SB
229
.B35
R47
1901/1903

CONTENTS.

	Page.
Letter of Transmittal	1
Letter of Commissioner of Agriculture	2
Staff	3
PART I.	
Composition of Barbados Rainfall Table i.	3
PART II.	
Manurial and Other Experiments with Sugar Cane	4
Composition of Chemical Manures, Table ii.	4
Rainfall at Manurial Experiment Stations, Table iii.	5
List of Manurial Experiment Stations, Table iv.	5
Weather	6
Dodds	6–8
Tables v.—vii.	20–22
Foursquare Plantation	8–11
Mean Tables, viii.—xviii.	23–33
Hopewell Plantation.	
Fletcher Field, Plant Canes	11–13
Tables xix.—xxv.	34–40
Ashford Field, 1st Ratoons	13–16
Mean Tables xxvi.—xxix.	41–44
Hopper Field, 2nd Ratoons	16–18
Mean Tables xxx.—xl.	45–55
One Acre Plots...	18–19
Tables xli.—l.	56–65
Tillage Experiments	19
Table li.	66
PART III.	
Experiments with Seedlings and other Varieties of Canes ...	67
Field Characters, with Agricultural and Chemical Results	67–72
Selected varieties arranged in order of yield	73
Selected varieties arranged in order of Freedom from Rotten Canes ...	74
General Conclusions	74
New Seedlings	74
Table lxxxi.	112–115
Large Estate Plots	74
Tables lxxxii. and lxxxiii.	116–118
Rainfall at variety Experiment Stations, Table lii.	75
List of variety Experiment Stations, Table liii.	76
Estate Samples of Juice, Table lxxxiv.	119–120
Explanation of terms used...	121

LIBRARY
N.O.A.A.
U S Dept of Commerce

National Oceanic and Atmospheric Administration

Climate Database Modernization Program

ERRATA NOTICE

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages
Faded or light ink
Binding intrudes into the text

This document has been imaged through the NOAA Climate Database Modernization Program. To view the original document, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or www.reference@nodc.noaa.gov.

LASON
Imaging Subcontractor
12200 Kiln Court
Beltsville, MD 20704-1387
March 28, 2002

LETTER OF TRANSMITTAL

No. 509.

SIR DANIEL MORRIS, K.C.M.G.,
Imperial Commissioner of Agriculture.

Government Laboratory
Barbados, October 19th. 1903.

SIR,

We have the honour to forward a report attached hereto, upon the Agricultural work for the seasons between 1901 and 1903, carried on in Barbados under the direction of the Imperial Department of Agriculture.

2. We also attach a duplicate copy of the report which we request that you will be so good as to forward to His Excellency the Governor of Barbados.

3. The Experiments were carried on at Dodds Botanic Station and at fifteen plantations, named in the report, situated in different typical localities of the island. We desire to record our thanks to the Proprietors, Attorneys and Managers of those plantations for their courtesy in allowing the use of their plantations and for their co-operation in the experiments.

4. The work has involved the growth, reaping and analysis of about 1,200 plots of canes as well as the analysis of about 200 samples of estate juice and about 800 single canes in the chemical selection experiments.

5. In accordance with your suggestion, in certain cases the *mean* results have alone been published. It has thus been possible to omit some eighty tables and to greatly reduce the bulk of the report.

6. In carrying out this work, besides the gentlemen named in the body of the report who are members of the staff attached to the Department of Agriculture, material and valuable aid has been received from Mr. Radclyffe Hall, B.A., Assistant Professor of Chemistry, Mr. E. Gillman, F.C.S., Chief Laboratory Assistant, and Mr. A. H. Worm, Assistant to the Superintendent of the Botanic Station.

We have the honour to be,
Sir,
Your most obedient servants,

J. P. D'ALBUQUERQUE,
Island Professor of Chemistry
and Agricultural Science, and
Chemist-in-charge of
Sugar Cane Experiments.

JOHN R. BOVELL,
Superintendent Botanic Station,
and Agricultural Superintendent
Sugar Cane Experiments.

The Commissioner of Agriculture for the West Indies—to the Colonial Secretary, Barbados.

B. 3911.

Barbados.
19th October, 1903.

SIR,

I have the honour to forward a report by Messrs. d'Albuquerque and Bovell on the Agricultural work for the season 1901–1903 carried on in Barbados under the direction of the Imperial Department of Agriculture for the West Indies.

2. It is a matter for regret that the unfavourable weather during the early part of 1902 should, to some extent, have reduced the value of the results of the experiments. From a careful study of these results and a comparison with previous reports it will however, be seen that the results of previous years are confirmed.

3. The results so far attained are stated in so clear and graphic a manner in the Report that there should be no difficulty in selecting a few of the more promising canes and treating them under varying climatic and other conditions with the standard varieties already planted in the island

4. It is due to Messrs. d'Albuquerque and Bovell to state that they have devoted themselves with great energy and success to the work entrusted to them; and I am glad to recognize that the planters in the island have rendered valuable assistance by devoting considerable areas on their plantation to the experiments and by supervising and providing all the expenses of cultivation.

5. I anticipate that as these experiments are steadily continued on the present lines from year to year the results cannot fail to be of permanent service to the sugar industry of this island.

6. I suggest that when the report is printed a copy of this letter be attached to it and forwarded for the information of the Secretary of State.

I have the honour to be,
Sir,
Your most obedient servant,

D. MORRIS,
Commissioner of Agriculture
for the West Indies.

REPORT ON AGRICULTURAL EXPERIMENTS.

Conducted in Barbados in the season 1901 to 1903 under the direction of the Imperial Department of Agriculture for the West Indies.

Chemist-in-charge.....Professor J. P. D'ALBUQUERQUE M.A. F.I.C., F.C.S.S. London and Berlin.
Laboratory Assistant.....D. E. SEALE.
Pupil Assistant.....S. D. BASCOM.
Agricultural Superintendent...J. R. BOVELL., F.L.S.,F.C.S.
Assistant.....C. E. STOUTE.
Junior Assistant.....W. E. INNISS.

The experiments are described in three parts namely :—
Part I.—Composition of Barbados rainfall.
Part II.—Manurial and other Experiments with Sugar cane.
Part III.—Experiments with cane varieties.

PART I.

COMPOSITION OF BARBADOS RAINFALL.

The rainfall at Dodds was measured in the usual manner and fortnightly samples were analysed at the Government Laboratory. The amount and composition of the rainfall from December 1901 to May 1903 are given in Table I.

TABLE I.

Amount and Composition of the Rainfall at Dodds Botanic Station.

	Fall inches.	Parts per million of			
		Chlorine.	Nitrogen as Ammonia.	Nitrogen as Nitrates.	Nitrogen Total.
December 1901 ...	8·33	13·50	·051	·812	·863
January 1902 ...	1·95	18·75	·060	·118	·178
February ,, ...	·83	34·00	·154	1·140	1·294
March ,, ...	1·41	17·50	·130	·680	·810
April ,, ...	·66	38·50	·105	1·529	1·634
May ,, ...	4·22	11·00	·071	·469	·540
June ,, ...	6·14	12·00	·019	·372	·391
July ,, ...	6·49	...	...	...	...
August ,, ...	5·43	14·00	·072	1·225	1·297
September ,, ...	4·15	12·80	·070	1·018	1·088
October ,, ...	3·77	...	...	...	...
November ,, ...	5·91	10·00	·009	·824	·853
December ,, ...	8·00	9·00	None.	1·318	1·318
January 1903 ...	1·58	18·50	·049	1·067	1·116
February ,, ...	1·36	23·00	·089	1·800	1·887
March ,, ...	4·32	9·50	·100	·419	·519
April ,, ...	5·91	9·75	·184	·159	·343
May ,, ...	2·02	15·00	None.	·988	·988

PART II.

MANURIAL AND OTHER EXPERIMENTS WITH SUGAR CANE.

Manurial experiments were carried on at Dodds Botanic Station, St. Philip; Foursquare Plantation, St. Philip; Hopewell Plantation, St. Thomas; Ruby Plantation, St. Philip; Hampton Plantation, St. Philip; Bushy Park Plantation, St. Philip; and Blowers Plantation, St. Thomas.

At the four last mentioned plantations the approximate area of each plot was one acre, the whole of the canes were weighed and crushed in the estate mill, the juice was measured and an average sample analysed.

The procedure at the three first mentioned plantations, where the experiment plots (with the exception of one field, Fletcher field, Hopewell) were of the same sizes as in the previous year's experiment, was as follows:—

In every case the canes and tops were weighed and the number of canes, sound and rotten, recorded. A sample of 100 pounds was then taken by the method described in our report for 1900 and the canes crushed in the Laboratory three roller mill driven by an 8½ H. P. Oil engine. The juice and megass were weighed and the juice analysed, and from these weights and the analytical results were calculated the quantities per acre.

To eliminate the irregularities occurring in cutting off the cane tops in the manurial experiments, we have calculated the increase of yield by the application of different manures in tons of untopped canes, termed is this report *produce*.

Wherever in this report *quantities* of produce, canes or sugar, or of manures applied, are mentioned, *per acre* is understood unless stated to the contrary.

The nitrogenous manures employed for the experiments were sulphate of ammonia, nitrate of soda, or a mixture (called for the sake of brevity "nitrogen" in the report) in which two-thirds of the nitrogen was derived from sulphate of ammonia and one-third from nitrate of soda. The requisite proportion is obtained by mixing 314 pounds of sulphate of ammonia with 177 pounds of nitrate of soda.

The phosphoric acid was applied either in the form of basic slag or of superphosphate: when in the form of basic slag it was applied in January and about a fortnight before any nitrogenous manure containing sulphate of ammonia.

The phosphoric acid in whatever compound applied has been calculated to tricalcic phosphate and expressed as "phosphate": this meets the requirements of the "Fertilizers and Feeding Stuffs Act 1894" which enacts that on the sale of any manure a guarantee shall be given stating the percentage of soluble and insoluble phosphate: moreover the term phosphate is the one generally understood in Barbados.

From a given quantity of phosphate to calculate the equivalent quantity of phosphoric acid it is simply necessary to multiply by ·458.

The composition of the manures employed is given in Table II.

TABLE II.

Composition per cent. of the Chemical manures employed in the manurial experiments 1901-1903.

	Nitrogen.	Phosphates.			Potash.
		Soluble.	Reverted.	Insoluble.	
Sulphate of Ammonia (1) ...	20·62				
Sulphate of Ammonia (2) ...	20·34				
Sulphate of Ammonia (3) ...	20·84				
Nitrate of Soda (1) ...	16 06				
Nitrate of Soda (2) ...	15·87				
Dried Blood	12·04				
Superphosphate of Lime (1)...	...	431·6	5·05	—	
Superphosphate of Lime (2)...	...	32·27	13·27	·56	
Basic slag	...	...	...	34·63	
Sulphate of Potash ...	...	...	...	...	49 08

The rainfall, height above sea level and some other particulars in regard to the manurial experiment stations are given in Tables III. and IV.

TABLE III.

Rainfall at the Manurial Experiment Stations from December 1901 to May 1903.

Months.	Dodds.		Blowers.		Bushy Park.		Four-square.		Hampton		Hopewell		Ruby.	
	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
December 1901 ...	18	8·33	24	8·76	18	7·63	19	6·05	17	6·11	24	10·17	12	6·02
January 1902 ...	16	1·95	15	2·54	11	1·57	7	·86	13	1·18	21	2·63	6	·49
February ,, ...	5	·83	3	·88	2	·60	4	·85	6	·74	10	1·51	5	·51
March ,, ...	6	1·41	7	1·37	7	·81	7	·60	7	·74	16	2·05	4	·78
April ,, ...	7	·66	7	·74	5	·38	6	·51	5	·92	11	1·46	2	·32
May ,, ...	10	4·24	7	5·10	10	5·14	13	7·12	13	6·47	10	5·73	9	·55
June ,, ...	16	6·14	15	7·63	18	5·70	26	6·36	19	6·77	22	7·83	19	6·69
July ,, ...	18	6·49	20	8·28	18	5·95	17	4·90	18	5·81	25	8·68	14	5·18
August ,, ...	14	5·43	15	7·72	11	4·72	14	5·26	14	5·77	21	8·05	13	4·31
September ,, ...	18	4·15	18	5·59	17	4·13	17	3·47	15	2·87	20	5·92	15	3·57
October ,, ...	13	3·77	11	3·31	15	3·31	11	3·59	17	3·81	13	3·86	12	3·20
November ,, ...	14	5·91	16	6·19	14	5·33	17	5·92	15	5·06	21	7·62	11	4·68
December ,, ...	18	8·00	15	8·70	18	7·87	17	6·15	19	7·58	24	8·66	20	8·67
January 1903 ...	15	1·58	17	4·33	13	1·91	16	2·19	12	2·24	20	4·56	12	1·57
February ,, ...	9	1·36	12	1·62	9	1·03	8	1·12	10	1·79	14	1·95	8	·79
March ,, ...	11	4·32	12	6·42	10	4·04	10	3·19	11	4·87	17	7·54	10	4·20
April ,, ...	16	5·91	8	2·45	12	3·94	7	1·25	13	3·78	13	2·42	12	2·88
May ,, ...	6	2·02	4	2·25	6	1·46	4	2·50	6	3·93	9	2·90	5	1·55
	230	73·50	226	83·88	214	65·52	220	61·89	230	70·44	311	93·74	189	60·89

TABLE IV.

Manurial Experiment Stations, 1901—1903.

Name of Estate.	Name of Field.	Height above sea level. Feet.	Rainfall from December 1901, to May 1903 Inches.
Dodds	Summervale ...	210	73·50
Foursquare	Johnny King ...	100	61·89
Hopewell	Fletcher Ashford ... Hopper ...	534	93·74
Ruby	Garnes ... Upper Porch Door Upper Burnham Marshall Edgehill	...	60·89
Blowers	Mill Pond South Moonshine North Moonshine	...	83·88
Bushy Park	Burnt Ground Big Butter Water ...	161	65·52
Hampton	Bean ... Drink Water	103	70·44

WEATHER.

The rainfall in December 1901 being good, the cane plants germinated fairly regularly, but as the January, February, March and April following were dry, the young canes made little progress, and in the dry districts, to such an extent was the dry weather felt that some of the young canes died.

In May the rainy season set in and favourable weather was experienced from then on to the end of August when the canes had to a great extent recovered from the effects of the drought of the first four months of 1902. Unfortunately however, with September another drought set in which lasted until the end of November. The average rainfall for these three months, which are usually the wettest of the year and during which the canes grow most, was very much below the average. The effects of these two droughts, together with the root disease Marasmius Sacchari, have we regret to say greatly reduced the value of many of the cane experiments for this season (1901-1903).

DODDS.

Dodds Botanic Station is situated in the parish of St. Philip, ten miles from Bridgetown, at an elevation of 210 feet above the sea level.

The manurial experiments were carried out in Summervale field and comprised 26 plots of one-twentieth of an acre each: the lining of the field was 6 feet square, therefore each plot consisted of 60 stools of canes and the experiments covered an area of $1\frac{1}{4}$ acres.

The chemical analysis of the soil, which is what, in Barbados, is called a black soil, is reproduced below from the report for in 1886.

MECHANICAL ANALYSIS.

	per cent.
Stones removed before analysis	1·40
Air-Dried Soil.	
Coarse gravel	·52
Fine Gravel	·95
Coarse sand	5·80
Fine Sand	3·78
Clay and fine soil	78·11
Moisture	10·84
	100·00

Distribution of the organic matter and combined water.

Organic matter in fine gravel	·007
,, ,, ,, coarse sand	·364
,, ,, ,, fine sand	·317
,, ,, ,, clay and fine soil	1·033
Combined water in clay and fine soil	9·662
	11·383

CHEMICAL ANALYSIS.

Air-dried Soil—Stones removed.

Moisture		10·849
Combined water		9·662
a. Organic matter		1·721
Soluble silica		1·360
Phosphoric anhydride		·079
Sulphuric anhydride		trace
Carbonic anhydride...		·319
b. Nitric anhydride		·007
Chlorine		·022
Alumina		6·369
Ferrous oxide (protoxide of iron)		·278
Ferric Oxide (peroxide of iron)...		5·393
Manganous oxide		·771
Calcium oxide		2·548
Magnesia		·955
Potash		·106
Soda		·716
Insoluble Sand and Clay 58·612	Crystalised silica (quarts sand)	7·033
	Combined silica	38·163
	Alumina	10·671
	Ferric oxide	2·775
		99·797
a. Containing nitrogen		·106
b. Containing nitrogen		·0018

This soil contains a comparatively moderate proportion of carbonate of lime and is poor in nitrogen, phosphoric acid, and potash in which respect it is distinctly below the average of Barbados soils.

After the canes were reaped in 1901 Woolly Pyrol (Phaseolus Mungo) was grown upon the field, and turned under as a green dressing, on the top of which before it was covered was placed a basket of pen manure at the rate of about 30 tons of manure per acre. After the field had been thoroughly tilled and was in good agricultural condition, the canes were planted in December 1901. The Barbados Seedling 147 was the variety grown on this field and the canes were reaped during the first week of March 1903.

The following are the results of the analysis of a sample of the farmyard manure applied at this Station :—

	Per cent.	30 tons contain in lb.
Moisture	49·81	
* Organic matter	23·53	15,812
Insoluble siliceous matter	10·20	6,854
‡ Phosphoric anhydride	·27	181
Potassium oxide...	·30	202
Undetermined substances	15·89	
	100·00	
* Containing nitrogen	·44	296
‡ Equal to tricalcium phosphate	·59	396

EXPERIMENTS WITH NITROGEN. GROUP I.

This series consisted of eleven plots, each of which received minerals in January consisting of an application of superphosphate of lime at the rate of 80 pounds of phosphate of lime per acre and sulphate of potash at the rate of 60 pounds potash per acre. To one plot no nitrogen was added; three received in addition sulphate of ammonia at the respective rates of 40, 60, and 80 pounds of nitrogen per acre applied in June; two plots received sulphate of ammonia at the respective rates of 40 and 60 pounds of nitrogen per acre, 15 pounds in each case being applied in January and the respective balances of 25 and 45 pounds being applied in June; one plot received nitrate of soda at the rate of 60 pounds of nitrogen applied in June; two plots received dried blood respectively at the rates of 40 and 60 pounds of nitrogen per acre applied in January; and two others respectively received the same amounts of dried blood, in which form in each case 15 pounds per acre of nitrogen were applied in January, and in one case 25 pounds and in the other 45 pounds of nitrogen per acre were applied in June.

EXPERIMENTS WITH PHOSPHORIC ACID. GROUP II.

This series consisted of eight plots, each of which received sulphate of ammonia at the rate of 15 pounds per acre of nitrogen applied in January and 45 pounds applied in June, and sulphate of potash at the rate of 60 pounds of potash per acre applied in January. Of these plots one received no phosphate; two others received phosphate in the form of superphosphate of lime, half in January and half in July, at the respective rates of 80 and 120 pounds of "available" tricalcium phosphate; three plots received superphosphate of lime, all in January, at the respective rates of 40, 80 and 120 pounds of "available" tricalcium phosphate; while two plots received basic slag phosphate applied in January at the respective rates of 80 and 100 pounds of phosphate of lime per acre.

EXPERIMENTS WITH POTASH. GROUP III.

This series consisted of seven plots, each of which received sulphate of ammonia at the rate of 15 pounds of nitrogen applied in January and 45 pounds of nitrogen applied in June and superphosphate of lime at the rate of 80 pounds of tricalcic phosphate applied in January. One plot received no potash; two plots respectively received 60 and 80 pounds of potash, half in January and half in June; and four plots respectively received 40, 60, 80, and 100 pounds potash in January.

The results are recorded in Tables v.—vii.

In looking at the results it should be borne in mind that each plot in this field has received a similar application of manure during the growth of five successive crops, namely those reaped in 1895, 1897, 1899, 1901 and 1903.

The plot that received no artificial manure shows a low yield, only 20·53 tons of produce, while in the most favourable of the manured plots the yield rises to 33 to 35 tons of produce.

The plot that received an extra application of 20 tons of farmyard manure gave 33 tons of produce. It would therefore appear again this year that such large application (in all 50 tons) of farmyard manure without chemical manures would be efficient in maintaining the yield.

The results are conflicting—thus all the plots that, in addition to farmyard manure and minerals, received sulphate of ammonia show, with one exception, either no effect or a diminution as compared with the plot that received farmyard manure minerals and no extra nitrogen.

