.		6	33	2	59	2	6	9	23
31st ...	6	27	...		5	36	...		3	50	...		2	40	7	40	...		0	59	...		9	16
Totals ...	155	40	184	41	145	48	141	14	169	49	139	15	144	8	122	55	133	51	158	46	145	41	176	39
Daily Means	5h 22' 4"		6h 22' 6"		4h 42'11"		4h 42'28"		5h 39'38"		4h 38'30"		4h 48'16"		3h 57'54"		4h 27'42"		5h 7'17"		4h 51'22"		5h 41'54"	

APPENDIX IV.

ROYAL BOTANIC GARDENS, ANNUAL RAINFALL, 1862 TO 1896, 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	4·96	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	6·82	67·86	
1867 ...	1·31	6·36	·83	1·32	2·33	5·30	12·20	15·21	10·45	7·87	·67	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	5·87	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	9·89	3·04	49·95	In the decade 4 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	1·96	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	1·78	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	In the decade 4 years above and 6 years below 30 years average.
1883 ...	1·56	·71	·26	3·37	5·89	10·91	13·66	10·26	5·53	3·99	6·06	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	3·46	11·92	6·89	7·02	5·53	5·06	7·76	2·95	66·44	
1889 ...	0·94	0·85	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	7·28	3·16	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	

*Average Annual Rainfall for 30 years—1862 to 1891 = 65·91 inches.
†Average last 5 years—1892 to 1896 = 72·92 "

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Superintendent Botanical Department.

APPENDIX V.

METEOROLOGICAL RESULTS FOR 1896, TAKEN AT THE ROYAL BOTANIC GARDENS.

MONTH.	BAROMETER. Reduced Readings. 7 A.M. Bar.	BAROMETER. Reduced Readings. 3 P.M. Bar.	THERMOMETERS. Dry & Wet Bulbs. 7 A.M. D.	7 A.M. W.	3 P.M. D.	3 P.M. W.	Maximum.	Minimum.	Mean Temperature, Blackened Bulb in Vacuo.	Mean Temperature, Thermometer on Grass.	Humidity.	Tension of Aqueous Vapour.	Rainfall.	Dew Point, 7 A.M.	Dew Point, 3 P.M.
	In.	In.	°	°	°	°	°	°	°	°	°		In.	°	°
January ...	29·994	29·938	70·1	69·1	82·2	75·0	85·8	67·5	155·1	66·8	80·	·708	7·08	68·33	70·18
February ...	30·018	29·975	68·5	67·5	84·5	74·7	86·9	66·7	159·0	65·2	77·	·672	·88	66·71	68·24
March ...	29·990	29·935	72·4	70·7	83·9	75·4	87·7	68·8	162·5	67·0	76·	·720	1·59	69·43	69·79
April ...	29·963	29·911	73·5	72·0	85·6	76·2	89·4	69·4	161·6	67·6	76·	·746	2·33	70·89	70·09
May ...	29·979	29·927	75·9	74·0	86·4	77·4	91·1	72·0	161·2	70·0	76·	·798	1·62	72·66	71·55
June ...	30·023	29·960	75·2	73·4	83·1	77·1	88·9	71·7	160·8	70·5	80·	·798	10·29	72·11	73·08
July ...	30·031	29·989	74·1	73·0	84·0	78·4	88·2	70·5	160·4	69·5	83·	·826	6·35	72·20	74·71
August ...	30·010	29·955	74·9	73·9	82·8	78·2	88·4	71·7	160·4	70·9	84·	·840	7·66	73·18	75·12
September ...	29·954	29·897	75·3	74·1	84·1	78·4	88·6	72·1	160·3	71·0	83·	·840	6·46	73·24	74·64
October ...	29·953	29·889	75·7	74·4	85·1	79·0	88·8	72·1	158·9	71·0	81·	·840	6·05	73·48	75·04
November ...	29·914	29·855	73·8	73·4	82·7	78·1	88·3	71·2	159·3	70·3	86·	·840	9·81	73·11	75·02
December ...	29·969	29·921	72·9	72·0	83·4	77·2	87·0	70·1	154·0	69·4	82·	·785	6·33	71·31	73·05
Average for year.	29·983	29·929	73·52	72·29	83·98	77·09	87·84	70·31	159·45	69·1	80·	·784	5·53	71·38	72·54
Mean daily height of Barometer	29·956 inches.				Mean Annual Temperature		79·07					Total Rainfall		66·45 inches.	

APPENDIX VI.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING 31st DECEMBER, 1896.

No. of Station	Diameter of Gauge. Govt. or Private.	STATIONS.	January.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
	In.														
1	8	St. Ann's—Royal Botanic Gardens ...	7·08	·88	1·59	2·33	1·62	10·29	6·63	7·66	6·46	6·05	9·81	6·33	66·63
52	8	Port-of-Spain—Police Station ...	6·26	·30	2·89	1·55	1·33	10·68	3·96	9·44	3·51	4·56	11·57	7·50	63·82
64	8	Royal Gaol ...	6·75	1·08	2·26	1·98	1·72	8·96	4·85	9·89	2·53	4·96	9·92	7·67	62·57
4	5	St. Joseph—Warden's Office ...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	5	St. Joseph—Police Station ...	6·67	1·11	2·37	5·14	4·30	12·52	5·95	11·94	4·89	5·44	8·86	9·96	79·05
6	8	Tunapuna Village—Macoya Estate ...	5·99	...	...	...	...	...	...	...	...	...	...	...	...
44	8	Arouca—Bon Air ...	...	1·21	2·31	3·43	...	...	...	8·50	7·44	3·96	11·16	...	...
9	5	Cumuto—Santa Teresa ..	17·15	1·53	4·41	4·03	7·43	17·24	9·19	10·51	5·41	4·43	15·12	14·77	111·22
49	5	Garden Estate—Arima ...	11·90	1·21	2·31	3·43	7·66	14·08	9·39	8·50	7·44	3·96	11·16	9·07	90·11
7	5	Arima—Sorzano Street ...	13·02	1·13	1·45	2·96	2·85	...	6·98	8·81	2·04	5·44	9·60	10·96	...
11	5	Toco—La Sagesse ...	8·66	1·49	1·28	2·29	5·86	7·66	6·84	8·76	6·49	3·36	16·20	12·03	75·62
10	5	Toco—Police Station ...	10·88	2·62	2·83	3·87	11·33	12·71	8·23	5·62	9·81	5·57	23·53	15·07	112·07
14	5	Cuova—Exchange Village ...	9·30	·81	2·87	1·73	7·06	9·65	7·36	6·41	4·13	2·42	8·16	8·19	68·09
15	5	Cuova—Police Station ...	9·79	1·15	2·90	2·20	7·58	12·65	8·94	6·78	5·21	3·39	8·97	8·56	78·02
19	8	Montserrat—Tortuga Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	8	La Reunion Estate—Caroni (Arima) ...	11·78	1·62	2·54	3·16	8·32	16·04	10·33	12·31	5·83	4·72	11·69	13·88	102·22
18	5	Montserrat—Police Station ...	11·92	·91	1·73	·57	8·19	10·92	10·06	5·91	5·02	2·66	7·52	9·70	75·11
25	...	Oropuche—Police Station ...	6·65	·83	1·37	2·28	6·80	7·10	6·08	8·64	5·10	6·90	12·65	7·60	72·00
26	8	Savana Grande North—Elswick Village	11·66	1·09	2·30	3·28	9·95	13·40	13·50	7·75	6·21	1·92	16·24	14·49	101·79
27	5	Cedros—Police Station ...	3·02	1·23	4·21	3·39	2·86	11·05	4·63	5·38	7·22	2·65	6·86	10·20	62·60
60	...	Cedros—Columbia (c.w.) ...	4·39	·62	7·40	6·50	2·55	15·35	17·30	9·60	7·50	4·69	8·30	18·87	102·97
72	...	St. Marie Estate—Cedros ...	...	...	...	...	...	...	...	...	...	...	...	...	...
73	...	La Retrait Estate—Cedros ...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	5	Tucker Valley ...	7·34	·70	1·10	4·11	3·76	7·90	10·15	12·37	4·66	3·95	13·87	10·07	79·93
21	8	Sangre Grande—Sta. Estella Estate ...	20·52	2·54	4·86	4·84	13·56	21·12	7·95	14·69	10·04	9·55	25·37	19·05	154·09
22	5	Princes Town—Police Station ...	10·60	1·49	2·42	2·60	7·77	11·94	9·08	6·98	8·80	2·71	11·67	8·08	84·14
23	8	St. Clair Estate—Arouca ...	9·77	·89	2·68	3·56	6·93	14·35	8·95	9·57	8·60	4·66	9·26	8·16	87·38
48	8	Princes Town—Lengua, Los Naranjos..	10·61	1·04	2·41	1·55	8·85	13·45	13·39	6·74	5·64	4·23	13·62	12·36	93·89
16	5	Claxton's Bay—Forrest Park Estate ..	9·40	·41	2·24	·11	7·12	12·52	9·48	6·73	5·84	2·63	6·36	5·93	68·77
17	8	District Medical Officer—Cedros ...	...	1·03	4·29	5·77	...	...	...	...	...	...	...	...	...
37	5	Concord Estate—Naparima ...	6·89	·76	1·41	2·58	...	...	...	4·06	6·69	3·31	9·61	...	...
32	5	Mayaro—Police Station ...	10·41	2·49	3·32	1·82	6·39	13·70	6·57	14·58	7·81	4·96	17·40	15·13	104·58
12	5	Chaguanas—Police Station ...	9·11	1·01	2·55	2·74	6·32	15·65	8·09	7·59	5·15	3·43	7·89	8·97	78·40
13	5	Chaguanas—Perseverance Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...