One plot that received 40 lb. nitrogen as sulphate of ammonia gave an increase of 8½ tons produce; the plot that received 60lb. nitrogen as nitrate of soda gave an increase of 7 tons produce; the plots that received nitrogen in the less active form of dried blood all show an increase of yield from 2½ to 10 tons of produce; and the best result in the whole field was given by the plot that received farmyard manure, 40lb. nitrogen as dried blood, 80lb. phosphate as superphosphate and 60lb. potash as sulphate in January: this plot gave 34·7 tons produce, being an increase of 10 tons over the no nitrogen plot.

The results of the phosphate plots in all cases except one indicate a diminution of yield by the application of superphosphate, and the exception occurs with the plot that received the highest application of superphosphate which shows practically neither increase nor decrease of yield. The plots that received basic slag gave an increase of 2·9 tons of produce, the higher result following the application of 80lb. of phosphate as basic slag.

The results of the potash plots indicate increased yields by the application of potash. This increase varies from 2—5½ tons of produce, the highest result being obtained on the plot that received 60lb. potash as sulphate, half in January and half in June.

In all the above remarks plot A 5, the results of which disagree with all the rest, is left out of consideration.

FOURSQUARE PLANTATION.

Foursquare plantation is situated in the parish of St. Philip at an elevation of 100 feet above the sea level.

The manurial experiments were carried out on an exceedingly level field known as Johnny King field which was laid out in 247 plots each 6 holes by 7 holes: the lining was 6 feet square, and the total area under experiment was about eight and a half acres.

Each plot being in immediate juxtaposition to its neighbours all round, in reaping the plots the outside ring of cane holes of each plot were left standing and only the inner portion of the plot 4 holes by 5 holes reaped and weighed for the experimental calculations. Since the outer ring was manured in the same manner as the rest of the plot to which it belonged, it served to protect the inner holes from the influence of the roots of adjoining plots and at the same time to eliminate the effect of leaving a space of fallow land between each plot, a circumstance usual in experimental plots, but unusual in the actual conditions of agricultural cultivation.

This was the same field as that employed for the experiments reported on in 1901 and the following are the results of the mechanical and chemical analyses of the soil of this field made on samples taken in 1899 and reproduced from the 1901 report.

MECHANICAL ANALYSIS.

Results calculated to soil dried at 100° C.

		Diameter of Particles.			Per cent. Soil. (1st 9 inches.)	Per cent. Sub-soil. (2nd 9 inches.)
	Gravel ...	3	millimetres to	1 mm.	1·5	1·2
	Coarse sand ...	1	,, to	0·5 ,,	2·0	2·0
Fine Soil	Medium sand ...	0·5	,, to	0·25 ,,	3·3	2·6
	Fine sand ...	0·25	,, to	0·05 ,,	6·8	6·1
	Silt	0·05	,, to	0·01 ,,	21·6	20·7
	Fine silt	0·01	,, to	0·002 ,,	28·1	36·0
	Clay	0·002	,, to	—— ,,	36·7	31·4
					100·0	100·0
	Fine soil ...	0·5	,, to	—— ,,	96·5	96·8

CHEMICAL ANALYSIS OF FINE SOIL.

Results calculated to soil dried at 100° C.

	Per cent.		Approx. lb per acre.	
	Soil. (1st 9 inches.)	Sub-soil. (2nd 9 inches.)	Soil. (1st 9 inches.)	Sub-soil. (2nd 9 inches.)
Insoluble siliceous matter	53·000	52·655	1,590,000	1,579,650
Soluble silica	·050	·035	1,500	1,050
† Potassium oxide	·232	·246	6,960	7,380
Sodium oxide	·318	·382	9,540	11,460
Calcium oxide	2·625	2·400	79,050	72,000
Magnesia	·801	·810	24,030	24,300
Manganese oxide	·465	·256	13,950	7,680
Iron oxide and alumina	28·718	29·416	861,540	882,480
‡ Phosphoric anhydride	·257	·154	7,710	4,620
Sulphuric anhydride	·086	·154	2,580	4,620
†† Carbonic anhydride	·650	·605	19,500	18,150
* Combined water and organic matter...	12·510	12·740	375,300	382,200
	99·712	99·853	2,991,360	2,995,590
* Containing nitrogen	·171	·150	5,130	4,500
* Containing humus	2·437	2·289	73,110	68,670
† Containing potassium oxide soluble in 1 per cent. citric acid	·011	·012	330	360
‡ Containing phosphoric anhydride soluble in 1 per cent. citric acid ...	·036	·028	1,080	840
†† Equal to carbonate of lime	1·477	1·375	44,310	41,250

The soil is a rather stiff clay, with a rather stiff clay sub-soil. The soil contains :—

	Per cent.	Pounds per acre.
Soluble in hydrochloric acid :—		
Potassium oxide	·232	6,960
Phosphoric anhydride	·257	7,710
Nitrogen	·171	5,130
Carbonate of lime	1·477	44,310
Soluble in 1 per cent. citric acid solution (available) :—		
Potassium oxide	·011	330
Phosphoric anhydride	·036	1,080

The sub-soil is similar in composition to the soil but contains much less phosphoric anhydride soluble in hydrochloric acid.

From the analysis it is apparent that the soil contains an abundance of available phosphoric anhydride, and it would seem probable that potash and nitrogen are the manurial constituents chiefly necessary to increase the cane crop.

After the plant canes (of the variety B. 147) were cut in 1901, Indian corn and Woolly pyrol were grown and fed off to the animals, the corn at the stage when it could be chaffed.

In November 1901, farmyard manure was applied applied at the rate of 27 tons to the acre.

In December 1901, cuttings (tops and pieces) of B. No. 147 were planted. These grew fairly well, requiring about 25 per cent. for the first supplying. After the second supplying which was with plant canes, owing to a severe and prolonged drought during which only two inches and eighty-two parts of rain fell from the beginning of January to the end of April, many of the growing canes died. The consequence was that the non-growing holes had to be supplied with pieces of stumps at the end of May when the rains came.

Farmyard manure at the rate of 27 tons per acre was applied to all the plots. The composition of the manure is given below.

	Per cent.	27 tons contain in lb.
Moisture	65·48	
* Organic matter	18·26	11,044
Insoluble siliceous matter	8·29	5,014
‡ Phosphoric anhydride	·33	200
Potassium oxide	·32	194
Undetermined substances	7·32	
	100·00	
* Containing nitrogen	·25	151
‡ Equal to tricalcium phosphate ...	·73	442

Twenty seven tons of this manure supplied per acre 151 pounds of nitrogen, 200 pounds of phosphoric anhydride (equal to 442 pounds of tricalcium phosphate) and 194 pounds of potash.

The experiments, as in those of 1899—1901, were divided into three series A. B. and C; each plot in A was repeated in B and C so that each plot occurred in triplicate.

Each series was divided into two sub-series, (i) plots that received no farmyard manure in 1899 but 27 tons in 1901, and (ii) plots that received 40 tons of farmyard manure in 1899 and 27 tons in 1901.

With some exceptions each of these series consisted of plots receiving the following applications :—

No manure.

Nitrogen Group
- Nitrogen only
- Minerals only
- Minerals and nitrogen
- Double minerals only
- Double minerals and nitrogen.

Phosphoric acid Group
- Nitrogen and potash only
- Nitrogen, potash, and phosphate as superphosphate
- Nitrogen, potash, and phosphate as basic slag.

Potash Group
- Nitrogen and phosphate as basic slag only
- Nitrogen, phosphate, and potash.

The canes were reaped between 20th and 27th March.

The mean results are given in Tables VIII—XVIII.

Mean results.

CONTROL PLOTS.

	Produce tons.
Twenty-one plots received farmyard manure but no chemical manure; the mean result was	21·62
Twenty plots received farmyard manure, and a chemical manure consisting of 60 lb. "nitrogen," 100 lb. phosphate as basic slag, and 50 lb. potash as sulphate; the mean result was ...	24·15
None of the above received any farmyard manure in 1899 when the previous crop of similar experiments was planted, but this appears to have had no influence on the yield, for three other plots that received farmyard manure in 1899 and 1901, as well as the above described chemical manure in 1902, gave a mean yield of	23·12

EXPERIMENTS WITH NITROGEN.

Farmyard manure in 1901, minerals and :—	
No nitrogen (3 plots)	25·14
Nitrogen 40—100lb., (42 plots)	24·10
Nitrogen 60lb. as sulphate of ammonia (3 plots)... ...	27·58
Farmyard manure in 1901, double minerals and :—	
No nitrogen (3 plots)	22·45
"Nitrogen" 60—100lb., (9 plots)	25·90
"Nitrogen" 100lb., (3 plots)	26·75
Farmyard manure only, in 1901 (21 plots)...	21·62
Farmyard manure in 1901 and :—	
"Nitrogen" 40lb., (3 plots)	21·07
"Nitrogen" 60 ,, (3 plots)	19·74
"Nitrogen" 80 ,, (3 plots)	26·24
"Nitrogen" 100 ,, (3 plots)	26·01
Mean (12 plots)	23·27

	Produce tons.
Farmyard manure in 1899 and 1901, minerals and :—	
No nitrogen (5 plots)	24·36
"Nitrogen" 40—100lb., (25 plots)	23·54
"Nitrogen" 60lb., of which 40lb. applied in June, (3 plots) ...	25·76
Farmyard manure in 1899 and 1901, no minerals :—	
"Nitrogen" 40—100lb., (12 plots)	22·47
"Nitrogen" 80lb., (3 plots)	25·54

EXPERIMENTS WITH PHOSPHATE.

Farmyard manure in 1901, nitrogen, potash and—	
No phosphate (3 plots)	23·15
Phosphate 25—100 lb. as superphosphate, (18 plots) ...	23·90
Phosphate 100 lb. as superphosphate, (3 plots)	26·06
Phosphate 50—200 lb. as basic slag, (12 plots)	22·35
Phosphate 150 lb. as basic slag (3 plots)	24·27
Slaked lime (6 plots)	25·93
Farmyard manure in 1899 and 1901, nitrogen, potash and—	
No phosphate (3 plots)	22·32
Phosphate 50—75 lb. as superphosphate (6 plots) ...	24·53
Phosphate 75 lb. as superphosphate (3 plots)	25·33
Phosphate 50—150 lb. as basic slag (6 plots)	23·79
Phosphate 150 lb. as basic slag (3 plots)	26·45
Slaked lime (6 plots)	27·10

EXPERIMENTS WITH POTASH.

Farmyard manure in 1901, nitrogen, phosphate and—	
No potash (3 plots)	18·87
Potash 25—75 lb. (9 plots)	21·49
Potash 25 lb. (3 plots)	23·59
Farmyard manure in 1899 and 1901, nitrogen, phosphate and—	
No potash (3 plots)	23·53
Potash 25—75 lb. (6 plots)	23·64
Potash 25 lb. (3 plots)	24·40

Briefly stated, the results of this year's experiments at Foursquare appear to be as follows :—

The rainfall was such as to render it unlikely that the canes could make advantageous use chemical fertilizers.

The yield on the average, as expected, was therefore low.

In the nitrogen series most of the plots showed no increase as the result of the application of nitrogen.

The plots that received minerals and 60 lb. nitrogen as sulphate of ammonia showed an increase yield of 2½ tons produce.

Double minerals in addition to nitrogen produced no adequate return for the extra outlay.

In the absence of minerals, nitrogen in small applications gave unfavourable results; in large applications (80—100 lb.) gave favourable results.

Phosphatic manures appeared to cause a small increase, and on the whole superphosphate appeared to be superior to basic slag.

The application of lime was followed by an increase of 3—4½ tons produce.

The application of 25 lb. potash as sulphate gave an increased yield.

HOPEWELL PLANTATION.

Hopewell plantation is situated in the parish of St. Thomas at an elevation of 534 feet above sea level.

This is a red soil estate and the land, as usual in red soil districts is generally hilly.

The manurial experiments were carried out in three fields. In Fletcher field plant canes were under experiment; in Ashford field 1st ratoons; and in Hopper field 2nd ratoons; and they are described in this order.

While the rainfall at this plantation was more favourable to manurial experiments, the amount of root fungus undoubtedly exercised an influence, difficult to estimate, on the result of the year's work.

FLETCHER FIELD. (Plant canes).

The manurial experiments were confined to the more level portions of the field: they comprised 27 plots each of 252 holes; the lining was 6 feet by 4 feet; and the area under experiment was about 3½ acres.

The results of the mechanical and chemical analyses of the soil are given below.

Mechanical Analysis.

Results calculated to soil dried at 100° C.

	Diameter of Particles.					Per cent. Soil. (1st 9 inches.)
	Gravel	3	millimetres to 1	mm	... ...	9·1
	Coarse sand	1	,, to 0·5	,,	... ...	1·5
Fine Soil.	Medium sand	0·5	,, to 0·25	,,	... ...	3·3
	Fine sand	0·25	,, to 0·05	,,	... ...	5·2
	Silt	0·05	,, to 0·01	,,	... ...	24·1
	Fine silt	0·01	,, to 0·002	,,	... ...	32·2
	Clay	0·002	,, to ——	,,	... ...	24·6
						100·0
	Fine soil	0·5	,, to ——	,,	... ...	89·4

Chemical Analysis of Fine Soil.

Results calculated to soil dried at 100° C.

	Soil. (1st 9 inches.)	Approx. lb. per acre.
Insoluble siliceous matter	40·728	1,221,840
Soluble silica	·160	4,800
† Potassium oxide	·164	4,920
Sodium oxide	·181	5,430
Calcium oxide	3·860	115,800
Magnesia	·203	6,090
Manganese oxide	Nil.	Nil.
Iron oxide and alumina	36·220	1,086,600
‡ Phosphoric anhydride	·298	8,940
Sulphuric anhydride	·122	3,660
†† Carbonic anhydride	1·845	55,350
* Combined water and organic matter	16·219	486,570
	100·000	3,000,000
* Containing nitrogen	·263	7,890
† Containing potassium oxide soluble in 1 per cent. citric acid	·014	420
‡ Containing phosphoric anhydride soluble in 1 per cent. citric acid	·044	1,320
†† Equal to carbonate of lime	4·193	125,790

The soil contains :—

	per cent.	pounds per acre.
Soluble in hydrochloric acid—		
Potassium oxide	·164	4,920
Phosphoric anhydride	·298	8,940
Nitrogen	·263	7,890
Carbonate of lime	4·193	125,790
Soluble in 1 per cent. critic acid solution (available)—		
Potassium oxide...	·014	420
Phosphoric anhydride	·044	1,320

Soon after the ratoon canes in this field were cut in 1901, the land was holed and hoe ploughed, the fallen leaves of the sugar canes being turned under in this latter operation. Woolly Pyrol was then planted as a green dressing, but very little material was obtained. What little it was, was not buried, but fed off to the animals, the resulting manure going to some other field.

In October, farmyard manure at the rate of 40 tons per acre was applied to the field, and later on the field was retilled.

White Transparent cuttings were planted in December 1901 and a fairly regular stand of canes was obtained at an early date.

Farmyard manure at the rate of 40 tons per acre was applied to this field the composition of this manure is given below.

	per cent.	40 tons contain in lb.
Moisture	50·80	
* Organic matter	11·48	13,286
Insoluble siliceous matter	18·19	16,298
‡ Phosphoric anhydride	·27	241
Potassium oxide	·15	134
Undertermined substances	19·11	
	100·00	
* Containing nitrogen	·26	232
‡ Equal to tricalcium phosphate ...	·58	519

Forty tons of the farmyard manure supplied per acre 232 pounds of nitrogen, 241 pounds of phosphoric anhydride (equal to 519 pounds of phosphate of lime) and 134 pounds of potassium oxide.

The experiments may be divided into 4 sub series namely :—

Control pots receiving no chemical manure.

Nitrogen sub-series
- Minerals only
- Minerals and nitrogen
- Minerals (to plants only) and nitrogen
- Nitrogen only.

Phosphate sub-series
- Nitrogen and potash only
- Nitrogen, potash and superphosphate
- Nitrogen, potash and basic slag.

Potash sub-series
- Nitrogen and phosphate only
- Nitrogen, phosphate and potash.

In this field 200 holes were reaped and weighed, the remainder being left as a ring round each plot for the same purpose as already referred to in the case of the smaller plots. On account of this increase in the size of the plots, it was with one exception found possible only to have duplicates of each plot.

The canes were reaped between 5th and 13th May.

The mean results are given in Tables XIX—XXV.

Mean results

CONTROL PLOTS.

	Produce tons.
Farmyard manure only (2 plots)	20·24

EXPERIMENTS WITH NITROGEN

Farmyard manure, minerals and—	
No nitrogen (2 plots)	22·81
Nitrogen 40 lb. as sulphate of ammonia, (2 plots)	25·20
Nitrogen 60 ,, ,, ,, ,, ,, (3 plots)	23·21
(*a*) Nitrogen 80 ,, ,, ,, ,, ,, (3 plots)	24·07
(*b*) Nitrogen 80 ,, ,, ,, ,, ,, (2 plots)	23·78
Farmyard manure, no minerals and—	
No nitrogen	20.24
Nitrogen 60 lb. as sulphate of ammonia	24·68

EXPERIMENTS WITH PHOSPHATE.

Farmyard manure, nitrogen, potash and—	
No phosphate (2 plots)	23·76
Phosphate 50 lb. as superphosphate, (3 plots)	23·21
Phosphate 100 lb. ,, ,, (2 plots)	23·15
Phosphate 100 lb. ,, basic slag (2 plots)	25·64

EXPERIMENTS WITH POTASH.

Farmyard manure, nitrogen, phosphate and—	
No potash (2 plots)	23·76
Potash 50 lb. as sulphate (3 plots)	23·21
Potash 100 lb. as sulphate (2 plots)	25·90

An application of "complete" chemical fertilizer in addition to farmyard manure led to an increase of about 6 tons of produce.

Nitrogen was the most important constituent in producing the result, but there is evidence that both the phosphate and potash contributed to increase the yield.

Basic slag was a more effective form of phosphate than superphosphate.

ASHFORD FIELD. (1st ratoons.)

This is a continuation of the experiments of which the plant canes were reaped in

1902; they comprised 173 plots each 6 holes by 7 holes, the lining was 6 feet by 4 feet and the area under experiment was about 4 acres.

The results of the mechanical and chemical analyses of the soil and sub-soil taken from the report for 1902 are given below.

MECHANICAL ANALYSIS.

Results calculated to soil dried at 100° C.

		Diameter of Particles.	Per cent. soil. (1st 9 inches).	Per cent. sub-soil. (2nd 9 inches).
	Gravel	3 millimetres to 1 mm.	5·5	6·5
	Coarse sand	1 ,, ,, 0·5 ,,	·6	·9
Fine soil.	Medium sand	0·5 ,, ,, 0·25 ,,	1·5	2·2
	Fine sand	0·25 ,, ,, 0·05 ,,	6·3	4·9
	Silt	0·05 ,, ,, 0·01 ,,	5·8	22·1
	Fine Silt	0·01 ,, ,, 0·002 ,,	44·1	50·1
	Clay	0·002 ,, ,, —— ,,	36·2	13·3
			100·0	100·0
	Fine soil	0·5 ,, ,, —— ,,	93·9	92·6

CHEMICAL ANALYSIS OF FINE SOIL.

Results calculated to soil dried at 100° C.

	Per cent.		Approx. lb. per acre.	
	Soil (1st 9 inches)	Sub-soil (2nd 9 inches)	Soil (1st 9 inches)	Sub-soil (2nd 9 inches)
Insoluble siliceous matter ...	40·889	39·393	1,226,670	1,181,790
Soluble silica	·096	·136	2,880	4,080
† Potassium oxide	·226	·258	6,780	7,740
Sodium oxide	·286	·371	8,580	11,130
Calcium oxide	1·860	2·680	55,800	8,040
Magnesia	·268	·239	8,040	7,170
Maganese oxide	Nil.	Nil.	Nil.	Nil.
Iron oxide and alumina ...	38·416	38·696	1,152,480	1,160,880
‡ Phosphoric anhydride ...	·304	·319	9,120	9,570
Sulphuric anhydride	·340	·858	10,200	25,740
†† Carbonic anhydride ...	·425	·740	12,750	22,200
* Combined water and organic matter	16·890	16·310	506,700	489,300
	100·000	100·000	3,000,000	3,000,000
* Containing nitrogen	·284	·343	8,520	10,290
† Containing potassium oxide soluble in 1 per cent. citric acid	·034	·085	1,020	2,550
‡ Containing phosphoric anhydride soluble in 1 per cent. citric acid	·063	·111	1,890	3,330
†† Equal to carbonate of lime	·966	1·682	28,980	50,460

The soil contains:—

	Per cent.	Pounds per acre.
Soluble in hydrochloric acid—		
Potassium oxide	·226	6,780
Phosphoric anhydride	·304	9,120
Nitrogen	·284	8,520
Carbonate of lime	·966	28,980
Soluble in 1 per cent. citric acid solution (available)—		
Potassium oxide	·034	1,020
Phosphoric anhydride	·063	1,890

After the canes were cut in 1900, the field was holed and forked during which latter operation the fallen leaves left on the land from the ratoon crop were turned under.