APPENDIX VI.—Continued.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING 31ST DECEMBER, 1896.

No. of Station	Diameter of Gauge, Govt. or Private.	STATIONS.	January.	Feby	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
	In.														
50	8	Chaguanas—Convict Depôt ...	11·11	1·16	2·66	3·71	7·43	18·61	9·07	8·92	6·15	4·02	8·65	8·30	89·79
61	...	Chaguanas—Retrench ...	...	...	...	·70	·70	6·96	6·06	5·60	6·21	2·11	0·81	...	...
8	8	Tumpuna—Police Station ...	14·09	1·33	1·38	2·12	2·90	6·61	3·76	3·64	2·14	1·94	5·35	5·28	50·37
28	5	Erin—La Ressource Estate ...	...	1·97	2·32	3·25	3·12	9·23	5·96	5·63	5·31	5·20	...	...	...
46	8	Erin—Chatham ...	4·47	2·53	5·24	6·41	4·09	12·50	12·01	7·41	9·62	5·08	18·58	18·08	106·02
29	8	Moruga—Police Station ...	8·54	·97	1·37	·85	2·12	5·70	4·14	2·83	1·94	1·47	5·70	4·05	39·68
30	8	Moruga Road—Rest House ...	11·62	4·61	7·14	5·44	7·90	19·65	10·30	7·40	7·73	8·29	15·33	14·86	120·27
33	...	St. Juan—Barataria Estate ...	10·01	·58	2·91	2·52	2·99	13·95	7·30	12·48	4·75	3·66	12·30	8·62	82·07
34	...	Naparima—Harmony Hall Est. (H.H.)	...	...	...	...	5·74	...	7·08	...	...	...	...	...	...
35	...	Naparima—Taronba Estate (T.B.) ...	...	...	...	·56	5·74	23·87	16·86	4·70	2·82	2·73	11·00	...	...
36	5	Naparima—Williamsville Est. (W.V.) ...	...	·91	1·90	2·15	7·62	11·05	8·86	9·06	7·72	1·99	10·61	...	...
38	...	Naparima—Union Hall Estate (N.) ...	9·43	·39	3·35	1·41	6·62	7·87	9·07	7·15	4·53	2·49	6·45	...	...
39	...	Naparima—Petit Morne Estate (P.M.)	8·79	·48	2·15	1·03	5·65	12·91	8·54	6·71	7·52	2·50	13·77	7·40	77·45
40	8	Naparima—Golconda Estate (G.C.) ...	8·09	·73	2·45	1·33	6·05	11·91	9·26	6·61	5·76	2·60	11·75	9·08	75·62
41	5	Naparima—Cedar Hill Estate (C.H.) ...	10·90	·65	2·36	1·30	8·54	11·25	9·56	6·35	7·45	1·68	16·15	9·76	85·95
42	...	Naparima—St. Madeleine Usine (U.S.M.)	9·60	·36	2·91	·68	7·69	13·86	8·84	6·28	7·56	2·32	14·63	10·78	85·41