Rouncivals were planted as a green dressing and after producing a very small crop were buried. The field was again forked and the canes planted in December.

Farmyard manure at the rate of 30 tons per acre was applied to this field. The composition of this manure is given below.

	Per cent.	30 tons contain in lb.
Moisture	71·82	
* Organic matter	20·43	13,729
Insoluble siliceous matter	2·53	1,700
‡ Phosphoric anhydride	·45	302
Potassium oxide	·13	87
Undetermined substances ...	4·64	
	100·00	
* Containing nitrogen	·31	208
‡ Equal to tricalcium phosphate ...	·98	658

Thirty tons of the farmyard manure supplied per acre 208 pounds of nitrogen, 302 pounds of phosphoric anhydride (equal to 658 pounds of phosphate of lime) and 87 pounds of potassium oxide.

The experiments were divided into 8 series A—H; each plot in A was repeated in each of the other series, so that each plot occurs 8 times.

Each of these series consisted of plots receiving the following applications :—

No chemical manure.

Nitrogen sub-series
- Nitrogen only
- Minerals only
- Minerals and nitrogen
- Double minerals and nitrogen

Phosphate sub-series
- Nitrogen and potash only
- Nitrogen, potash and superphosphate
- Nitrogen, potash and precipitated (Vi) phosphate
- Nitrogen, potash and basic slag.

Potash sub-series
- Nitrogen and phosphate only
- Nitrogen, phosphate and potash.

The White Transparent was the variety grown on the field; the reaping of the plant canes took place between 12th and 18th April, 1902; and the reaping of the ratoon canes took place between 13th & 18th May, 1903.

The mean results are given in Tables XXVI—XXIX.

Mean results.

CONTROL PLOTS.

	Produce tons.
Farmyard manure only, in 1900, 30 tons, (8 plots)	11·29

EXPERIMENTS WITH NITROGEN.

Farmyard manure in 1900, minerals in 1901 and 1902 and—	
No nitrogen (8 plots)	14·77
"Nitrogen" 50 lb. (8 plots)	18·76
"Nitrogen" 75 ,, (8 plots)	20·54
"Nitrogen" 100 ,, (8 plots)	21·93
Farmyard manure in 1900, and—	
"Nitrogen" only, 50lb. (8 plots)	17·33
Farmyard manure in 1900, double minerals in 1901 and 1902, and—	
"Nitrogen" 100lb. (8 plots)	22·39
Farmyard manure in 1900, minerals in 1901 only, and—	
"Nitrogen" 50lb. (8 plots)	19·22

EXPERIMENTS WITH PHOSPHATE.

Farmyard manure in 1900, nitrogen, potash and—	
No phosphate (8 plots)	18·00
Phosphate 50—150 lb. as basic slag (24 plots)	19·77
Phosphate 50—100 ,, as precipitated phosphate (16 plots) ...	19·46
Phosphate 50— 75 ,, as superphosphate (15 plots)	19·85
Phosphate 50 lb. as superphosphate; Slaked lime 1120 lb. (8 plots)	18·72

EXPERIMENTS WITH POTASH.

Farmyard manure in 1900, nitrogen, phosphate and—	
No potash (7 plots)	20·06
Potash 25—75lb. as sulphate (22 plots)	18·47

From these experiments it would appear that in the case of these first ratoon canes an application of chemical manure gave an increase of from 8 to 10 tons produce.

This increase was due in part to the application of phosphate and in part to the application of nitrogen.

The experiments did not show any superiority of one form of phosphate over another.

Hopper Field. (2nd ratoons.)

This is a continuation of the experiments of which the plant canes were reaped in 1901 and the 1st ratoons in 1902.

There were 146 plots each consisting of 42 stools of cane; the lining was 6 feet by 4 feet; there was therefore a total area of about 3½ acres under experiment.

The results of the mechanical and chemical analyses of the soil and sub-soil are are given below:—

MECHANICAL ANALYSIS.

Results calculated to soil dried at 100° C.

		Diameter of Particles.			Per cent. Soil. (1st 9 inches.)	Per cent. Sub-soil (2nd 9 inches.)
	Gravel	3	millimetres to 1	mm.	1·3	·8
	Coarse sand ...	1	,, to 0·5	,,	·6	·4
Fine soil.	Medium sand ...	0·5	,, to 0·25	,,	·4	·7
	Fine sand ...	0·25	,, to 0·05	,,	8·3	7·3
	Silt	0·05	,, to 0·01	,,	30·1	17·4
	Fine Silt ...	0·01	,, to 0·002	,,	29·9	50·1
	Clay	0·002	,, to ———	,,	29·4	23·3
					100·0	100·0
	Fine soil ...	0·5	,, to ———	,,	98·1	98·8

CHEMICAL ANALYSIS OF FINE SOIL.

Results calculated to soil dried at 100° C.

	Per cent.		Approx. lb. per acre.	
	Soil (1st 9 inches)	Sub-soil (2nd 9 inches)	Soil (1st 9 inches)	Sub-soil (2nd 9 inches)
Insoluble siliceous matter ...	44·190	43·735	1,325,700	1,312,050
Soluble silica	·090	·111	2,700	3,330
† Potassium oxide	·183	·197	5,490	5,910
Sodium oxide	·291	·326	8,730	9,780
Calcium oxide	2·250	1·775	67,500	53,250
Magnesia	·450	·369	13,500	11,070
Manganese oxide	·325	·535	9,750	16,050
Iron oxide and alumina ...	35·200	37·210	1,056,000	1,116,300
‡ Phosphoric anhydride ...	·352	·541	10,560	16,230
Sulphuric anhydride	·163	·180	4,890	5,400
†† Carbonic anhydride ...	·645	·410	19,350	12,300
* Combined water and organic matter	15·660	15·410	469,800	462,300
	99·799	100·799	2,993,970	3,023,970
* Containing nitrogen... ...	·239	·253	7,170	7,590
* Containing humus	3·452	3·146	103,560	94,380
† Containing potassium oxide soluble in 1 per cent. citric acid	·015	·011	450	330
‡ Containing phosphoric anhydride soluble in 1 per cent. citric acid	·036	·032	1,080	960
†† Equal to carbonate of lime	1·466	·932	43,980	27,960

The soil is a red clay soil, resting upon a stiff clay sub-soil. The soil contains :—

	per cent.	pounds per acre.
Soluble in hydrochloric acid—		
Potassium oxide	·183	5,490
Phosphoric anhydride	·352	10,560
Nitrogen	·239	7,170
Carbonate of lime	1·446	43,980
Soluble in 1 per cent. citric acid solution (available)—		
Potassium oxide	·015	450
Phosphoric anhydride	·036	1,080

The sub-soil is much richer in phosphoric anhydride than the soil.

Some little time after the 2nd ratoon canes were reaped from Hopper Field in 1899, the fallen leaves were turned under with the fork, and the cane holes dug. The field was then sown with Woolly Pyrol and Bengal beans which had unfortunately not made much growth when they had to be buried as green dressing. The field was again forked and was in good tilth when planted with White Transparent cuttings in the December of the same year.

Forty tons of farmyard manure were applied to some of the plots in 1899: the composition of this farmyard manure is given below :—

	Per cent.	40 tons contain in lb.
Moisture	24·48	
* Organic matter	20·43	18,305
Insoluble siliceous matter ...	20·71	18,556
‡ Phosphoric anhydride ...	·29	260
Potassium oxide	·38	340
Undetermined substances ...	33·71	
	100·00	
* Containing nitrogen ...	·41	367
‡ Equal to tricalcium phosphate	·63	564

Forty tons of the farmyard manure supplied per acre 367 pounds of nitrogen, 260 pounds of phosphoric anhydride (equal to 564 pounds of phosphate of lime) and 340 pounds of potassium oxide.

The reaping of the plots of plant canes was commenced on the first and finished on the 18th April, 1901; the reaping of the ratoon canes took place between the 18th and 23rd April, 1902; the reaping of the 2nd ratoons took place between 18th and 26th of May, 1903.

The experiments were divided into three series A, B and C. Each plot of series A was repeated in series B and C; each experiment was therefore tried in triplicate. Each series was divided into two sub-series, (i) plots not receiving farmyard manure, (ii) plots receiving farmyard manure.

Each of these sub-series with some exceptions contained plots receiving the following manurial treatment :—

No manure.

Nitrogen Group.
- Nitrogen only to plants and ratoons
- Minerals only to plants and ratoons
- Minerals to plants and ratoons, nitrogen to plants and ratoons
- Minerals to plants only, nitrogen to plants and ratoons.

Phosphoric acid Group.
- Nitrogen and potash only
- Nitrogen, potash and basic slag phosphate
- Nitrogen, potash and superphosphate.

Potash Group
- Nitrogen and phosphate only
- Nitrogen, phosphate and potash.

The mean results obtained with the 2nd ratoons are given in Tables XXX—XL.

Mean results.

CONTROL PLOTS.

		Produce tons.
No manure	(23 plots)	14·87
Chemical manure	(9 plots)	20·36

EXPERIMENTS WITH NITROGEN.

Minerals in 1900, 1901, 1902 and—		
No Nitrogen	(3 plots)	14·16
Nitrogen	(30 plots)	20·08
Minerals in 1900 (to plants only) and—		
" Nitrogen "	(9 plots)	16·48
" Nitrogen " only (no minerals)	... ...	16·84

	Produce tons.
Farmyard manure in 1900 and minerals in 1900, 1901, 1902 and—	
No Nitrogen (3 plots)	15·91
"Nitrogen" 50 lb (3 plots)	20·79
"Nitrogen" 75 „ (3 plots)	23·54
"Nitrogen" 100 „ (3 plots)	23·34
Farmyard manure in 1900, minerals in 1900 (to plants only) and—	
"Nitrogen" 50 lb	19·70
"Nitrogen" 75 „	22·65
"Nitrogen" 50—100 lb (9 plots)	23·16
Farmyard manure in 1900, no minerals and—	
"Nitrogen" 50 lb.	17·98
"Nitrogen" 75 „	20·48
"Nitrogen" 100 „	23·24

EXPERIMENTS WITH PHOSPHATE.

Nitrogen and potash in 1900, 1901, 1902 and—	
No phosphate (3 plots)	18·95
Phosphate 50—150 lb. as basic slag (9 plots)	19·11
Phosphate 25—75 „ superphosphate (9 plots)	19·97
Farmyard manure in 1900, nitrogen and potash in 1900, 1901, 1902 and—	
No phosphate	20·48
Phosphate 100 lb. as basic slag	20·79

EXPERIMENTS WITH POTASH.

Nitrogen and phosphate in 1900, 1901, 1902 and—	
No potash	14·44
Potash 25 lb. as sulphate (3 plots)	17·32
Potash 50 „ „	20·06
Potash 75 „ „	22·68
Farmyard manure in 1900, nitrogen and phosphate in 1900, 1901, 1902 and—	
No potash	21·75
Potash 50lb. as sulphate	20·79

From these results with 2nd ratoons it appears that—

In the case of land that had received no farmyard manure before the canes were planted—

Minerals alone produced no effect.

Minerals and nitrogen produced a crop of 20 tons produce; and minerals were necessarily applied to the ratoons for the nitrogen to produce its full effect.

Basic slag phosphate produced no effect; superphosphate a small increase.

Potash in increasing applications up to 75 lb. produced a large increase of yield.

In the case of land that had received a large application of farmyard manure before the canes were planted—

The application of nitrogen up to 75 lb. or 100 lb. produced a large increase in the yield.

It is not clear whether minerals produced any effect when applied in addition to nitrogen, when the amount of the latter did not exceed 75lb.

When the application of nitrogen reached 100lb., the application of minerals in addition produced no further increase of yield.

ONE ACRE PLOTS.

With the kind co-operation of A. Cameron Esq., manurial plots of the approximate area of one acre were reaped at Hampton, Bushy Park and Ruby, St. Philip, (plant canes) and Blowers (1st ratoons).

In addition to the chemical manures, a liberal application of farmyard manure was employed while preparing the land for canes. The canes of each plot were weighed and crushed in plantation mill, the juice measured and an average sample analysed.

The varieties used for the experiments are indicated in the tables. The results are calculated to the acre and given in Tables XLI—LI.

Owing to some large differences from one plot to another in the percentage expressions by the mills, due we think chiefly to differences in feeding and steam pressure, we prefer to calculate the results on the weight of canes.

Plant Canes.

EXPERIMENTS WITH NITROGEN.

At Hampton the application of 40lb. per acre of nitrogen gave an increase of 5 tons cane which was not further augmented by increasing the application of nitrogen to 60lb. per acre.

EXPERIMENTS WITH PHOSPHATE.

At Bushy Park the application of 50lb. phosphate as basic slag per acre apparently led to a small diminution of yield.

At Ruby plantation mistakes were made in the amount of manures applied rendering it difficult to make use of the results, which on the whole show no increase of yield as the result of the application of basic slag, but a small increase as the result of the application of superphosphate.

EXPERIMENTS WITH POTASH.

At Ruby plantation the results of the application of potash as sulphate were :—

	Canes tons.
No potash (1 plot)	13·4
Potash 50lb. as sulphate (1 plot)	15·7
Potash 100 ,, ,, (2 plots)	17·3

showing an increase of 4 tons canes for an application of 100lb. potash as sulphate.

First Ratoons.

Before planting in canes, a liberal application of farmyard manure was given and, when in plant canes, chemical fertilizers containing nitrogen, phosphate and potash were applied.

While the ratoons were growing, each plot received approximately 100lb. nitrogen per acre.

A. Two plots received nitrogen only, as sulphate of ammonia.

B. Two plots received 100lb. nitrogen, partly as sulphate of ammonia and partly as nitrate of potash which also supplied about 50lb. potash.

C. Two plots received the same as B. together with 40lb. of phosphate as superphosphate.

D. Two plots received 100lb. nitrogen as sulphate of ammonia, 50lb. potash as sulphate and 40lb. phosphate as superphosphate.

Very little difference was observed in the yield of these different plots.

It appeared that potash and phosphate in addition to the large amount of nitrogen increased the yield by about 1½ tons canes. On the average there was no gain by applying part of the nitrogen as nitrate of potash.

EXPERIMENTS UPON TILLAGE.

At Hampton plantation a very level 6½ acre field (Drinkwater field) was marked out into 10 large strips and subjected to the different processes of tillage detailed below.

The strips differed somewhat in length and width; the width in different strips varied between 10 and 14 holes. The results are calculated to the acre and given in Table LI.

Numbers of plots.		Canes tons.
1, 6	Subsoiled close; lined 6 x 6; cane holes dug; manured and cultivated in the usual estate manner. Mean results	15·75
2, 7	Ploughed flat with Disc plough, turning under farmyard manure 8 inches deep; cane holes dug; and cultivated in ordinary estate methods. Mean results	15·59
3, 8	Subsoiled close; a furrow opened with mould board plough six feet apart; manure spread on banks; and canes planted in furrow six feet apart. Mean results	14·94
4, 9	Ridged with Disc plough, turning under farmyard manure 8 inches deep; planted in rows in bottom of furrow; cultivated with Diamond cultivator; and trashed as usual. Mean results	13·20
5, 10.	Subsoiling opened one way; forked piece of land left between cane holes; and cultivated in the ordinary estate way. Mean results	14·20

It will be seen that an extreme difference of 2½ tons of canes per acre occurred between (1) the most favourable plots and (2) the least favourable plots.

(1) The most favourable plots were sub-soiled close, cane holes dug and manured and cultivated in the usual estate manner.

(2) The least favourable plots were ridged with the disc plough turning under farmyard manure 8 inches deep, the canes being planted in rows at the bottom of the furrows and cultivated with the Diamond cultivator.

TABLE V. DODDS.—SUMMERVALE FIELD. NITROGEN SERIES.

Farmyard manure, 30 tons.
Nitrogen.
Phosphate, as superphosphate of lime, 80lb. in January.
Potash, as sulphate, 60lb. in January.

Number of Plot.		Applied in 1902. January.	Applied in 1902. June.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
A 1	No chemical manure	...	...	12,148	20·53	5·13	15·40	none	59·75	1·0848	2·106	·046	·159	91·13	2·18	1,899	3,999	...	...	...
B 1	Farmyard manure, 20 tons extra ...	...	...	17,102	33·18	6·91	26·27	1·39	60·00	1·0826	2·064	·058	·130	92·54	2·81	3,261	6,731	+ 12·65	+ 10·87	+ 2,732
A 2	No nitrogen	...	...	15,410	24·51	5·86	18·65	none	59·75	1·0870	2·156	·042	·172	90·97	1·95	2,296	4,950	+ 3·98	+ 3·25	+ 951
A 3	40lb. nitrogen, as sulphate of ammonia ...	...	40	13,022	23·09	4·89	18·20	5·04	58·75	1·0817	2·030	·060	·138	91·11	2·95	2,214	4,494	+ 2·56	+ 2·80	+ 495
A 4	60 „ „ „ „ „ „ ...	...	60	13,189	24·60	5·24	19·36	3·20	60·75	1·0839	2·033	·050	·204	88·89	2·46	2,430	4,940	+ 4·07	+ 3·96	+ 941
A 6	80 „ „ „ „ „ „ ...	...	80	15,412	21·65	5·61	16·04	6·39	59·00	1·0857	2·059	·046	·229	88·22	2·23	1,952	4,019	+ 1·12	+ ·64	+ 20
B 3	40 „ „ „ „ „ „ ...	15	25	16,618	33·01	6·78	26·23	none	61·00	1·0809	1·955	·061	·189	88·66	3·12	3,316	6,483	+ 12·48	+ 10·83	+ 2,484
A 5	60 „ „ „ „ „ „ ...	15	45	15,472	19·57	4·90	14·67	6·05	58·00	1·0835	1·981	·050	·244	87·08	2·52	1,759	3,485	− ·96	− ·73	− 514
B 4	60 „ „ „ nitrate of soda ...	...	60	16,748	31·40	7·18	24·22	1·93	60·00	1·0822	2·027	·052	·161	90·49	2·56	3,008	6,097	+ 10·87	+ 8·82	+ 2,098
B 7	40 „ „ „ dried blood	15	25	16,727	28·64	6·45	22·19	4·79	59·43	1·0826	1·981	·058	·213	87·97	2·93	2,729	5,404	+ 8·11	+ 6·79	+ 1,405
B 5	60 „ „ „ „ „ ...	15	45	16,701	27·41	5·62	21·79	5·22	59·75	1·0804	1·975	·083	·135	90·06	4·20	2,700	5,333	+ 6·88	+ 6·39	+ 1,334
B 2	40 „ „ „ „ „ ...	40	...	18,029	34·73	6·37	28·36	·40	63·50	1·0853	2·111	·043	·169	90·87	2·04	3,717	7,847	+ 14·20	+ 12·96	+ 3,848
B 6	60 „ „ „ „ „ ...	60	...	16,832	26·96	6·27	20·69	6·71	59·50	1·0844	2·009	·047	·243	87·68	2·34	2,543	5,109	+ 6·38	+ 5·29	+ 1,110

TABLE VI. DODDS—SUMMERVALE FIELD. PHOSPHATE SERIES.

Farmyard manure, 30 tons.
Phosphate.
Nitrogen, as sulphate of ammonia, 60lb.—15lb in January, 45lb in June.
Potash, as sulphate, 60lb. in January.

Number of Plot.		Applied in 1902. January.	Applied in 1902. June.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30°C./16·6°C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb per acre.
A 1	No chemical manure	...	...	12,148	20·53	5·13	15·40	none.	59·75	1·0848	2·106	·046	·159	91·13	2·18	1,899	3,999	...	...	...
B 1	Farmyard manure, 20 tons extra ...	...	...	17,102	33·18	6·91	26·27	1·39	60·00	1·0826	2·064	·058	·130	92·54	2·81	3,261	6,731	+12·65	+10·87	+ 2,732
A 7	No phosphate	...	...	17,505	29·13	7·32	21·81	3·01	59·59	1·0861	2·113	·043	·190	90·07	2·03	2,681	5,665	+ 8·60	+ 6·41	+ 1,666
B 8	40lb. phosphate, as superphosphate...	40	...	16,481	25·81	6·45	19·36	3·26	60·25	1·0848	2·057	·046	·208	89·01	2·24	2,408	4,953	+ 5·28	+ 3·96	+ 954
A 5	80 „ „ „ „ ...	80	...	15,472	19·57	4·90	14·67	6·05	58·00	1·0835	1·981	·050	·244	87·08	2·52	1,759	3,485	− ·96	− ·73	− 514
B 9	120 „ „ „ „ ...	120	...	14,434	23·64	4·58	19·06	3·84	60·00	1·0809	1·960	·083	·162	88·89	4·23	2,370	4,645	+ 3·11	+ 3·66	+ 646
A 8	80 „ „ „ „ ...	40	40	15,454	25·69	6·31	19·38	2·54	60·25	1·0822	2·014	·060	·166	89·91	2·97	2,417	4,868	+ 5·16	+ 3·98	+ 869
A 9	120 „ „ „ „ ...	60	60	15,866	28·59	5·52	23·07	·70	59·50	1·0817	1·962	·061	·205	88·06	3·11	2,843	5,578	+ 8·06	+ 7·67	+ 1,579
B 13	80 „ phosphate, as basic slag ...	80	...	16,536	33·28	6·21	27·07	5·02	61·25	1·0778	1·868	·061	·194	87·99	3·27	3,446	6,437	+12·75	+11·67	+ 2,438
A 13	100 „ „ „ „ „ ...	100	...	16,201	30·86	3·62	27·24	none.	61·50	1·0795	1·884	·071	·215	86·82	3·77	3,476	6,549	+10·38	+11·84	+ 2,550

TABLE VII. DODDS—SUMMERVALE FIELD. POTASH SERIES.

Farmyard manure, 30 tons.
Potash, as sulphate.
Nitrogen, as sulphate of ammonia, 60lb.—15lb. in January, 45lb. in June.
Phosphate, as superphosphate of lime, 80lb. in January.

Number of Plot.		Applied in 1902.		Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
A 1	No chemical manure	...	...	12,148	20·53	5·13	15·40	none	59·75	1·0848	2·106	·046	·159	91·13	2·18	1,899	3,999	...	...	...
B 1	Farmyard manure, 20 tons extra ...	...	...	17,102	33·18	6·91	26·27	1·39	60·00	1·0826	2·064	·058	·130	92·54	2·81	3,261	6,731	+12·65	+10·87	+2,732
B 10	No potash	...	...	15,697	26·65	5·39	21·26	6·10	61·00	1·0791	1·939	·069	·150	89·85	3·56	2,693	5,222	+ 6·12	+ 5·86	+1,223
A 10	40 lb. potash...	40	...	15,573	29·63	6·50	23·13	1·47	60·75	1·0817	1·973	·061	·194	88·55	3·09	2,910	5,741	+ 9·10	+ 7·73	+1,742
A 5	60 „ „	60	...	15,472	19·57	4·90	14·67	6·05	58·00	1·0835	1·981	·050	·244	87·08	2·52	1,759	3,485	− ·96	− ·73	− 514
A 11	80 „ „	80	...	15,867	32·08	5·93	26·15	·86	61·75	1·0826	1·981	·050	·221	87·97	2·52	3,341	6,619	+11·55	+10·75	+2,620
A 12	100 „ „	100	...	17,092	28·93	5·45	23·48	·44	59·25	1·0809	1·889	·089	·227	85·68	4·71	2,883	5,446	+ 8·40	+ 8·08	+1,447
B 12	60 „ „	30	30	16,411	32·13	4·93	27·20	3·26	61·25	1·0817	1·994	·060	·174	89·46	3·01	3,448	6,875	+11·60	+11·80	+2,876
B 11	80 „ „	40	40	17,920	31·00	5·23	25·77	5·47	61·73	1·0826	2·040	·050	·162	90·59	2·45	3,292	6,716	+10·47	+10·37	+2,717

TABLE VIII. FOURSQUARE PLANTATION.—JOHNNY KING FIELD.

PLANT CANES.
Chemical Manure.
Mean results.

Farmyard manure, 27 tons.
"*Nitrogen*," 60lb.—10lb. in January, 25lb. in June, 25lb. in August.
Phosphate, as basic slag, 100lb. in January.
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
			Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259	No chemical manure, mean of 21 plots	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927	...	...	...
1, 9, 24, 36, 41, 80, 56, 128, 136, 140, 144, 124, 173, 160, 217, 244, 252, 250, 221, 242	Chemical manure, mean of 20 plots ...	14,493	24·15	5·14	19·01	2·61	59·73	1·0793	1·880	·059	·226	86·86	3·14	2,363	4,438	+2·53	+2·52	+511
40, 106, 232	* Chemical manure, mean of 3 plots ...	15,044	23·12	5·74	17·38	1·23	59·31	1·0776	1·842	·064	·213	86·89	3·47	2,140	3,946	+1·50	+ ·89	+ 19

* These plots received farmyard manure in 1899 and 1901.

TABLE IX. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.

Nitrogen Sub-series I.

Mean results.

Farmyard manure, 27 tons.
Nitrogen.
Phosphate, as basic slag, 100lb. in January.
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Applied in 1902. January.	June.	Aug. or Sept.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Saccharose lb. per acre.	Gallons of Juice per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259 ...	No chemical manure, mean of 21 plots ...	...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	3,927	2,046	...	...	...
25, 34, 123, 113, 251, 220 ...	No nitrogen	...	...	...	14,762	25·14	5·45	19·69	1·74	60·62	1·0808	1·945	·057	·201	88·30	2·92	4,823	2,478	+3·52	+3·20	+ 896
43, 141, 261	40lb. "nitrogen"	10	15	15	14,157	25·19	5·41	19·78	2·35	61·17	1·0794	1·928	·054	·184	89·00	2·80	4,828	2,509	+3·57	+3·29	+ 901
41, 124, 250	60 „ „	10	25	25	14,520	23·83	5·51	18·32	2·08	60·68	1·0789	1·907	·060	·187	88·52	3·15	4,408	2,310	+2·21	+1·83	+ 481
23, 143, 214	80 „ „	10	35	35	14,258	24·38	5·72	18·66	3·41	59·53	1·0785	1·869	·063	·211	87·22	3·36	4,310	2,307	+2·76	+2·17	+ 383
5, 107, 231	100 „ „	10	45	45	14,016	22·18	5·62	16·57	2·90	59·56	1·0782	1·829	·066	·241	85·65	3·63	3,745	2,058	+ ·56	+ ·08	− 182
13, 119, 216	40 „ „	...	20	20	13,431	24·22	5·57	18·66	2·78	59·67	1·0787	1·844	·067	·235	85·83	3·74	4,249	2,312	+2·60	+2·17	+ 322
50, 99, 198	60 „ „	...	30	30	13,774	23·67	5·68	17·98	2·25	60·58	1·0789	1·890	·062	·202	87·70	3·33	4,372	2,277	+2·05	+1·49	+ 445
15, 134, 197	80 „ „	...	40	40	14,537	23·22	5·36	17·86	3·36	59·97	1·0787	1·839	·070	·238	85·65	3·87	4,129	2,235	+1·60	+1·37	+ 202
16, 115, 190	100 „ „	...	50	50	14,485	21·49	4·64	16·85	5·12	58·85	1·0785	1·826	·063	·253	85·27	3·47	3,762	2,059	− ·13	+ ·36	− 165
17, 133, 236	40 „ nitrogen, as sulphate of ammonia	10	15	15	15,025	25·40	5·50	19·90	4·27	59·60	1·0781	1·854	·060	·217	87·00	3·23	4,556	2,463	+3·78	+3·41	+ 629
35, 132, 237	60 „ „ „ „ „ „	10	25	25	14,802	27·58	5·11	22·47	1·74	60·42	1·0772	1·843	·063	·201	87·43	3·45	5,198	2,816	+5·96	+5·98	+1,271
53, 96, 219	80 „ „ „ „ „ „	10	35	35	14,682	22·76	5·20	17·56	3·89	59·58	1·0782	1·831	·069	·235	85·79	3·78	3,981	2,178	+1·14	+1·07	+ 54
71, 131, 240	40 „ nitrogen, as nitrate of soda ...	10	15	15	14,722	25·93	5·34	20·59	2·41	59·83	1·0763	1·819	·062	·203	87·30	3·42	4,686	2,568	+4·31	+4·10	+ 759
72, 112, 241	60 „ „ „ „ „ ...	10	25	25	14,278	22·35	4·75	17·60	2·94	58·92	1·0772	1·843	·056	·209	87·34	3·11	4,018	2,152	+ ·73	+1·11	+ 91
54, 94, 223	80 „ „ „ „ „ ...	10	35	35	15,029	24·93	5·34	19·59	4·07	59·17	1·0788	1·851	·068	·232	86·07	3·68	4,462	2,414	+3·31	+3·10	+ 535

TABLE X. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.
Nitrogen Sub-series I.
Mean results.

Farmyard manure, 27 tons.
Nitrogen.
Phosphate, as basic slag, 200lb. in January.
Potash, as sulphate, 100lb. in January.

Numbers of Plots.		Applied in 1902. January.	June.	Aug. or Sept.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30°C./16·6°C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce Tons per acre.	Canes Tons per acre.	Saccharose lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259.	No chemical manure, mean of 21 plots	...	...	...	13,285	21·62	5·13	16·49	1.46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927	...	...	...
44, 103	No nitrogen	...	...	...	14,641	22·45	5·94	16·51	2·36	60·50	1·0798	1·927	·056	·192	88·54	2·93	2,077	4,008	+ ·83	+ ·02	+ 81
26, 121	60lb. "nitrogen"	10	25	25	14,762	25·83	5·40	20·43	3·75	57·98	1·0778	1·784	·080	·258	84·05	4·56	2,462	4,386	+4·21	+3·94	+459
8, 139	80 „ „	10	35	35	15,246	25·13	5·66	19·47	4·45	57·75	1·0788	1·831	·065	·256	85·11	3·57	2,336	4,281	+3·51	+2·98	+354
27, 102	100 „ „	10	45	45	13,703	26·75	5·89	20·86	3·25	60·50	1·0773	1·831	·070	·210	86·71	3·84	2,625	4,818	+5·13	+4·37	+891
45, 104	* No nitrogen	...	...	...	13,643	24·18	5·72	18·46	2·39	63·25	1·0793	1·938	·063	·163	89·53	3·24	2,423	4,695	+2·56	+1·97	+768

*These plots received farmyard manure in 1899 and 1901.

TABLE XI. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.

Nitrogen Sub-series I.

Mean results.

Farmyard manure, 27 tons.
Nitrogen.
Phosphate, none.
Potash, none.

Numbers of Plots.		Applied in 1902.			Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.	Aug. or Sept.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16.6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259.	No chemical manure, mean of 21 plots	...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927	...	...	...
29, 130, 253 ...	40lb. "nitrogen"	10	15	15	15,226	21·07	5·57	15·50	4·58	58·75	1·0775	1·821	·061	·233	86·10	3·37	1,898	3,471	— ·55	— ·99	—456
47, 111, 254 ...	60 „ „	10	25	25	14,036	19·74	4·74	15·00	2·63	59·58	1·0778	1·829	·060	·234	86·13	3·30	1,858	3,400	—1·88	—1·49	—527
12, 145, 245 ...	80 „ „	10	35	35	14,843	26·24	5·45	20·79	3·60	59·75	1·0797	1·853	·058	·263	85·25	3·11	2,572	4,766	+4·62	+4·30	+839
31, 127, 247 ...	100 „ „	10	45	45	15,488	26·01	5·52	20·49	2·39	58·92	1·0799	1·904	·060	·214	87·41	3·16	2,509	4,789	+4·39	+4·00	+862

TABLE XII. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.
Nitrogen Sub-series II.
Mean results.

Farmyard manure, 27 tons.
Nitrogen.
Phosphate, as basic slag, 100lb. in January.
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Applied in 1902.			Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.	Aug. or Sept.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259.	No chemical manure, mean of 21 plots	...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927	...	...	...
7, 52, 105, 95, 233.	No nitrogen	...	...	...	14,011	24·36	5·56	18·80	1·67	60·82	1·0788	1·839	·073	·239	85·50	3·98	2,377	4,373	+2·74	+2·31	+446
42, 142, 260 ...	40 lb. "nitrogen"	10	15	15	14,819	24·96	5·50	19·46	3·12	59·50	1·0775	1·849	·063	·203	87·35	3·45	2,409	4,415	+3·34	+2·97	+488
40, 106, 232 ...	60 „ „	10	25	25	15,044	23·12	5·74	17·38	1·23	59·31	1·0776	1·842	·064	·213	86·89	3·47	2,140	3,946	+1·50	+ ·89	+ 19
22, 125, 213 ...	80 „ „	10	35	35	14,904	24·71	5·74	18·97	3·66	58·17	1·0765	1·787	·069	·233	85·59	3·83	2,296	4,107	+3·09	+2·48	+180
4, 108, 249 ...	100 „ „	10	45	45	15,653	20·71	4·79	15·92	3·38	59·00	1·0792	1·858	·065	·240	85·89	3·55	1,955	3,607	− ·91	− ·57	−320
3, 138 ...	60 „ „	...	40	20	12,917	23·47	5·71	17·76	2·20	60·25	1·0778	1·854	·069	·200	87·30	3·71	2,217	4,087	+1·85	+1·27	+160
38, 120 ...	60 „ „	10	30	20	17,060	24·72	5·77	18·95	1·25	60·75	1·0780	1·874	·070	·185	87·99	3·71	2,393	4,471	+3·10	+2·46	+544
19, 137 ..	60 „ „	10	40	10	14,579	25·76	5·83	19·92	1·74	61·25	1·0766	1·808	·077	·208	86·35	4·28	2,539	4,593	+4·14	+3·43	+666
32, 101 ...	40 „ „	...	20	20	14,944	23·82	5·91	17·91	4·76	59·70	1·0773	1·849	·066	·195	87·59	3·59	2,218	4,102	+2·20	+1·42	+175
51, 98, 215 ...	60 „ „	...	30	30	12,973	20·57	6·45	14·12	4·31	59·83	1·0779	1·824	·062	·241	85·76	3·40	1,753	3,205	−1·05	−2·37	−722
33, 116 ...	80 „ „	...	40	40	13,723	23·53	5·35	18·18	5·65	59·17	1·0769	1·825	·067	·207	86·90	3·71	2,238	4,095	+1·91	+1·69	+168

TABLE XIII. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.
Nitrogen Sub-series II.
Mean results.

Farmyard manure, 27 tons.
Nitrogen,
Phosphate, none.
Potash, none.

Numbers of Plots.		Applied in 1902.			Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.	Aug. or Septr.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259 ...	No chemical manure mean of 21 plots.	...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	2·12	87·64	3·02	2,046	3,927	...	...	...
11, 147, 256	40lb. "nitrogen"	10	15	15	13,411	22·67	5·42	17·25	2·70	58·17	1·0783	1·808	·058	2·72	84·55	3·25	2,091	3,765	+1·05	+ ·76	−162
48, 129, 257	60 „ „	10	25	25	12,927	19·99	5·58	14·41	2·83	58·62	1·0763	1·786	·070	2·29	85·60	3·98	1,760	3,137	−1·63	−2·08	−790
30, 146, 258	80 „ „	10	35	35	15,085	25·54	5·42	20·12	2·89	58·82	1·0766	1·784	·065	2·43	85·27	3·66	2,471	4,365	+3·92	+3·63	+438
49, 109, 248	100 „ „	10	45	45	14,601	21·70	4·76	16·94	7·24	58·25	1·0783	1·823	·034	2·53	85·00	3·77	2,047	3,737	+ ·08	+ ·45	−190

TABLE XIV. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.

Phosphate Sub-series I.

Mean results.

Farmyard manure, 27 tons.
Phosphate.
"*Nitrogen*," 60lb.—10lb. in January, 25lb. in June, 25lb. in August or Sept.
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Applied in 1902. January.	Applied in 1902. June.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259	No chemical manure, mean of 21 plots ...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927	...	...	...
84, 151, 204 ...	No phosphate	...	...	14,500	23·15	5·50	17·65	4·39	58·58	1·0782	1·865	·053	·217	87·35	2·83	2,148	4,005	+1·53	+1·16	+ 78
67, 168, 190 ...	25lb. phosphate, as superphosphate ...	25	...	14,702	22·80	4·96	17·84	7·43	58·26	1·0763	1·784	·057	·244	85·52	3·24	2,165	3,878	+1·18	+1·35	− 49
68, 167, 209 ...	50 ,, ,, ,, ,, ...	25	25	14,661	23·60	5·47	18·13	2·23	59·06	1·0778	1·827	·058	·238	86·08	3·17	2,227	4,059	+1·98	+1·64	+ 132
69, 148, 211 ...	75 ,, ,, ,, ,, ..	37½	37½	14,177	22·84	5·32	17·52	4·91	58·75	1·0767	1·808	·057	·231	86·24	3·17	2,144	3,867	+1·22	+1·03	− 60
88, 164, 195 ...	100 ,, ,, ,, ,, ..	50	50	15,871	26·06	5·68	20·38	2·49	59·50	1·0770	1·843	·056	·205	87·72	3·03	2,523	4,691	+4·44	+3·89	+ 764
89, 182, 194 ...	50 ,, ,, ,, ,, ...	50	...	13,300	24·50	5·00	19·50	3·56	59·00	1·0787	1·853	·052	·241	86·31	2·85	2,388	4,465	+2·88	+3·01	+ 538
90, 181, 212 ...	75 ,, ,, ,, ,, ...	75	...	13,875	23·65	5·44	18·22	4·08	58·74	1·0762	1·813	·057	·212	87·06	3.14	2,315	4,207	+2·03	+1·73	+ 280
83, 171, 203 ...	50 ,, phosphate, as basic slag ...	50	...	13,855	21·16	5·16	16·00	1·33	58·43	1·0798	1·908	·057	·213	87·65	2·97	1,937	3,693	− ·46	− ·49	− 234
80, 173, 221 ...	100 ,, ,, ,, ,, ...	100	...	14,661	22·98	5·33	17·65	·54	58·91	1·0785	1·858	·057	·228	86·70	3·08	2,160	4,018	+1·36	+1·16	+ 91
79, 172, 202 ..	150 ,, ,, ,, ,, ...	150	...	14,742	24·27	5·22	19·05	4·46	58·21	1·0769	1·824	·064	·212	86·85	3·51	2,295	4,185	+2·65	+2·56	+ 253
78, 155, 239 ...	200 ,, ,, ,, ,, ...	200	...	13,855	21·02	5·07	15·95	1·98	58·67	1·0787	1·877	·059	·211	87·42	3·15	1,944	3,644	− ·60	− ·54	− 283
60, 156, 201 ...	Lime	..	...	13,935	26·13	5·49	20·64	1·02	59·50	1·0776	1·854	·059	·206	87.47	3·20	2,553	4,734	+4·51	+4·15	+ 807
77, 175, 200 ...	Lime	...	...	14,783	25·73	4·86	20·87	2·82	58·57	1·0789	1·878	·057	·220	87·16	3·02	2,539	4,772	+4·11	+4·38	+ 845

TABLE XV. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.
Phosphate Sub-series II.
Mean results.

Farmyard manure, 27 tons.
Phosphate.
"*Nitrogen*," 60lb.—10lb. in January, 25lb. in June, 25lb. in August or September.
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Applied in 1902. January.	Applied in 1902. June.	Number of canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259	No chemical manure, mean of 21 plots ...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·04	3·02	2,046	3,927	...	...	...
85, 150, 186 ...	No phosphate	...	...	12,988	22·32	4·90	17·42	5·67	59·27	1·0769	1·824	·055	·221	86·84	3·03	2,147	3,918	+ ·70	+ ·93	− 9
86, 149, 191 ...	50 lb. phosphate, as superphosphate ...	25	25	13,996	23·74	5·46	18·28	1·75	60·08	1·0763	1·825	·057	·203	87·54	3·13	2,286	4,173	+2·12	+1·79	+ 246
87, 165, 193 ...	75 „ „ „ „ ...	37½	37½	15,307	25·33	4·77	20·56	2·17	59·00	1·0782	1·828	·056	·251	85·56	3·13	2,523	4,669	+3·71	+4·07	+ 742
81, 153, 185 ...	50 „ phosphate, as basic slag ...	50	...	13,431	21·13	5·13	16·00	3·69	59·58	1·0772	1·836	·065	·207	87·08	3·57	1,983	3,631	− ·49	− ·49	− 296
61, 154, 184 ...	150 „ „ „ „	150	...	14,782	26·45	6·12	20·33	1·09	58·58	1·0787	1·879	·059	·208	87·53	3·18	2,473	4,629	+4·83	+3·84	+ 702
69, 157, 183 ...	Lime	...	...	14,782	26·87	6·21	20·66	4·00	58·75	1·0770	1·826	·063	·215	86·77	3·46	2,528	4,620	+5·25	+4·17	+ 693
76, 176, 199 ...	Lime	...	...	15,246	27·33	6·19	21·14	2·99	59·42	1·0795	1·904	·057	·210	87·71	2·97	2,605	4,957	+5·71	+4·65	+1,030

TABLE XVI. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.