59	...	Naparima—Plein Palais (P.P.) ...	8·03	·63	1·75	2·95	5·13	8·14	8·30	4·15	2·10	4·40	22·14	8·40	76·12
45	8	Naparima—Wellington Estate ...	9·00	1·29	1·96	1·22	2·63	10·69	7·49	5·35	6·47	1·83	11·62	8·05	67·50
56	5	Naparima—Craignish Estate ...	6·83	·75	2·05	...	9·17	12·76	8·30	7·10	8·56	1·93	14·08	...	...
47	8	San Fernando—Lewisville ...	8·73	·99	1·66	1·74	4·69	9·44	10·53	5·97	3·82	4·04	11·53	8·72	71·86
51	8	Maraval—Police Station ...	8·26	1·10	3·17	4·97	2·52	8·68	10·00	7·21	6·78	8·50	11·76	8·27	81·21
53	8	Diego Martin—Police Station ...	7·54	1·52	2·36	2·84	4·26	8·71	9·54	9·64	4·33	6·96	14·54	7·41	79·65
54	8	Maracas Bay ...	11·03	2·32	5·48	6·22	6·76	11·86	15·64	11·64	6·91	9·47	17·64	7·59	112·56
55	8	Maracas—Government School ...	9·78	·36	3·70	2·47	3·38	10·19	7·49	6·62	4·90	5·75	11·77	8·65	75·06
57	8	Blanchisseuse ...	17·17	3·18	6·04	4·08	7·50	16·23	8·15	5·50	5·38	1·76	12·69	14·78	102·46
58	8	Cap-de-Ville ...	4·03	·93	5·88	4·21	7·10	9·58	8·70	9·62	6·94	7·51	12·83	11·12	88·45
62	8	Valencia ...	...	...	...	...	...	...	...,	...	...	...	...	...	...
63	8	La Brea ...	4·80	1·45	1·94	2·47	6·44	7·41	8·83	7·77	3·97	5·10	11·54	7·61	69·33
43	8	Hicacos—Constance Estate ...	3·90	·97	4·54	2·88	2·28	11·87	14·08	8·84	4·83	4·96	11·54	...	...
65	8	Carapichaima—Waterloo ...	8·03	·61	2·36	2·83	7·63	11·06	6·93	6·12	3·62	1·61	6·72	7·27	64·82
66	...	Hybernia Estate ...	15·03	1··5	2·52	·65	9·35	14·45	10·35	6·62	5·85	2·72	10·03	10·30	89·12
68	8	Manzanilla—Police Station ...	14·33	2·36	2·56	3·82	7·38	15·53	9·73	10·49	8·96	5·70	23·48	16·00	120·34
3	8	Santa Cruz—Police Station ...	6·99	1·76	3·58	4·26	8·09	8·74	7·61	8·03	4·16	7·79	13·13	9·18	83·32
69	5	Brechin Castle Estate—Couva ...	8·76	·90	3·32	2·36	7·39	10·59	8·15	8·22	5·52	1·96	9·86	8·84	75·87

APPENDIX VI.—Continued.

RAINFALL FOR THE ISLAND OF TRINIDAD FOR THE YEAR ENDING 31ST DECEMBER, 1896.

No. of Station	Diameter of Gauge, Govt. or Private.	STATIONS.	January.	Feby.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
	In.														
70	5	Rivulet Estate—Couva ...	·78	1·19	1·34	1·73	9·48	12·84	8·38	3·82	6·06	5·33	9·67	7·95	68·57
71	5	St. Helena Estate ...	3·24	1·06	1·45	·18	1·72	4·22	9·45	16·02	5·08	6·05	10·06	7·91	66·44
74	5	La Plaisance Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
76	5	Caroni—Curepe Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
77	5	Caroni—McLeod Plain Estate ...	...	...	...	...	...	...	...	...	...	...	...	...	...
78	5	Caroni—Frederick Estate ...	9·86	1·37	3·52	3·40	9·49	15·44	9·74	8·75	7·10	2·93	9·77	10·06	91·43
79	5	Orange Grove Estate—Tacarigua ...	10·71	·76	2·02	3·08	6·90	16·57	9·73	11·39	14·71	2·76	11·36	10·55	100·54
31	...	St. Stephen's Rectory—Princes Town...	10·24	·82	2·23	2·24	7·89	11·47	8·56	6·22	8·41	2·62	10·62	8·55	79·87
80	8	Siparia—Rest House ...	7·67	2·60	4·75	4·08	7·31	12·81	9·90	12·85	8·30	8·77	20.78	11·03	110·85
81	8	St. John's—Cedros ...	...	...	...	...	...	10·22	6·42	...	5·24	4·48	...	...	...
82	5	Tacarigua—El Dorado Estate ...	6·25	·70	1·99	3·00	6·54	16·15	9·64	11·03	14·29	2·76	11·36	10·08	93·79
83	8	Carenage—Police Station ...	8·97	2·29	1·52	2·39	4·31	9·80	8·46	6·89	3·09	5·27	14·62	8·32	75·93
84	8	Guapo—Adventure Estate ...	3·75	1·17	2·74	3·48	5·13	9·07	10·34	11·17	6·48	6·50	16·04	8·47	84·34
85	8	Fairfield Estate—Princes Town ...	...	...	...	...	...	...	...	...	...	...	...	...	...
86	8	Lothians—Princes Town ...	12·02	·51	2·67	1·29	8·02	11·54	7·44	5·80	5·60	1·91	12·98	8·85	78·63
24	8	Maraval Reservoir ...	7·40	1·65	2·58	5·41	1·68	10·59	6·97	8·32	5·64	8·97	10·76	7·19	77·16
67	8	St. Ann's Reservoir ...	6·97	·73	2·50	3·20	1·73	8·52	5·95	6·04	3·54	5·64	7·82	5·68	58·32
87	5	Oropuche—Nelson Estate ...	5·14	...	...	...	...	...	...	...	...	...	...	...	...
88	8	Cedros—Perseverance Estate ..	2·96	1·43	3·87	4·16	2·48	9·77	6·53	6·75	8·82	4·36	7·55	10·29	68·97
89	8	Savonetta—Esperanza Estate ...	8·03	·61	2·84	·87	7·82	9·81	7·33	5·99	4·62	2·93	10·59	7·08	68·52
90	8	La Gloria Estate—Gran Couva ...	15·40	2·07	2·41	1·22	10·24	...	11·65	8·19	6·59	2·99	9·45	...	...
91	8	Dabadie ...	11·35	1·75	2·27	3·43	5·16	16·12	8·60	9·89	13·16	8·08	12·88	11·15	103·79