Potash Sub-series I.

Mean results.

Farmyard manure, 27 tons.
Potash, as sulphate.
"*Nitrogen*," 60lb.—10lb. in January, 25lb. in June, 25lb. in August.
Phosphate, as basic slag, 100lb. in January.

Numbers of Plots.		Applied in 1902.			Number of Canes per acre	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.	Aug. or Sept.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259	No chemical manure, mean of 21 plots	...	...	...	13,285	21·62	5·13	16·49	1.46	59·83	1·0801	1·917	·058	·212	87·64	3·14	2,046	3,927	...	...	...
74, 161, 206	No potash	...	...	...	13,472	18·87	5·12	13·76	·73	58·33	1·0791	1·882	·059	·217	87·20	3·09	1,675	3,165	- 2·75	- 2·73	- 762
75, 162, 207	25lb. potash	25	...	...	13,734	23·59	4·97	18·62	1·98	60·17	1·0787	1·847	·057	·243	86·05	2·83	2,328	4,303	+ 1·97	+ 2·13	+ 376
56, 160, 242	50 „ „	50	..	...	13,350	19·96	4·37	15·59	2·00	57·75	1·0808	1·918	·054	·232	87·00	3·56	1,872	3,606	- 1·66	- ·90	- 321
73, 159, 208	75 „ „	75	...	...	14,541	20·89	4·38	16·51	4·27	56·80	1·0778	1·806	·064	·253	85·06	3·56	1,955	3,529	- ·73	+ ·02	- 398
57, 158, 295	60 „ "nitrogen"	...	30	30	14,057	24·61	5·91	18·70	3·76	58·46	1·0778	1·816	·065	·243	85·52	3·02	2,270	4,115	+ 2·99	+ 2·21	+ 188
	100 „ phosphate, as basic slag ...	100	...	...																	
	100 „ potash	100	...	...																	

TABLE XVII. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.
Potash Sub-series II.
Mean results.

Farmyard manure, 27 tons.
Potash, as sulphate.
"Nitrogen," 60lb.—10lb. in Jan., 25lb. in June, 25lb. in Aug. or Sept.
Phosphate, as basic slag, 100lb. in January.

Numbers of plots.		Applied in 1902. January.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. $\frac{30^\circ C.}{16\cdot6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259 ...	No chemical manure, mean of 21 plots	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927	...	...	...
92, 179, 224 ...	No potash	...	17,081	23·53	4·97	18·56	·96	59·00	1·0776	1·807	·060	·253	85·07	3·30	2,280	4,108	+ 1·91	+ 2·07	+ 181
93, 180, 225 ...	25lb. potash	25	14,682	24·40	5·59	18·81	1·27	59·50	1·0798	1·875	·057	·247	86·06	3·04	2,330	4,384	+ 2·78	- 2·32	+ 457
91, 177, 189 ...	75 ,, ,, ...	75	14,198	22·89	4·71	18·18	5·56	57·50	1·0784	1·822	·059	·258	85·15	3·27	2,171	3,954	+ 1·27	+ 1·69	+ 27

TABLE XVIII. FOURSQUARE PLANTATION—JOHNNY KING FIELD.

PLANT CANES.
Nitrogen Sub-series.
Mean results.

Farmyard manure, 27 tons.

Numbers of Plots.		Applied in 1902. January.	Applied in 1902. June.	Applied in 1902. Aug. or Sept.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
2, 6, 10, 14, 18, 55, 58, 70, 110, 114, 118, 122, 126, 163, 166, 178, 234, 235, 238, 243, 259	No chemical manure, mean of 21 plots ...	...	...	...	13,285	21·62	5·13	16·49	1·46	59·83	1·0801	1·917	·058	·212	87·64	3·02	2,046	3,927			
62, 66, 226, 228, 255	60 lb. nitrogen, as sulphate of ammonia	...	40	20	14,251	22·64	5·00	17·64	1·20	59·05	1·0778	1·835	·065	·223	86·44	3·56	2,168	3,974	+ 1·02	+ 1·15	+47
63, 65	60 „ nitrogen, as sulphate of ammonia	...	40	20	14,726	22·15	4·82	17·33	3·19	58·90	1·0768	1·802	·065	·230	85·93	3·63	2,123	3,835	+ ·53	+ ·84	−92
223, 227, 246 ...	50 „ phosphate, as superphosphate ...	50	...	...																	
46, 82, 174	60 „ nitrogen, as sulphate of ammonia	...	40	20	13,867	22·59	5·67	16·93	3·05	58·90	1·0786	1·869	·060	·215	87·18	3·19	2,072	3,874	+ ·97	+ ·44	+53
210, 229	50 „ potash, as sulphate	50	...	...																	
28, 64	60 „ nitrogen, as sulphate of ammonia	...	40	20	14,072	22·46	5·96	17·50	5·28	59·80	1·0782	1·870	·060	·205	87·55	3·23	2,175	4,071	+ ·84	+ 1·01	+44
100	50 „ phosphate, as superphosphate ...	50	...	...																	
192, 230	50 „ potash, as sulphate	50	...	...																	

TABLE XIX. HOPEWELL PLANTATION—FLETCHER FIELD.

PLANT CANES.

Control Plots.

Farmyard manure, 40 tons.

Number of Plot.		Number of Canes per acre.	Weight in Tons per Acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Gluecose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
6	No chemical manure	13,257	20·11	4·73	15·38	2·01	63·00	1·0828	2·056	·045	·156	91·09	·219	2,004	4,120
19	" " "	13,366	20·36	4·96	15·40	1·67	62·50	1·0844	2·010	·041	·248	87·43	·204	1,988	3,996
...	mean...	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	·212	1,996	4,058

TABLE XX. HOPEWELL PLANTATION.—FLETCHER FIELD. PLANT CANES.

Nitrogen Sub-series.

Farmyard manure, 40 tons.
Nitrogen.
Phosphate, as superphosphate, 50lb. in January.
Potash, as sulphate, 50lb. in January.

Number of Plot.		Applied in 1902. January.	June.	August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
6, 19	No chemical manure ... mean	...	...	...	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	2·12	1,996	4,058			
1	No nitrogen	...	...	...	14,292	23·88	4·95	18·93	2·30	63·00	1·0831	2·046	·044	·173	90·41	2·15	2,466	5,045			
14 A	„ „	...	...	...	14,728	21·74	5·25	16·49	4·53	60·00	1·0802	1·973	·048	·166	90·21	2·43	2,052	4,049			
	mean	...	...	...	14,510	22·81	5·10	17·71	3·42	61·50	1·0817	2·010	·046	·170	90·31	2·29	2,259	4,547	+2·57	+2·32	+489
3	40lb. nitrogen, as sulphate of ammonia	...	40	...	14,592	26·47	5·72	20·75	2·90	62·00	1·0826	2·059	·043	·150	91·43	2·09	2,662	5,481			
18	40 „ „ „ „ „ „	...	40	...	15,717	23·93	5·45	18·48	2·04	59·50	1·0822	2·001	·042	·197	89·33	2·09	2,276	4,554			
	mean	...	...	...	15,155	25·20	5·59	19·62	2·47	60·75	1·0824	2·030	·043	·174	90·38	2·09	2,469	4,968	+4·96	+4·23	+910
7	60lb. nitrogen, as sulphate of ammonia	...	40	20	15,354	21·68	4·84	16·84	2·82	61·50	1·0769	1·934	·056	·110	92·10	2·90	2,155	4,168			
13 A	60 „ „ „ „ „ „	...	40	20	14,828	19·85	4·74	15·11	1·33	59·50	1·0809	1·960	·050	·195	88·89	2·55	1,863	3,651			
20	60 „ „ „ „ „ „	...	40	20	15,563	28·10	6·31	21·79	3·92	63·14	1·0811	1·976	·048	·187	89·37	2·48	2,850	5,632			
	mean	...	...	...	15,248	23·21	5·30	17·91	2·69	61·38	1·0796	1·957	·051	·164	90·12	2·63	2,289	4,484	+2·97	+2·52	+426
8	80lb. nitrogen, as sulphate of ammonia	...	40	40	14,991	20·62	5·24	15·38	1·49	60·25	1·0791	1·947	·051	·160	90·22	2·61	1,924	3,746			
25	80 „ „ „ „ „ „	...	40	40	16,928	27·06	5·78	21·28	5·54	60·00	1·0800	1·925	·056	·201	88·22	2·91	2,649	5,099			
	mean	...	...	...	15,960	23·84	5·51	18·33	3·52	60·13	1·0796	1·936	·054	·181	89·22	2·76	2,287	4,423	+3·60	+2·94	+365

TABLE XXI. HOPEWELL PLANTATION—FLETCHER FIELD.

PLANT CANES.
Nitrogen Sub-series.

Farmyard manure, 40 tons.
Nitrogen.
Phosphate, as superphosphate, 50 lb. in January.
Potash, as sulphate, 50 lb. in January.

Numbers of Plots.		Applied in 1902.			Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.	August.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
6, 19	No chemical manure ... ... mean	...	...	...	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	2·12	1,996	4,058			
9	80lb. nitrogen as sulphate of ammonia	...	40	40	15,036	18·66	4·56	14·10	2·65	59·00	1·0787	1·957	·051	·139	91·15	2·61	1,727	3,384			
23	80 „ „ „ „ „ „	...	40	40	16,072	28·89	6·70	22·19	3·12	62·56	1·0775	1·921	·043	·153	90·74	2·24	2,885	5,542			
	mean	...	..	...	15,554	23·78	5·63	18·15	2·89	60·78	1·0781	1·939	·047	·146	90·95	2·43	2,306	4,463	+3·54	+2·76	+405

TABLE XXII. HOPEWELL PLANTATION—FLETCHER FIELD. PLANT CANES. *Nitrogen Sub-series.*

Farmyard manure, 40 tons.
Nitrogen.
Phosphate, none.
Potash, none.

Numbers of Plots.		Applied in 1902.			Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		January.	June.	August.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16.6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose lb. per acre.
6, 19	No chemical manure ... ... mean	...	...	..	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	2·12	1,996	4,058			
4	60lb. nitrogen as sulphate of ammonia	...	40	20	15,409	23·76	5·66	18·10	1·85	61·50	1·0804	2·007	·050	·136	91·52	2·49	2,307	4,630			
15	60 „ „ „ „ „ „	...	40	20	14,873	25·60	6·06	19·54	2·90	62·91	1·0800	2·023	·048	·111	92·71	2·87	2,550	5,159			
	mean	...	...	...	15,141	24·68	5·86	18·82	2·38	62·21	1·0802	2·015	·049	·124	92·12	2·43	2,429	4,895	+4·44	+3·43	+837

PLANT CANES.

TABLE XXIII. HOPEWELL PLANTATION—FLETCHER FIELD. *Nitrogen Sub-series.* *Farmyard manure, 40 tons.*

Numbers of Plots.		Applied in 1902. January.	June.	August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose lb. per acre.
6, 19	No chemical manure ... mean	...	...	...	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	2·12	1,996	4,058	...		
11	80 lb. nitrogen, as sulphate of ammonia	...	40	40	14,219	24·47	5·99	18·48	1·82	61·50	1·0817	2·036	·046	·146	91·38	2·26	2,354	4,793	+4·23	+3·09	+735
	50 „ phosphate, as superphosphate ...	50	0	0																	
	50 „ potash, as sulphate	50	0	0																	

TABLE XXIV. HOPEWELL PLANTATION.—FLETCHER FIELD.

PLANT CANES.

Phosphate Sub-series.

Farmyard manure, 40 tons.
Phosphate.
Nitrogen, as sulphate of ammonia, 60lb.,—40lb. June, and 20lb. Aug
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Applied in 1902. January.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6°C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
6, 19	No chemical manure ... mean ..	...	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	2·12	1,996	4,058			
13	No phosphate	...	14,183	22·68	6·77	15·91	·45	61·00	1·0791	1·963	·050	·145	90·96	2·55	2,015	3,955			
21	" "	...	14,492	24·84	5·50	19·34	1·12	61·50	1·0822	1·985	·042	·213	88·62	2·12	2,462	4,887			
	mean...	...	14,338	23·76	6·14	17·63	·79	60·75	1·0807	1·974	·046	·179	89·79	2·34	2,239	4,421	+3·52	+2·24	+ 368
7	50 lb. phosphate as superphosphate ...	50	15,354	21·68	4·84	16·84	2·82	61·50	1·0769	1·934	·056	·110	92·10	2·90	2,155	4,168			
13 A	50 " " " " ...	50	14,828	19·85	4·74	15·11	1·33	59·50	1·0809	1·960	·050	·195	88·89	2·55	1,863	3,651			
20	50 " " " " ...	50	15,563	28·10	6·31	21·79	3·92	63·14	1·0811	1·976	·048	·187	89·37	2·43	2,850	5,632			
	mean...	...	15,248	23·21	5·30	17·91	2·69	61·38	1·0796	1·957	·051	·164	90·12	2·63	2,289	4,484	+2·97	+2·52	+ 426
12	100 lb. phosphate as superphosphate ...	100	14,964	25·41	6·24	19·17	2·60	62·25	1·0791	1·980	·049	·129	91·75	2·47	2,476	4,902			
24	100 " " " " ...	100	10,896	20·88	4·90	15·98	2·28	60·75	1·0822	2·001	·042	·197	89·33	2·09	2,011	4,024			
	mean...	...	12,930	23·15	5·57	17·58	2·44	61·50	1·0807	1·991	·046	·163	90·54	2·28	2,244	4,463	+2·91	+2·19	+ 405
10	100 lb. phosphate as basic slag	100	15,236	24·47	5·82	18·65	7·65	60·00	1·0795	1·997	·050	·123	92·03	2·50	2,322	4,637			
22	100 " " " " "	100	15,082	26·81	5·83	20·98	3·47	62·53	1·0828	2·040	·041	·177	90·35	2·01	2,714	5,537			
	mean...	...	15,159	25·64	5·83	19·82	5·56	61·27	1·0812	2·019	·046	·150	91·19	2·26	2,518	5,087	+5·40	+4·43	+1,029

TABLE XXV. HOPEWELL PLANTATION—FLETCHER FIELD. PLANT CANES. *Potash Sub-series.*

Farmyard manure, 40 tons.
Potash, as sulphate.
Nitrogen, as sulphate ammonia, 60lb.—40lb. June, 20lb. Aug.
Phosphate, as superphosphate, 50lb. January.

Numbers of Plots.		Applied in 1902. January.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
6, 19	No chemical manure mean...	...	13,312	20·24	4·85	15·39	1·84	62·75	1·0836	2·033	·043	·202	89·26	2·12	1,996	4,058			
5	No potash	...	17,070	26·67	6·64	20·03	1·52	61·75	1·0817	2·066	·046	·116	92·73	2·22	2,562	5,293			
17	" "	...	14,221	20·85	4·19	16·66	2·49	61·00	1·0806	1·970	·050	·179	89·59	2·54	2,107	4,151			
	mean...	...	15,646	23·76	5·42	18·35	2·01	61·38	1·0812	2·018	·048	·148	91·16	2·38	2,335	4,772	+3·52	+2·96	+ 714
7	50 lb. potash	50	15,354	21·68	4·84	16·84	2·82	61·50	1·0769	1·934	·056	·110	92·10	2·90	2,155	4,168			
13A	50 " "	50	14,828	19·85	4·74	15·11	1·33	59·50	1·0809	1·960	·050	·195	88·89	2·55	1,863	3,651			
20	50 " "	50	15,563	28·10	6·31	21·79	3·92	63·14	1·0811	1·976	·048	·187	89·37	2·43	2,850	5,632			
	mean...	...	15,248	23·21	5·30	17·91	2·69	61·38	1·0796	1·957	·051	·164	90·12	2·63	2,289	4,484	+2·97	+2·52	+ 426
2	100 " "	100	15,990	26·39	5·79	20·60	2·03	59·25	1·0822	2·054	·041	·145	91·69	2·00	2,527	5,191			
16	100 " "	100	14,374	25·41	5·43	19·98	3·00	60·86	1·0824	1·999	·041	·206	89·00	2·05	2,517	5,031			
	mean...	...	15,182	25·90	5·61	20·29	2·52	60·06	1·0823	2·027	·041	·176	90·35	2·03	2,522	5,111	+5·66	+4·90	+1,053

TABLE XXVI. HOPEWELL PLANTATION.—ASHFORD FIELD.

RATOONS.
Nitrogen Sub-series I.
Mean results.

Farmyard manure, 30 tons, 1900.
Nitrogen, 1901.
Phosphate, as basic slag, 100lb. in January 1901, and June 1902.
Potash, as sulphate, 50lb. in January 1901, and June 1902.

Numbers of Plots.		Applied in 1902.		Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		June.	August.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 40, 47, 76, 97, 127, 150, 155.	No chemical manure	...	...	12,553	11·29	3·60	7·69	1·20	56·78	1·0783	1·925	·061	·151	90·04	3·14	919	1,756			
2, 39, 45, 74, 94, 126, 149, 156.	No nitrogen	...	...	13,193	14·77	4·76	10·01	·38	57·79	1·0796	1·951	·060	·162	89·80	3·07	1,209	2,356	+ 3·48	+2·32	+ 600
3, 41, 46, 75, 96, 128, 144, 170.	50lb. "nitrogen"	30	20	17,665	18·76	4·38	14·39	·99	59·25	1·0803	1·983	·055	·153	90·51	2·77	1,773	3,529	+ 7·47	+6·70	+1,773
4, 38, 48, 77, 95, 129, 143, 171.	75 ,, ,, ...	42½	32½	16,733	20·54	4·79	15·75	2·59	59·80	1·0803	1·979	·061	·151	90·32	3·09	1,957	3,893	+ 9·25	+8·06	+2,137
5, 37, 49, 69, 89, 118, 142, 157.	100 ,, ,, ...	55	45	16,887	21·93	4·88	17·05	4·59	59·32	1·0771	1·885	·062	·158	89·52	3·31	2,110	3,989	+10·64	+9·36	+2,233
9, 33, 53, 72, 100, 114, 145, 169.	50 ,, ,, ...	25	25	15,551	18·71	4·63	14·08	1·25	59·82	1·0809	1·993	·055	·159	90·31	2·75	1,751	3,519	+ 7·42	+6·39	+1,763
10, 32, 54, 71, 101, 125, 151, 168.	50 ,, nitrogen, as sulphate of ammonia	25	25	15,412	18·35	4·47	13·88	2·21	59·77	1·0809	1·979	·053	·173	89·71	2·73	1,723	3,423	+ 7·06	+6·19	+1,667
11, 44, 55, 70, 102, 113, 152, 167.	50 ,, ,, ,, nitrate of soda ...	25	25	15,461	17·38	4·31	13·07	2·57	59·18	1·0809	1·997	·056	·154	90·46	2·82	1,608	3,222	+ 6·09	+5·38	+1,466

TABLE XXVII. HOPEWELL PLANTATION—ASHFORD FIELD.

RATOONS.

Nitrogen Sub-series II.

Mean results.

Farmyard manure, 30 tons 1900.

Number of Plots.		Applied in 1901. January.	Applied in 1901. June.	Applied in 1901. August.	Applied in 1902. June.	Applied in 1902. August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce, Tons per acre.	Difference by Manuring in. Canes, Tons per acre.	Difference by Manuring in. Saccharose, lb. per acre.
1, 40, 47, 76, 97, 127, 150, 155.	No chemical manure	...	...	...	...	...	12,553	11·29	3·60	7·69	1·20	56·78	1·0783	1·925	·061	·151	90·04	3·14	919	1,756			
8, 34, 52, 73, 99, 115, 147, 172.	50 lb. "nitrogen" only	10	20	20	30	20	15,234	17·33	4·47	12·86	·32	59·47	1·0791	1·924	·065	·169	89·16	3·38	1,589	3,064	+ 6·04	+ 5·17	+1,308
6, 36, 50, 68, 99, 117, 148, 158.	100 „ "nitrogen" ...	10	45	45	55	45																	
	200 „ phosphate as basic slag	200	...	...	200	...	16,991	22·39	4·62	17·77	3·50	59·98	1·0790	1·937	·058	·151	89·84	3·00	2,220	4,274	+11·10	+10·08	+2,518
	100 „ potash as sulphate	100	...	...	100	...																	
7, 35, 51, 67, 98, 116, 141, 173.	50 „ "nitrogen" ...	10	20	20	30	20																	
	100 „ phosphate as basic slag	100	...	...	...	...	15,987	19·22	4·60	14·93	1·20	60·85	1·0807	1·974	·057	·172	89·67	2·89	1,839	3,648	+ 7·93	+ 7·30	+1,892
	50 „ potash as sulphate	50	...	...	...	...																	

TABLE XXVIII. HOPEWELL PLANTATION—ASHFORD FIELD.

RATOONS.
Phosphate Sub-series.
Mean results.

Farmyard manure, 30 tons, 1900.
Phosphate, 1901.
"*Nitrogen*," 50lb.—10lb. Jan., 20lb. June, 20lb. Aug., 1901; 50lb.—30lb. June, 20lb. Aug., 1902.
Potash, as sulphate, 50lb. January 1901 and 1902.

Numbers of Plots.		Applied in 1902. January.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 40, 47, 76, 97, 127, 150, 155.	No chemical manure ...	...	12,553	11·29	3·60	7·69	1·20	56·78	1·0783	1·925	·061	·151	90·04	3·14	919	1,756			
12, 42, 56, 85, 103, 112, 113, 166.	No phosphate	...	14,964	18·00	4·29	13·71	·81	60·02	1·0825	2·049	·051	·150	91·04	2·51	1,710	3,509	+6·71	+6·02	+1,753
13, 43, 57, 84, 104, 111, 134, 165.	50lb. phosphate, as basic slag ...	50	16,174	20·16	4·79	15·37	1·79	60·07	1·0809	1·993	·056	·159	90·29	2·81	1,915	3,813	+8·87	+7·68	+2,057
8, 41, 46, 75, 96, 128, 144, 170.	100 „ „ „ „ „ ...	100	17,665	18·76	4·38	14·39	·99	59·25	1·0803	1·983	·055	·153	90·51	2·77	1,773	3,529	+7·47	+6·70	+1,773
14, 31, 58, 83, 105, 124, 135, 164.	150 „ „ „ „ „ ...	150	17,312	20·40	5·27	15·13	1·57	60·05	1·0822	2·019	·055	·168	90·15	2·63	1,888	3,813	+9·11	+7·44	+2,057
18, 26, 62, 79, 109, 120, 138, 160.	50 „ „ „ precipitated (Vi) phosphate	50	16,574	18·25	4·30	14·32	1·46	59·76	1·0809	2·017	·057	·128	91·52	2·82	1,717	3,479	+6·96	+6·63	+1,723
19, 27, 63, 78, 110, 119, 139, 159.	100 „ „ as precipitated (Vi) phosphate	100	19,570	20·68	5·90	14·78	1·79	59·78	1·0807	2·001	·058	·142	90·94	2·88	1,851	3,695	+9·39	+7·09	+1,939
15, 23, 59, 82, 106, 123, 146, 163.	50 „ „ „ superphosphate ...	50	16,210	19·34	4·96	14·38	1·71	59·98	1·0815	1·976	·053	·194	88·89	2·69	1,789	3,538	+8·05	+6·69	+1,782
25, 61, 80, 108, 121, 137, 161.	75 „ „ „ ...	75	17,984	20·36	4·33	16·03	1·61	59·93	1·0809	2·014	·052	·140	91·30	2·56	1,994	4,030	+9·07	+8·34	+2,274
16, 24, 60, 81, 107, 122, 136, 162.	50 „ „ „ „ ... 1,120 lime (slaked)	50	15,467	18·72	4·18	14·54	1·92	59·35	1·0807	1·997	·055	·149	90·74	2·59	1,793	3,590	+7·43	+6·85	+1,834

TABLE XXIX. HOPEWELL PLANTATION.—ASHFORD FIELD.

RATOONS.
Potash Sub-series.
Mean results.

Farmyard manure, 30 tons 1900.
Potash, as sulphate, 1901.
"*Nitrogen*," 50lb.—10lb. in Jan., 20lb. in June, 20lb. in Aug., 1901; 50lb.—30lb. in June, 20lb. in Aug. 1902.
Phosphate as basic slag 100lb. in Jan. 1901 & 1902.

Numbers of Plots.		Applied in 1902. January.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 40, 47, 76, 97, 127, 150, 155	No chemical manure ...	...	12,553	11·29	3·60	7·69	1·20	56·78	1·0783	1·925	·061	·151	90·04	3·14	919	1,756			
20, 28, 64, 88, 91, 130, 140	No potash	...	17,145	20·06	4·82	14·57	1·27	58·63	1·0792	1·950	·062	·149	90·25	3·20	1,851	3,462	+8·77	+6·88	+1,706
21, 29, 65, 87, 92, 131, 154	25 lb. potash	25	15,326	18·25	4·69	13·57	1·18	59·83	1·0802	1·971	·060	·157	90·06	3·05	1,691	3,343	+6·96	+5·88	+1,587
3, 41, 46, 76, 96, 128, 144, 170	50 „ „	50	17,665	18·76	4·38	14·39	·99	59·25	1·0803	1·983	·055	·153	90·51	2·77	1,773	3,529	+7·47	+6·70	+1,773
22, 30, 66, 86, 93, 132, 153	75 „ „	75	14,818	18·39	4·22	14·16	1·79	59·31	1·0808	1·981	·056	·167	89·88	2·77	1,728	3,444	+7·10	+6·47	+1,688

TABLE XXX. HOPEWELL PLANTATION—HOPPER FIELD.

2ND RATOONS.

Chemical Manure.

Mean results.

"*Nitrogen*," 50lb.—10lb. in Jany. / 20 „ „ June / 20 „ „ Aug. } 1900; 50lb.—30lb. in June / 20 „ „ Aug. } 1901 and 1902.

Phosphate, as basic slag, 100lb. in Jan. 1900; 100lb. in June 1901 and 1902.

Potash, as sulphate, 50lb. in Jan. 1900; 50lb. in June 1901 and 1902.

Numbers of Plots.		Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
			Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
9, 33, 70, 73 86, 110, 149, 131, 141.	Chemical manure, mean of 9 plots ...	19,014	20·36	4·65	15·71	·73	58·53	1·0828	2·048	·049	·161	88·47	2·40	1,908	3,909	+5·49	+4·95	+1,389

TABLE XXXI. HOPEWELL PLANTATION.—HOPPER FIELD.

2ND RATOONS.
Nitrogen Sub-series I.
(Minerals to plants and ratoons.)
Mean results.

Nitrogen, 1900.
Phosphate, as basic slag, 100lb. in Jan. 1900, June 1901 and June 1902.
Potash, as sulphate, 50lb. in Jan. 1900, June 1901 and 1902.

Numbers of Plots.		Applied in 1901 and 1902.		Number of Canes per acre.	Weight in Tons per acre.			Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in		
		June.	August.		Produce.	Cane Tops.	Canes.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.			Produce. Tons per acre.	Canes. Tons per acre.	Saccharose lb. per acre.
1, 7, 19, 13, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146	No chemical manure, mean of 23 plots ...	...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
10, 67, 116 ...	No nitrogen	...	...	14,916	14·16	4·54	9·61	...	54·77	1·0809	2·021	·059	·124	91·66	2·92	1,095	2,204	− ·71	− 1·15	− 316
2, 48, 99 ...	50 lb. "nitrogen"	30	20	18,272	20·06	4·64	15·42	1·01	58·32	1·0805	1·991	·058	·147	90·63	2·95	1,867	3,731	+ 5·19	+ 4·66	+1,211
4, 65, 101 ...	75 „ „	42½	32½	18,380	18·26	4·42	13·85	·81	58·75	1·0809	2·024	·052	·129	91·79	2·60	1,687	3,409	+ 3·39	+ 3·09	+ 889
21, 54, 108 ...	100 „ „	55	45	19,866	27·20	6·13	21·07	2·85	59·50	1·0792	1·980	·059	·137	90·95	3·01	2,617	5,205	+12·33	+10·31	+2,685
12, 75, 109 ...	65 „ „	32½	32½	18,009	21·56	5·28	16·28	1·04	59·77	1·0821	2·044	·049	·144	91·35	2·44	2,013	4,107	+ 6·79	+ 5·52	+1,587
31, 59, 127 ...	50 „ nitrogen as sulphate of ammonia ...	30	20	16,932	17·66	3·62	14·04	none	59·33	1·0827	2·046	·053	·156	90·70	2·61	1,738	3,612	+ 2·79	+ 3·28	+1,092
26, 68, 133 ...	75 „ „ „ „ ...	42½	32½	16,866	20·58	4·59	15·79	·25	58·95	1·0832	2·020	·052	·191	89·12	2·60	1,920	3,868	+ 5·51	+ 5·03	+1,348
32, 60, 132 ...	100 „ „ „ „ ...	55	45	17,268	21·75	6·23	15·52	none	59·59	1·0813	2·007	·056	·156	90·52	2·82	1,919	3,842	+ 6·88	+ 4·76	+1,322
28, 69, 138 ...	50 „ nitrogen as nitrate of soda ...	30	20	15,232	16·74	4·64	12·09	·48	57·84	1·0826	2·002	·052	·199	88·83	2·62	1,452	2,900	+ 1·87	+ 1·33	+ 380
34, 78, 137 ...	75 „ „ „ ...	42½	32½	17,508	18·96	4·30	14·66	·44	57·84	1·0799	1·972	·059	·150	90·46	2·99	1,757	3,466	+ 4·09	+ 3·90	+ 946
40, 87, 143 ...	100 „ „ „ ...	55	45	14,230	18·22	4·82	13·41	·66	58·08	1·0813	2·005	·054	·158	90·44	2·70	1,619	3,263	+ 3·35	+ 2·65	+ 743

TABLE XXXII. HOPEWELL PLANTATION—HOPPER FIELD.

2ND RATOONS.
Nitrogen Sub-series I.
(Minerals to plants only.)
Mean results.

Nitrogen 1900.
Phosphate, as basic slag 100lb. in January, 1900.
Potash, as sulphate, 50lb. in January, 1900.

Numbers of Plots.		Applied in 1901 & 1902. June.	Applied in 1901 & 1902. August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots	...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
3, 55, 95 ...	50 lb. "nitrogen"	30	20	13,724	15·03	3·58	11·45	·46	58·41	1·0799	1·992	·056	·133	91·28	2·87	1,387	2,779	+ ·16	+ ·69	+ 259
18, 83, 115 ...	75 ,, ,, ...	42½	32½	16,121	15·69	4·46	11·23	1·43	59·39	1·0816	2·008	·052	·165	90·24	2·62	1,388	2,764	+ ·82	+ ·47	+244
29, 92, 117 ...	100 ,, ,, ...	55	45	14,183	18·71	4·18	14·62	3·86	57·72	1·0789	1·938	·068	·148	89·87	3·57	1,762	3,892	+3·84	+3·86	+872

TABLE XXXIII. HOPEWELL PLANTATION—HOPPER FIELD.

2ND RATOONS.
Nitrogen Sub-series I.
(No minerals.)
Mean results.

"Nitrogen," 1900.
Phosphate, none.
Potash, none.

Numbers of Plots.		Applied in 1901 & 1902. June.	Applied in 1901 & 1902. August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots	...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
11, 52, 90	50 lb. "nitrogen"	30	20	15,389	13·29	3·70	9·59	1·32	57·29	1·0793	1·939	·064	·162	89·53	3·31	1,143	2,226	− 1·58	− 1·17	− 294
16, 53, 107	75 „ „	42½	32½	17,754	17·50	4·79	12·71	·88	57·54	1·0778	1·902	·063	·152	89·86	3·32	1,520	2,882	+ 2·63	+ 1·95	+ 362
24, 85, 124	100 „ „	55	45	16,824	19·75	5·09	14·66	·17	58·11	1·0816	1·988	·056	·182	89·32	2·81	1,778	3,564	+ 4·88	+ 3·90	+ 1,044

TABLE XXXIV. HOPEWELL PLANTATION—HOPPER FIELD.

2ND RATOONS.
Nitrogen Sub-series II.
(Minerals to plants and ratoons).
Mean results.

Farmyard manure, 1900.
Nitrogen, 1900.
Phosphate, as basic slag, 100lb. in Jan. 1900, June 1901, and June 1902.
Potash, as sulphate, 50lb. in Jan. 1900, June 1901, and June 1902.

Numbers of Plots.		Applied in 1901 and 1902. June.	Applied in 1901 and 1902. August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142 146 ...	No chemical manure, mean of 23 plots	...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
14, 76, 119 ...	No nitrogen	...	...	14,716	15·91	3·81	12·10	·66	58·75	1·0839	2·099	·043	·145	91·74	2·05	1,467	3,079	+1·04	+1·34	+ 559
5, 47, 104 ...	50 lb. "nitrogen"	30	20	18,753	20·79	5·14	15·65	2·12	59·22	1·0826	2·058	·049	·145	91·37	2·44	1,917	3,971	+5·92	+4·89	+1,451
8, 74, 105 ...	75 „ „	42½	32½	18,857	23·54	4·69	18·84	3·76	59·11	1·0836	2·084	·045	·150	91·42	2·19	2,298	4,790	+8·67	+8·08	+2,270
22, 58, 112 ...	100 „ „	55	45	18,677	23·34	5·13	18·22	2·14	59·33	1·0822	2·043	·048	·148	91·22	2·38	2,238	4,575	+8·47	+7·46	+2,055

TABLE XXXV. HOPEWELL PLANTATION.—HOPPER FIELD.

2ND RATOONS.
Nitrogen Sub-series II.
(Minerals to plants only.)
Mean results.

Farmyard manure, 1900
Nitrogen, 1900.
Phosphate, as basic slag 100lb. in January, 1900.
Potash, as sulphate, 50lb. in January.

Numbers of Plots.		Applied in 1901 and 1902. June.	Applied in 1901 and 1902. August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30°C./16·6°C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. lb per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146	No chemical manure, mean of 23 plots	...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
6, 64, 100 ...	50 lb. "nitrogen"	30	20	16,406	19·70	4·47	15·23	1·09	59·92	1·0825	2·050	·051	·146	91·23	2·51	1,881	3,866	+ 4·83	+ 4·47	+ 1,346
17, 84, 114 ...	75 „ „	42½	32½	18,072	22·65	5·37	17·28	2·52	59·16	1·0820	2·047	·050	·139	91·54	2·46	2,126	4,356	+ 7·78	+ 6·52	+ 1,836
30, 97, 120 ...	100 „ „	55	45	17,906	27·13	6·72	20·39	4·05	60·79	1·0835	2·061	·049	·164	90·59	2·40	2,571	5,303	+12·26	+ 9·63	+ 2,783

TABLE XXXVI. HOPEWELL PLANTATION.—HOPPER FIELD.

2ND RATOONS.
Nitrogen Sub-series II.
(No minerals.)
Mean results.

Farmyard manure 1900.
Nitrogen 1900.
Phosphate none.
Potash none.

Numbers of Plots.		Applied in 1901 & 1902. June.	Applied in 1901 & 1902. August.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Weight in Tons per acre. Cane Tops.	Weight in Tons per acre. Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose ℔ per acre.	Difference by Manuring in. Produce. Tons per acre.	Difference by Manuring in. Canes. Tons per acre.	Difference by Manuring in. Saccharose. ℔ per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots	...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
15, 56, 96 ...	50 ℔. "nitrogen"	30	20	17,318	17·93	4·13	13·85	·78	57·66	1·0829	2·052	·055	·151	90·85	2·69	1,653	3,394	+3·11	+3·09	+ 874
20, 57, 111 ...	75 „ „	42½	32½	17,935	20·48	4·93	15·54	·87	58·59	1·0319	2·049	·049	·133	91·81	2·40	1,889	3,860	+5·61	+4·78	+ 1,340
25, 91, 128 ...	100 „ „	55	45	17,296	23·24	5·05	18·19	2·92	60·07	1·0810	1·978	·058	·176	89·51	2·95	2,268	4,479	+8·87	+7·43	+ 1,959

TABLE XXXVII. HOPEWELL PLANTATION—HOPPER FIELD.

2ND RATOONS.

Phosphate Sub-series I.

Mean results.

Phosphate, 1900.
"*Nitrogen*," 50lb.—10lb. in Jan. / 20 „ „ June / 20 „ „ Aug. } 1900; 50lb.—30lb. June / 20 „ Aug. } 1901 and 1902.
Potash, as sulphate, 50lb. in Jan. 1900, June 1901, and June 1902.

Numbers of Plots.		Applied in 1901 & 1902. June.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots ...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
44, 71, 140 ...	No Phosphate	...	16,499	18·95	4·35	14·60	·24	56·74	1·0800	1·964	·065	·157	89·97	3·35	1,715	3,348	+4·08	+3·84	+ 828
45, 79, 136 ...	50lb. phosphate, as basic slag	50	15,972	18·85	4·31	14·53	·46	59·28	1·0826	2·054	·048	·146	91·32	2·37	1,782	3,660	+3·98	+3·77	+1,140
2, 48, 99... ...	100 „ „ „ „ „	100	18,271	20·06	4·64	15·41	1·01	58·32	1·0805	1·991	·058	·147	90·63	2·95	1,867	3,731	+5·19	+4·65	+1,211
39, 88, 130 ...	150 „ „ „ „ „	150	15,921	18·42	4·59	13·82	none	59·38	1·0849	2·080	·049	·187	89·93	2·35	1,695	3,526	+3·55	+3·06	+1,006
50, 62, 139 ...	25 „ „ „ superphosphate ...	25	16,194	16·29	4·09	12·19	none	57·66	1·0816	2·008	·052	·164	90·27	2·63	1,456	2,934	+1·42	+1·43	+ 414
43, 72, 144 ...	50 „ „ „ „	50	17,695	24·22	5·10	19·12	·25	58·90	1·0828	2·044	·045	·165	90·54	2·35	2,342	4,795	+9·35	+8·36	+2,275
49, 81, 145 ...	75 „ „ „ „	75	17,533	19·39	4·88	14·51	1·64	57·40	1·0821	2·024	·055	·159	87·09	2·71	1,723	3,487	+4·52	+3·75	+ 967

TABLE XXXVIII. HOPEWELL PLANTATION—HOPPER FIELD.

2ND RATOONS.

Phosphate Sub-series II.

Mean results.

Farmyard manure 1900.

Phosphate 1900.

"*Nitrogen*" 50lb.—10 lb. in Jan, 20 „ „ June, 20 „ „ Aug., 1900; 50lb.—30 lb. June, 20 „ Aug. 1901 & 1902.

Potash as sulphate, 50 „ „ Jan. 1900, June 1901, and June 1902.

Numbers of Plots.		Applied in 1901 & 1902. June.	Number of Canes per acre.	Weight in Tons per Acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
38, 80, 135 ...	No phosphate	...	16,607	20·48	4·82	15·66	2·06	59·26	1·0845	2·063	·049	·190	89·58	2·42	1,917	3,950	+5·61	+4·90	+ 1,430
5, 47, 104 ...	100 lb. phosphate as basic slag ...	100	18,753	20·79	5·14	15·65	2·19	59·21	1·0826	2·058	·049	·145	91·37	2·44	1,917	3,971	+5·92	+4·89	+ 1,451

TABLE XXXIX. HOPEWELL PLANTATION.—HOPPER FIELD.

2ND RATOONS.

Potash Sub-series I.

Mean results.

Potash, as sulphate, 1900.
"*Nitrogen*" 50lb.—10lb. Jan., 20 „ June, 20 „ Aug. 1900; 50lb.—30lb. in June, 20 „ „ Aug. 1901 and 1902.
Phosphate as basic slag, 100lb. in Jan. 1900, June 1901, and June 1902.

Numbers of Plots.		Applied in 1901 & 1902. June.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146.	No chemical manure, mean of 23 plots...	...	14,832	14·87	4·11	10·76	·25	57·23	1·0795	1·956	·061	·159	89·95	3·15	1,284	2,520			
42, 98, 121... ...	No potash	...	15,460	14·44	5·99	10·44	·25	58·70	1·0819	1·961	·053	·214	87·85	2·74	1,275	2,516	− ·43	− ·32	− 4
41, 94, 118... ...	25lb. potash.	25	15,750	17·32	4·43	12·89	·79	57·75	1·0826	2·059	·046	·144	91·51	2·28	1,541	3,162	+2·45	+2·13	+ 642
2, 43, 99... ...	50 „ „	50	18,271	20·06	4·64	15·42	1·01	58·31	1·0805	1·991	·058	·147	90·66	2·98	1,867	3,731	+5·19	+4·66	+1,211
35, 103, 125 ...	75 „ „	75	18,242	22·63	5·14	17·54	·57	60·18	1·0837	2·093	·048	·140	91·75	2·29	2,185	4,580	+7·81	+6·78	+2,060

TABLE XL. HOPEWELL PLANTATION.—HOPPER FIELD.