92	...	Cunupia—Mon Plaisir Estate ...	...	...	3·56	...	7·14	17·05	9·04	9·06	6·97	2·57	...	...	...
93	...	Arouca—Laurel Hill Estate ...	13·19	·71	2·85	4·02	6·63	13·34	8·76	11·01	7·18	5·62	10·96	9·40	93·67
94	...	Naparima—Philippine Estate ...	8·70	·74	4·11	2·52	4·87	8·31	7·78	5·41	7·56	2·36	10·05	8·40	70·81
95	...	Naparima—Corinth Estate ...	8·64	·60	2·07	·50	4·83	9·13	7·55	5·56	4·85	2·08	10·18	7·78	63·77
96	8	San Juan—Aranjuez Estate ..	7·59	·61	2·99	2·87	4·28	10·69	6·50	10·44	4·11	5·13	9·72	7·92	72·85
97	8	Woodbrook ...	6·37	·94	1·14	2·29	1·15	8·24	4·19	10·39	2·65	5·65	9·93	7·18	60·12
98	...	Fort George Signal Station ...	8·43	1·48	2·39	2·39	2·14	9·41	8·69	8·53	4·77	5·21	13·61	7·21	74·26
99	...	North Post „ „ ...	7·56	2·07	2·01	3·25	4·84	6·44	8·18	9·74	4·19	5·82	12·07	7·98	74·15
100	8	Perseverance Estate—Couva ...	9·90	·62	2·71	1·75	6·25	8·26	6·66	6·66	4·05	1·38	9·33	7·32	64·89
101	8	Camden Estate—Couva ...	9·07	·74	1·76	·87	6·34	8·63	6·17	6·24	3·79	4·17	8·30	8·29	64·37
102	...	La Juanita—Matura ...	...	...	...	...	...	19·60	...	11·45	11·18	4·56	23·79	...	...
103	8	St. Augustine—Tunapuna ...	7·69	·59	·63	2·03	3·95	11·50	7·36	10·83	6·53	4·39	8·21	6·13	69·84
104	8	Ben Lomond Estate—S. Naparima ..	8·50	·38	1·28	·82	5·83	8·39	4·57	6·69	5·32	1·90	11·04	8·19	62·91
105	...	Woodford Lodge Estate ...	9·25	1·06	2·57	2·71	7·36	13·13	...	7·04	4·76	2·92	...	...	...
106	...	Palmiste Usine ...	8·97	·52	2·03	1·88	5·92	7·64	7·79	6·92	4·19	3·14	9·93	8·29	67·22
107	5	Carreras Island ...	5·18	·63	·60	1·83	1·09	6·75	5·44	6·74	2·42	1·77	7·51	4·40	44·36
108	...	Bronte Estate ..	8·62	·42	2·05	1·39	9·22	12·42	6·79	5·42	5·60	2·48	11·47	8·28	74·16
109	...	Arima ...	13·66	1·44	2·50	3·64	8·07	18·06	9·83	10·56	11·15	6·45	11·84	13·22	110·42
		TOTALS ...	788·47	107·09	247·26	245·19	530·32	1054·75	770·16	747·79	573·78	396·48	1073·59	764·15	6440·37
		Monthly Average, and Mean for year all Stations	8·95	1·18	2·71	2·69	5·82	11·71	8·48	8·04	6·10	4·21	11·92	9·55	81·52

Mean Rainfall for year at 79 Stations ... . 81·52 inches.

MONSTERA DELICIOSA, LIEBM.

THE ILLUSTRATIONS.

No. 1. Illustration of Seedling Canes. The canes shown are Demerara seedlings No. 115 and 116.—*To face page 17.*

No. 2. Shows the New African Coffee. "Coffea stenophylla."—*To face page 14.*

No. 3. Shows a plant of "Monstera deliciosa" growing on the lawn, near Governor's Residence.—*Frontispiece.*