2ND RATOONS.

Potash Sub-series II.

Mean results.

Farmyard manure, 1900.

Potash, as sulphate, 1900.

"*Nitrogen*," 50 lb.—10 lb. Jan., 20 „ June, 20 „ Aug., 1900; 50 lb.—30 lb. June, 20 „ Aug., 1901 and 1902.

Phosphate, as basic slag, 100 lb. in Jan. 1900; June 1901 and June 1902.

Numbers of Plots.		Applied in 1901 & 1902. June.	Number of Canes per acre.	Weight in Tons per acre. Produce.	Cane Tops.	Canes.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference by Manuring in. Produce. Tons per acre.	Canes. Tons per acre.	Saccharose. lb. per acre.
1, 7, 13, 19, 23, 27, 37, 46, 51, 61, 63, 66, 77, 82, 89, 102, 106, 113, 123, 126, 134, 142, 146	No chemical manure, mean of 23 plots	...	14,832	14·87	4·11	10·76	·25	57·23	1·0797	1·956	·061	·159	89·95	3·15	1,284	2,520			
36, 93, 122 ...	No potash	...	19,013	21·75	5·12	16·62	·21	58·58	1·0838	2·097	·040	·145	91·89	1·94	2,018	4,226	+6·83	+5·86	+1,706
5, 47, 104 ...	50 lb. potash	50	18,753	20·79	5·14	15·65	2·12	59·22	1·0826	2·057	·049	·145	91·37	2·44	1,917	3,971	+5·92	+4·89	+1,451

TABLE XLI. HAMPTON PLANTATION.—BEAN FIELD.

PLANT CANES.

Nitrogen Series.

Farmyard manure, 37½ tons.
50lb. *phosphate*, as superphosphate.
50lb. *potash*, as sulphate.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on no nitrogen. Canes. Tons per acre.	Saccharose. lb. per acre.
No Nitrogen .. ... (White Trans.) ...	15·60	51·23	1·0721	1·693	·069	·211	85·81	4·08	1,670	2,827		
40lb. nitrogen, as sulphate of ammonia " ...	23·15	52·09	1·0734	1·703	·069	·235	84·85	4·05	2,560	4,360	+ 7·55	+ 1,533
" " " " " ...	17·59	50·78	1·0729	1·722	·064	·209	86·32	3·72	1,865	3,212	+ 1·99	+ 385
Mean...	20·37	51·43	1·0732	1·713	·067	·222	85·59	3·89	2,213	3,786	+ 4·77	+ 959
50lb. nitrogen, as sulphate of ammonia " ...	23·27	53·14	1·0729	1·709	·069	·217	85·66	4·04	2,582	4,413	+ 7·67	+ 1,586
" " " " " ...	17·13	53·37	1·0721	1·725	·069	·179	87·43	4·00	1,910	3,295	+ 1·53	+ 468
" " " " " ...	20·50	52·83	1·0721	1·693	·068	·212	85·81	4·02	2,263	3,831	+ 4·90	+ 1,004
Mean...	20·30	53·11	1·0724	1·709	·069	·203	86·30	4·02	2,252	3,846	+ 4·70	+ 1,019
60lb. nitrogen, as sulphate of ammonia " ...	25·76	55·93	1·0712	1·655	·070	·225	84·87	4·23	2,779	4,599	+ 8·16	+ 1,772
" " " " " ...	17·59	49·08	1·0725	1·722	·069	·193	86·79	4·01	1,803	3,105	+ 1·99	+ 278
Mean...	20·68	52·50	1·0719	1·689	·070	·209	85·83	4·12	2,291	3,852	+ 5·08	+ 1,025

TABLE XLII. RUSHY PARK PLANTATION—BURNT GROUND FIELD.

PLANT CANES. *Phosphate Series.*

{50lb. *nitrogen*, as sulphate of ammonia. 50lb. *Potash*, as sulphate.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on No Phosphate. Canes. Tons per acre.	Saccharose. lb. per acre.
No phosphate ... . (Mount Blanc)	17·83	54·33	1·0817	1·981	·050	·197	88·91	2·52	2,006	3,974		
" "	20·18	53·30	1·0804	1·968	·062	·163	89·74	3·15	2,230	4,389		
mean...	19·01	53·81	1·0811	1·975	·056	·180	89·33	2.84	2,118	4,182		
50lb. phosphate, as basic slag ... ... "	18·58	53·87	1·0800	1·949	·083	·150	89·32	4·26	2,076	4,046	— ·43	— 136
" " " " "	17·72	53·40	1·0809	2·006	·063	·136	90·98	3·14	1,966	3,944	—1·29	— 238
mean...	18·15	53·63	1·0805	1·978	·073	·143	90·15	3·70	2,021	3,995	— ·86	— 187

TABLE XLIII. BUSHY PARK PLANTATION.—WATER FIELD. PLANT CANES. *Phosphate Series.* {50lb. *nitrogen*, as sulphate of ammonia. {50lb. *potash*, as sulphate.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on no phosphate. Canes. Tons per acre.	Saccharose. lb. per acre.
No phosphate ... ... (Rappoe)	17·49	53·73	1·0769	1·853	·056	·191	88·24	3·02	1,950	3,613		
50lb. phosphate, as basic slag ... ... "	16·19	54·88	1·0782	1·917	·054	·164	89·79	2·82	1,846	3,539	— 1·30	— 74
" " " " " ... ... "	17·22	54·37	1·0778	1·840	·057	·226	86·67	3·10	1,946	3,581	— ·27	— 32
mean ..	16·71	54·63	1·0780	1·879	·056	·195	88·23	2·96	1,896	3,560	— ·78	— 53

TABLE XLIV. RUBY PLANTATION.—EDGE HILL FIELD.

PLANT CANES.

Phosphate Series.

Farmyard manure, 40 tons.
40lb. *nitrogen*, as sulphate of ammonia.
50lb. *potash*, as sulphate.

		Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on no Phosphate. Canes. Tons per acre.	Saccharose. lb. per acre.
No phosphate	B 147 ...	16·67	73·58	1·0778	1·810	·062	·251	85·26	3·43	2,549	4,614		
"	" ...	20·44	70·50	1·0751	1·759	·079	·215	85·68	4·49	3,002	5,281		
	" Mean ...	18·56	72·04	1·0765	1·785	·071	·233	85·97	3·96	2,776	4,948		
50lb. phosphate, as basic slag ...	" ...	20·02	67·54	1·0760	1·772	·068	·237	85·32	3·84	2,815	4,988	+ 1·46	+ 40
" " " ...	" ...	18·38	79·24	1·0778	1·829	·054	·240	86·15	2·95	3,027	5,536	− ·18	+ 588
	" Mean .	19·20	73·39	1·0769	1·801	·061	·239	85·74	3·40	2,921	5,262	+ ·64	+ 314

TABLE XLV. RUBY PLANTATION—GARNES FIELD. PLANT CANES.

Phosphate Series.

Farmyard manure, 30 tons.
40 lb. *nitrogen*, as sulphate of ammonia.
50 lb. *potash*, as sulphate.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on no Phosphate. Canes. Tons per acre.	Saccharose. lb. per acre.
No phosphate ... ... (White Transparent) ...	14·39	55·87	1·0817	1·997	·069	·162	89·63	3·46	1,665	3,325		
" " ... ... " ...	17·65	59·52	1·0809	1·997	·063	·145	90·57	3·15	2,177	4,347		
Mean..	16·02	57·69	1·0813	1·997	·066	·154	90·10	3·31	1,921	3,836		
100 lb. phosphate, as basic slag " ..	18·26	53·07	1·0817	2·006	·069	·153	90·04	3·44	2,007	4,026	+ 2·24	+ 190
40 " nitrogen, as sulphate of ammonia; 100 " phosphate, as basic slag; 100 " potash, as sulphate " ...	15·01	60·37	1·0826	2·036	·056	·160	90·41	2·75	1,875	3,818	− 1·01	− 18

TABLE XLVI. RUBY PLANTATION.—UPPER PORCH DOOR FIELD.

PLANT CANES.

Phosphate Series.

Farmyard manure.
40lb. *nitrogen*, as sulphate of ammonia.
50lb. *potash*, as sulphate.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. $\frac{30°C.}{16·6°C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on no phosphate. Canes. Tons per acre.	Saccharose lb. per acre.
No phosphate ... ... (B 147) ...	15·68	70·53	1·0817	1·955	·056	·217	87·75	2·86	2,290	4,477		
40lb. phosphate, as superphosphate " ...	16·99	64·59	1·0809	1·941	·058	·206	88·03	2·99	2,274	4,414	+ 1·31	— 63
40lb. " " " " ...	17·43	60·63	1·0804	1·902	·063	·228	86·73	3·31	2,191	4,167	+ 1·75	— 310
mean ...	17·21	62·61	1·0807	1·922	·061	·217	87·38	3·15	2,233	4,291	+ 1·53	— 186
50lb. phosphate, as superphosphate " ...	18·40	65·24	1·0787	1·882	·060	·205	87·66	3·19	2,492	4,690	+ 2·72	+ 213

TABLE XLVII. RUBY PLANTATION.—MARSHALL FIELD.

PLANT CANES. *Potash Series.*

Farmyard manure, 40 tons.
40lb. *nitrogen*, as sulphate of ammonia.
50lb. *phosphate*, as superphosphate.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.	Difference on no Potash. Canes. Tons per acre.	Saccharose lb. per acre.
No potash ... ... (White Transparent)	13·48	62·60	1·0809	1·915	·065	·225	86·85	3·39	1,749	3,349		
100lb. potash, as sulphate ... "	15·71	65·36	1·0800	1·917	...	...	87·86	...	2,130	4,083	+ 2·23	+ 734
200 " " " " ... ... "	15·82	46·67	1·0831	1·999	·054	·210	88·33	2·70	1,526	3,050	+ 2·34	− 299
200 " " " " ... ... "	18·82	56·69	1·0800	1·929	·068	·185	88·41	3·53	2,213	4,269	+ 5·34	+ 920
mean...	17·32	51·65	1·0816	1·964	·056	·198	88·37	3·12	1,870	3,660	+ 3·84	+ 311

TABLE XLVIII. RUBY PLANTATION—UPPER BURNHAM FIELD. *Experiments with manures.* *Farmyard manure,* 40 tons.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
40 lb. nitrogen, as sulphate of ammonia; 50 „ potash, as sulphate (White Transparent)	20·07	64·97	1·0817	1·931	·057	·240	86·67	2·95	2,700	5,214
40 „ nitrogen, as sulphate of ammonia; 50 „ potash, as sulphate	20·54	68·74	1·0831	1·983	·063	·217	87·63	3·18	2,920	5,790
Mean ..	20·31	66·85	1·0824	1·957	·060	·229	87·15	3·07	2,810	5,502
40 „ nitrogen, as sulphate of ammonia; 100 „ phosphate, as Vi phosphate	22·25	60·29	1·0839	2·046	·054	·187	89·46	2·64	2,763	5,653
40 „ nitrogen, as sulphate of ammonia; 100 „ phosphate, as Vi phosphate; 50 „ potash, as sulphate	18·53	62·15	1·0839	2·001	·055	·231	87·49	2·75	2,380	4,762

TABLE XLIX. BLOWERS PLANTATION—SOUTH MOONSHINE FIELD.

1ST RATOONS.

Experiments with manures.

Farmyard manure to plants.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
96 lb. nitrogen, as sulphate of ammonia (White Transparent)	22·02	54·12	1·0694	1·635	·086	·183	85·87	5·26	2,496	4,081
80 „ nitrogen, as sulphate of ammonia 14 „ nitrogen, as nitrate of potash 46 „ potash, as nitrate of potash „	22·89	54·86	1·0696	1·657	·094	·147	87·30	5·67	2,630	4,358
80 „ nitrogen, as sulphate of ammonia 14 „ nitrogen, as nitrate of potash 40 „ phosphate, as superphosphate 46 „ potash, as nitrate of potash „	23·74	55·53	1·0696	1·644	·085	·180	86·12	5·16	2,761	4,539
96 „ nitrogen, as sulphate of ammonia 40 „ phosphate, as superphosphate 50 „ potash, as sulphate	22·97	54·00	1·0699	1·631	·083	·201	85·17	5·09	2,597	4,236

TABLE L. BLOWERS PLANTATION.—NORTH MOONSHINE FIELD. 1ST RATOONS. *Farmyard manure* to plants.

Experiments with manures.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
96lb. nitrogen, as sulphate of ammonia ... ... (White Transparent.)	19·26	52·42	1·0649	1·484	·102	·203	82·95	6·87	2,124	3,152
80 „ nitrogen, as sulphate of ammonia 14 „ nitrogen, as nitrate of potash 46 „ potash, as nitrate of potash ... .. „ ..	19·55	49·63	1·0687	1·644	·083	·159	87·17	5·05	2,034	3,344
80 „ nitrogen, as sulphate of ammonia 14 „ nitrogen, as nitrate of potash 40 „ phosphate, as superphosphate 46 „ potash, as nitrate of potash ... ... „ ...	19·85	52·54	1·0662	1·533	·096	·194	84·09	6·26	2,191	3,359
96 „ nitrogen, as sulphate of ammonia 40 „ phosphate, as superphosphate 50 „ potash, as sulphate ... ... „ ...	21·06	51·94	1·0682	1·612	·088	·174	86·02	5·46	2,294	3,698

TABLE LI. HAMPTON PLANTATION.—DRINK WATER FIELD. TILLAGE EXPERIMENTS. *Farmyard manure* 35 tons.

	Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose ℔. per acre.
(White Transparent)	16·95	54·50	1·0778	1·873	·063	·187	88·22	3·36	1,920	3,596
"	14·55	53·58	1·0773	1·876	·046	·190	88·83	2·45	1,621	3,041
mean ...	15·75	54·04	1·0776	1·875	·055	·189	88·53	2·91	1,771	3,319
"	16·63	50·82	1·0780	1·891	·060	·178	88·82	3·17	1,756	3,321
"	14·54	50·59	1·0791	1·944	·045	·169	90·08	2·32	1,527	2,968
mean ...	15·59	50·70	1·0786	1·918	·053	·174	89·45	2·75	1,642	3,145
"	14·73	50·49	1·0782	1·861	·060	·214	87·17	3·22	1,545	2,875
"	15·15	51·17	1·0800	1·914	·044	·224	87·72	2·30	1,608	3,078
mean ...	14·94	50·83	1·0791	1·888	·052	·219	87·45	2·76	1,577	2,977
"	13·46	53·29	1·0791	1·891	·053	·214	87·63	2·80	1,491	2,819
"	12·94	48·29	1·0800	1·950	·042	·190	89·37	2·15	1,296	2,527
mean ...	13·20	50·79	1·0796	1·921	·048	·202	88·50	2·48	1,394	2,673
"	13·21	54·10	1·0773	1·835	·049	·228	86·88	2·67	1,486	2,727
"	15·18	52·38	1·0800	1·923	·037	·222	88·13	1·92	1,649	3,171
mean ...	14·20	53·24	1·0787	1·879	·043	·225	87·51	2·30	1,568	2,949

PART III.

EXPERIMENTS WITH SEEDLING AND OTHER VARIETIES OF CANES.

Tables LII and LIII give the rainfall and some other particulars about each of the experimental Stations.

Tables LIV—LXXIV give the results of the reaping, crushing and juice analyses of all the seedlings and other varieties reaped at the central experimental stations during 1903.

Tables LXXV—LXXXII give the mean results of the experiments on selected seedlings, plants and ratoons, at the local experimental stations, on red and black soils.

Table LXXXIV gives the mean results of analyses of a large number of estate samples of juice analysed at the Government laboratory.

Table LXXXIII gives some factory results in the case of experimental plantings of canes of one acre and upwards in area. The juice was all measured in the boiling house, an average sample analysed at the Government laboratory, and the results calculated to the acre.

The following summary contains a short account of the most important of the results of the last year's experiments upon selected seedlings and other canes in Barbados, *grown under the ordinary conditions existing upon the estates where they were cultivated.*

The selected varieties were cultivated at nine estates situated in different typical localities, eight being black soil estates and one red soil estate. At the red soil estate and at three black soil estates first ratoons were included among the plots. In nearly every field, the seedlings grown upon it were arranged in duplicate plots. The actual number of plots of any variety is indicated both in the body of the report and in the tables appended.

Each plot consisted of 100 stools of canes arranged in four rows of 25 stools. With but few exceptions, 30 stools were cut from the inner two rows weighed and sampled. By recording the results of the inner rows only, the effects of one variety upon the growth of another and less vigorous variety were eliminated.

From the 30 stools above mentioned, a sample of about 105 pounds weight was taken by the mechanical method proposed by one of us in a paper published in the *West Indian Bulletin*, Vol. i., page 28. Of this sample 100 pounds was crushed in the laboratory mill, the juice and megass weighed, and the juice analysed, from which data the results were calculated to the acre.

That the method employed for sampling is an accurate one is shown by the results of an experiment published in our Report of the Agricultural work for 1900, page 13.

The laboratory mill is a three roller mill, the rollers being 18 inches long and of 12 inches diameter: it is driven by an 8½ horse power oil engine.

The quotient of purity and the glucose ratio of a sample of juice influence greatly the recovery of marketable sugar. With the high quotient of purity and low glucose ratio common in the juice of the best varieties of West Indian sugar cane, it is possible on well worked muscovado estates with steam pan and filter press to recover 80 per cent. of the weight of the saccharose as marketable muscovado. The recovery is less if the purity is lower and the glucose ratio higher, as they are in immature canes or in mature canes of some varieties. According to the Hon. F. Watts, if the glucose ratio reaches 6 per cent. the sugar produced is soft and generally indifferent in quality. Under these circumstances it is difficult in the muscovado process to obtain a formation of crystals of sufficient size to enable the sugar to part with its molasses; the result is a sugar of low polariscope test.

SEEDLING CHARACTERS.

The following are the more important field and factory characters, a consideration of which goes to determine the value of any variety of cane.

Field characters:

1. Germinative power.
2. Behaviour under extremes of dryness and moisture.
3. Habit; that is, whether upright or recumbent.
4. Power of resisting the attacks of insects and fungi.
5. Period of growth.
6. Productive power in tons of canes.
7. Tonnage of tops.
8. Ratooning power.

Factory characters:

9. Milling quality; that is, whether the canes are tough or brittle.
10. Fuel producing property; depending upon the percentage of fibre.
11. The relative percentage of expressible juice (determining the "dryness" or "juiciness" of the canes).
12. The richness of the juice.
13. Purity of the juice.

List of Stations

Showing the nature of the soil, height above sea level, and the total rainfall during the growth of the crop.

Black soil estates.

Coverley—Height above sea level, 254 feet. Rainfall, 66·20 inches. Fields, "Merebah," "Middle Caminus" and "Old Well."
Dodds—Height above sea level, 210 feet. Rainfall, 73·50 inches. Fields, "Cat Hole," "Harrow," "House," Upper Chapel," "Upper Nightengale," "Pilgrim," "Lower Padmore," "Summervale" and "Upper Bay Tree."
Hampton—Height above sea level, 103 feet. Rainfall, 70·44 inches. Field, "Twelve Acre."
Husbands—Height above sea level, 184 feet. Rainfall, 68·27 inches. Field, "Four Acre."
Oughterson—Height above sea level, 291 feet. Rainfall, 67·98 inches. Field, "Macaroni."
Pine—Height above sea level, 100 feet. Rainfall, 60·27 inches. Field, "Nine Acre."
Sunbury—Height above sea level, 160 feet. Rainfall, 63·30 inches. Field, "Dodds."
Waterford—Height above sea level, 186 feet. Rainfall, 62·52 inches. Fields, "Burnt" "Dixon" and "Sandy."

Red soil estate.

Henley—Height above sea level, 553 feet. Rainfall, 88·16 inches. Fields, "Above Todd" and "Long."

List of Varieties Cultivated, Giving Their More General Field Characters, Together with the More Important Agricultural and Chemical Results for the Crop.

The opinions expressed with regard to the value of any variety, either as to its suitability for muscovado manufacture or as a ratooning cane, unless distinctly otherwise stated, must be taken only to apply to the result of the year under review. We may here repeat what we stated on page 22 of the pamphlet on Seedling and other Canes at Barbados, 1900: "It is impossible to draw more than temporary conclusions from one year's work."

In regard to field characters, it should be borne in mind that sugar canes under favourable conditions present such very different appearances from those grown during drought or in thin unfertile soil that it is dificult to give what would appear to every one an accurate description.

Jamaica or Mont Blanc Cane.

Of such close resemblance to the White Transparent as to be practically undistinguishable; and as that cane is so well known it is not described.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, ratoons, (mean of 4 plots) ...	9·47	2,014	4
Red soil, ratoons, (mean of 2 plots) ...	19·24	4,624	1

The juice was fairly rich and pure and suitable for muscovado manufacture. The number of rotten canes was small. The ratoon results on red soil were good.

Experimental samples of juice—results of 6 samples.

Saccharose lb. per gallon.—Highest 2·147, lowest 1·686, mean 1·890.
Quotient of purity.—Highest 92·68, Lowest 84·01, mean 89·64.
Glucose ratio.—Highest 4·09, lowest 1·86, mean 3·07.

Rock Hall Cane.

Germinating power somewhat under the average; from 9 to 16 canes to the clump; internodes from 4 to 6 inches long and slightly tumid; colour yellow; habit recumbent; few arrows; the dry leaves part easily from the cane, but as the canes often trail the leaves remain attached; suffers somewhat in dry situations.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, ratoons, (mean of 4 plots) ...	4·83	1,058	9
Red soil, ratoons, (mean of 2 plots) ...	15·88	3,694	9

Experimentally cultivated only as ratoons. The juice in some cases was unfavourable for muscovado manufacture. The number of rotten canes (in ratoons) was small. The comparative ratoon results were unsatisfactory.

Experimental samples of juice—results of 6 samples.

Saccharose lb. per gallon.—Highest 1·981, lowest 1·565, mean 1·787.
Quotient of purity.—Highest 90·13, lowest 84·28, mean 85·64.
Glucose ratio.—Highest 6·01, lowest 1·92, mean 3·79.

Estate samples of juice—results of 2 samples.

Saccharose lb. per gallon.—Highest 1·968, lowest 1·785, mean 1·877.
Quotient of purity.—Highest 90·19, lowest 86·95, mean 88·57.
Glucose ratio.—Highest 4·37, lowest 3·40, mean 3·89.

SEALY SEEDLING CANE.

Of fairly good germinating power; from 10 to 14 rather slender canes to the clump; internodes slightly constricted, from 4 to 6 inches long; colour dirty yellow, often blotched with red, particularly if exposed to much sunshine; habit upright; few arrows; drought resisting.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield).
Black soils, plants, (mean of 2 plots) ...	20·23	4,613	7
Red soil, plants, (mean of 2 plots) ...	26·66	5,431	2
Red soil, ratoons, (mean of 2 plots) ...	19·07	4,172	4

The juice was unfavourable for muscovado manufacture. The number of rotten canes was a small average number. The results on black soil are poor, but on red soil are good. The quality of the juice, as well as its doubtful milling properties, render it improbable that this otherwise promising variety can be adopted for muscovado estates.

Experimental samples of juice—results of 6 samples.

Saccharose lb. per gallon.—Highest 1·842, lowest 1·578, mean 1·731.
Quotient of purity.—Highest 85·11, lowest 74·33, mean 81·86.
Glucose ratio.—Highest 6·34, lowest 2·39, mean 4·84.

Estate samples of juice—results of 5 samples.

Saccharose lb. per gallon.—Highest 1·968, lowest 1·767, mean 1·884.
Quotient of purity.—Highest 90·19, lowest 83·25, mean 87·53.
Glucose ratio.—Highest 3·57, lowest 2·54, mean 3·10.

WHITE TRANSPARENT CANE.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield).
Black soils, plants, (mean of 18 plots) ...	21·10	5,172	5
Black soils, ratoons, (mean of 9 plots) ...	11·22	2,602	2
Red soil, plants, (mean of 2 plots) ...	15·31	3,687	8
Red soil, ratoons, (mean of 2 plots) ...	10·95	2,518	10

The juice was fairly rich and pure. The number of rotten canes was above the average. The results on the black soils were good; those on the red soil estate were unsatisfactory.

Experimental samples of juice—results of 31 samples.

Saccharose lb. per gallon.—Highest 2·240, lowest 1·686, mean 1·957.
Quotient of purity.—Highest 92·93, lowest 84·01, mean 89·37.
Glucose ratio.—Highest 4·58, lowest 1·70, mean 3·11.

Estate samples of juice—results of 50 samples.

Saccharose lb. per gallon.—Highest 2·005, lowest 1·437, mean 1·818.
Quotient of purity.—Highest 91·38, lowest 78·45, mean 87·69.
Glucose ratio.—Highest 7·72, lowest 2·48, mean 3·76.

B. 147 CANE.

A delicate slow-growing cane when young and one which does not appear to germinate freely when planted late in the season; from 11 to 12 canes to the clump; of a bright yellow colour, with long cylindrical internodes of about 4 to 8 inches long, having a slight longitudinal channel on the side to which the bud is attached; very rarely arrows; there is a tendency for the sheaths of the fallen leaves to remain attached to the lower half of

the cane until towards the close of the year, and for this reason the sleeping roots of the nodes begin to start into life; these however dry on being exposed, as the leaves fall. It is on the whole a hardy, vigorous, upright grower with considerable power for resisting periods of drought. A late ripener.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 18 plots)	22·53	5,269	4
Black soils, ratoons, (mean of 7 plots)	11·65	2,637	1
Red soil, plants, (mean of 2 plots) ...	16·26	3,828	7
Red soil, ratoons, (mean of 2 plots) ...	5·74	1,293	12

The saccharose yield of this cane was, in black soil plants and ratoons, and red soil plants, approximately equal to the White Transparent, being immediately above that variety in order in each of the corresponding tables. The red soil ratoon results were unsatisfactory. The juice in most cases was fairly rich and sufficiently pure for muscovado manufacture. The number of rotten canes was small.

Experimental samples of juice—results of 29 samples.

Saccharose lb. per gallon—Highest 2·049, lowest 1·557, mean 1·835.
Quotient of purity—Highest 92·42, lowest 82·83, mean 87·04.
Glucose ratio—Highest 6·00, lowest 2·14, mean 3·65.

Estate samples of juice—results of 30 samples.

Saccharose lb. per gallon—Highest 1·989, lowest 1·409, mean 1·795.
Quotient of purity—Highest 91·66, lowest 81·35, mean 86·74.
Glucose ratio—Highest 7·10, lowest 2·24, mean 4·14.

B 208 Cane.

Germinates readily; from 10 to 15 canes to the clump; internodes from 3 to 5 inches long, somewhat cylindrical; colour greenish yellow; habit upright; average number of arrows; the dry leaves have a tendency to adhere; drought resisting.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 8 plots) ...	20·38	5,329	2
Black soils, ratoons, (mean of 6 plots) ...	7·68	1,751	5
Red soil, plants, (mean of 2 plots) ...	19·96	5,443	1
Red soil, ratoons, (mean of 2 plots) ...	14·98	3,973	5

The juice was exceedingly rich and pure. The number of rotten canes was very small. The yield of saccharose from plant canes on the average of all the plots was slightly greater than any other variety. The black soil ratoons were not so good. In red soil, both plants and ratoons, the results were good. Altogether this cane comes out experimentally as the best of the year.

Experimental samples of juice—results of 18 samples.

Saccharose lb. per gallon.—Highest 2·347, lowest 1·939, mean 2·127.
Quotient of purity.—Highest 92·55, lowest 87·85, mean 90·55.
Glucose Ratio.—Highest 4·28, lowest 1·45, mean 2·06.

Estate samples of juice—results of 44 samples.

Saccharose lb. per gallon.—Highest 2·247, lowest 1·646, mean 2·043.
Quotient of purity.—Highest 95·22, lowest 83·71, mean 90·03.
Glucose ratio.—Highest 5·05, lowest 1·67, mean 2·68.

B. 254 Cane.

Of average germinating power; 11 to 12 canes to the clump; internodes from 3 to 5 inches long, slightly tumid; colour greenish yellow; habit somewhat recumbent; few arrows; drops its leaves readily; suffers from drought when young, the end portions of the leaves becoming quite dry.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Red soil, ratoons, (mean of 2 plots)	9·59	2,046	11

This cane which is being abandoned as a selected variety was unsatisfactory as red soil ratoons, that being the only remaining trial accorded the variety.

Experimental samples of juice—results of 2 samples.

Saccharose lb. per gallon.—Highest 1·750, lowest 1·638, mean 1·694.
Quotient of purity.—Highest 88·21, lowest 85·54, mean 86·87.
Glucose ratio.—Highest 6·23, lowest 3·94, mean 5·08.

B. 376 Cane.

Of fairly good germinating power; from 8 to 10 canes to the clump; internodes from 3 to 5 inches long, of medium size, somewhat tumid; colour very variable like the White Transparent Cane which it much resembles; in habit too it is like the White Transparent which, under certain conditions, is somewhat trailing and, under others, upright; few arrows; drops its leaves readily.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 7 plots) ...	21·87	51·45	6
Black soils, ratoons, (1 plot)	7·39	1,457	8
Red soil, plants, (mean of 2 plots)	20·14	4,792	4
Red soil, ratoons, (1 plot)	17·37	3,908	6

The juice was rich and pure. The number of rotten canes was comparatively high. The results are fair; but while justifying further trial, do not indicate any superiority on the part of this variety.

Experimental samples of juice—results of 11 samples.

Saccharose lb. per gallon.—Highest 2·083, lowest 1·714, mean 1·899.
Quotient of purity.—Highest 92·95, lowest 86·96, mean 89·55.
Glucose ratio.—Highest 4·84, lowest 1·97, mean 324.

Sport White Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 7 plots) ...	24·23	59·42	1

The Juice is of only moderate richness and purity. The results, which were obtained only on black soils and for plant canes, would place this cane as regards yield of sugar top of the corresponding list.

Experimental samples of juice—results of 7 samples.

Saccharose lb. per gallon.—Highest 1·952, lowest 1·771, mean 1·875.
Quotient of purity.—Highest 89·07, lowest 84·33, mean 86·79.
Glucose ratio.—Highest 4·57, lowest 2·69, mean 3·50.

The remaining canes are, with one exception, new to the selected lot of seedlings, and their results obtained in this unfavourable year call, on this occasion, for no special comment.

B. 373 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Red soil, ratoons, (mean of 2 plots) ...	18·74	3,903	7

Experimental samples of juice—results of 2 samples.

Saccharose lb. per gallon.—Highest 1·754, lowest 1·625, mean 1·689.
Quotient of purity.—Highest 89·44, lowest 88·33, mean 86·38.
Glucose ratio.—Highest 7·69, lowest 4·33, mean 6·01.

B. 379 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, ratoons, (mean of 5 plots) ...	7·24	1,546	7
Red soil, plants, (mean of 2 plots) ...	14·26	3,532	9
Red soil, ratoons, (mean of 2 plots) ...	20·29	4,527	2

Experimental samples of juice—results of 9 samples.

Saccharose lb. per gallon.—Highest 2·134, lowest 1·421, mean 1·919.
Quotient of purity.—Highest 91·35, lowest, 79·92, mean 89·13.
Glucose ratio.—Highest 6·05, lowest 1·87, mean 3·00.

B. 390 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, ratoons, (mean of 4 plots) ...	7·91	1,664	6
Red soil, plants, (mean of 2 plots) ...	21·06	5,091	3
Red soil, ratoons, (1 plot)	17·24	3,836	8

Experimental samples of juice—results of 7 samples.

Saccharose lb. per gallon.—Highest 2·036, lowest 1·772, mean 1·926.
Quotient of purity.—Highest 90·16, lowest 86·39, mean 88·68.
Glucose ratio.—Highest 3·95, lowest 2·06, mean 2·63.

B. 393 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Red soil, plants, (mean of 2 plots) ...	17·33	4,174	5

Experimental samples of juice—results of 2 samples.

Saccharose lb. per gallon.—Highest 1·949, lowest 1·897, mean 1·923.
Quotient of purity.—Highest 90·78, lowest 88·85, mean 89·81.
Glucose ratio.—Highest 3·16, lowest 2·57, mean 2·87.

B. 619 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Red soil, plants, (1 plot)	14·13	2,980	10
Red soil, ratoons, (1 plot)	3·14	591	14

Experimental samples of juice—results of 2 samples.

Saccharose lb. per gallon.—Highest 1·819, lowest 1·738, mean 1·779.
Quotient of purity.—Highest 84·72, lowest 84·66, mean 84·69.
Glucose ratio.—Highest 3·96, lowest 2·47, mean 3·22.

B. 635 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 2 plots) ...	10·14	2,056	9
Black soils, ratoons, (1 plot) ...	3·58	623	10
Red soil, plants, (1 plot) ...	13·58	2,775	11
Red soil, ratoons, (1 plot) ...	5·70	1,190	13

Experimental samples of juice—results of 5 samples.

Saccharose lb. per gallon.—Highest 1·968, lowest 1·693, mean 1·831.
Quotient of purity.—Highest 88·47, lowest 85·24, mean 86·92.
Glucose ratio.—Highest 4·90, lowest 2·08, mean 3·48.

B. 645 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 6 plots) ...	22·44	5,322	3

Experimental samples of juice—results of 6 samples.

Saccharose lb. per gallon.—Highest 2·035, lowest 1·835, mean 1·962.
Quotient of purity.—Highest 90·79, lowest 86·43, mean 88·75.
Glucose ratio.—Highest 4·31, lowest 1·97, mean 2·85.

D. 95 Cane.

Chief mean results per acre:	Canes tons.	Saccharose pounds.	Comparative order (by saccharose yield.)
Black soils, plants, (mean of 6 plots) ...	17·63	4,351	8
Black soils, ratoons, (mean of 2 plots) ...	9·53	2,025	3
Red soil, plants, (mean of 2 plots) ...	17·31	4,035	6
Red soil, ratoons, (mean of 2 plots) ...	18·71	4,480	3

Experimental samples of juice—results of 10 samples.

Saccharose lb. per gallon.—Highest 2·129, lowest 1·696, mean 1·932.
Quotient of purity.—Highest 90·75, lowest 85·96, mean 89·16.
Glucose ratio.—Highest 4·89, lowest 1·92, mean 3·21.

THE SELECTED VARIETIES ARRANGED IN ORDER OF YIELD, TO SHOW THE RELATIVE POSITION AND PURITY OF JUICE OF CERTAIN CANES IN DIFFERENT SOILS AND ALSO WHEN GROWN AS PLANTS AND RATOONS.

	Yield of saccharose in pounds per acre.	Purity of juice.
All soils (plants.)		
B. 208	5,352	very high.
B. 147	5,125	fair.
B. 376	5,067	high.
White Transparent	5,023	high.
Sealy Seedling	5,022	low.
D. 95	4,272	fair.
B. 635	2,416	fair.
All soils (ratoons.)		
D. 95	3,253	fair.
Jamaica Cane	2,884	high.
B. 376	2,633	high.
White Transparent	2,587	high.
B. 147	2,338	fair.
B. 208	2,307	very high.
B. 390	2,099	high.
B. 379	1,969	high.
Rock Hall Cane	1,937	fair.
B. 635	907	doubtful.
Black soils (plants.)		
Sport White	5,942	fair.
B. 208	5,329	very high.
B. 645	5,322	high.
B. 147	5,269	fair.
White Transparent	5,172	high.
B. 376	5,145	high.
Sealy Seedling	4,613	low.
D. 95	4,351	high.
D. 635	2,056	fair.
Black soils (ratoons.)		
B. 147	2,637	fair.
White Transparent	2,602	high.
D. 95	2,025	fair.
Jamaica Cane	2,014	fair.
B. 208	1,751	very high.
B. 390	1,664	high.
B. 379	1,546	high.
B. 376	1,457	high.
Rock Hall Cane	1,058	doubtful.
B. 635	623	doubtful.
Red soil (plants).		
B. 208	5,443	very high.
Sealy Seedling	5,431	low.
B. 390	5,091	high.
B. 376	4,792	high.
B. 393	4,174	high.
D. 95	4,035	high.
B. 147	3,828	fair.
White Transparent	3,687	high.
B. 379	3,532	very high.
B. 619	2,980	low.
B. 635	2,775	doubtful.
Red soil (ratoons.)		
Jamaica cane	4,624	very high.
B. 379	4,527	very high.
D. 95	4,480	high.
Sealy Seedling	4,172	low.
B. 208	3,973	very high.
B. 376	3,908	high.
B. 373	3,903	low.
B. 390	3,836	fair.
Rock Hall	3,694	high.
White Transparent	2,518	high.
B. 254	2,046	doubtful.
B. 147	1,293	doubtful.
B. 635	1,190	doubtful.
B. 619	591	low.

THE SELECTED VARIETIES ARRANGED IN ORDER OF FREEDOM FROM ROTTEN CANES.

	Per cent. by number of rotten canes.		Germinative power of plants.	Germinative power of ratoons.
B. 373	none.	less than average number.	Good.	Good.
B. 619	·77		Medium.	Medium.
B. 208	·96		Good.	Good.
B. 393	1·33		Medium.	Medium.
B. 635	1·36		Medium.	Medium.
Rock Hall	1·37		Medium.	Medium.
B. 147	1·75		Medium.	Medium.
B. 390	2·24		Good.	Good.
Jamaica	2·32		Good.	Good.
Sealy Seedling... ...	2·63	Average †	Good.	Good.
B. 645	2·79		Good.	Good.
B. 379	2·80		Good.	Good.
B. 254	2·53		Medium.	Medium.
White Transparent ...	4·19	more than average number.	Good.	Good.
B. 376	4·82		Good.	Good.
D. 95	5·62		Good.	Good.
Sport White	6·49		Good.	Good.

† The average percentage was 2·92 for the whole series.

GENERAL CONCLUSIONS FROM THE VARIETY EXPERIMENT PLOTS OF 1903.

The weather this year, which reduced the crops of the island to less than two-thirds of the average, was exceedingly unfavourable to experimental cultivation and renders the results taken alone of little value for drawing conclusions. Such weather of course serves to bring out the resistive qualities of the several varieties and to show how under adverse circumstances new varieties will compare with old and standard varieties.

Under such circumstances it is to be noted that the Barbados Seedling 208 on the whole maintained its place both as to yield, and richness and purity of juice; that White Transparent and B. 147 ran almost neck and neck in yield, but the latter was slightly behind in the richness and purity of its juice; and the Sealy Seedling, while showing a favourable yield, again broke down on the quality of the juice. The results therefore on the whole confirm those of previous years.

LARGE ESTATE PLOTS.

The mean results were as follows:

15 plots of White Transparent Canes indicated the following average results—

Gallons of juice per acre, ...	2,488
Saccharose ℔ per acre, ...	4,651
Quotient of purity, ...	88·48
Glucose ratio	3·51

9 plots of B 147 canes indicated the following average results—

Gallons of juice per acre, ...	2,892
Saccharose ℔ per acre, ...	5,345
Quotient of purity	88·10
Glucose ratio	3·57

13 plots of B 208 canes indicated the following average results—

Gallons of juice per acre, ...	2,315
Saccharose ℔ per acre, ...	4,838
Quotient of purity	90·81
Glucose ratio	2·28

NEW SEEDLINGS.

This year a very large number of new seedlings have been crushed and analysed, and the results will be found in Tables LIV, LVI, LVII, LVIII, LIX, LXII. LXXXI.

These results are here published as a record of the work done, and are simply used as a guide in the process of eliminating valueless seedlings from further experimental cultivation. The cultivation of the more promising varieties will be continued and some of them may ultimately rise to the rank of selected seedlings, to be tested at the local stations: a report on the results will then be included in the annual pamphlet.

TABLE LII. RAINFALL AT VARIETY EXPERIMENT STATIONS FROM DECEMBER, 1901, TO MAY, 1903.

MONTHS.	Dodds.		Sunbury.		Hampton.		Oughterson.		Henley.		Coverley.		Waterford.		Pine.		Sandy Lane.		Husbands.	
	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
December 1901	18	8·33	16	6·39	17	6·11	17	6·87	21	8·96	21	5·92	20	4·68	10	4·42	20	5·50	19	3·79
January 1902	16	1·95	11	1·25	13	1·18	12	1·26	12	1·62	13	1·51	16	1·05	5	1·14	15	1·71	13	1·80
February ... ... "	5	·83	5	·48	6	·74	5	·78	3	·96	8	·99	4	·59	4	·63	5	·52	3	·71
March ... ... "	6	1·41	4	·61	7	·74	8	1·09	4	1·41	10	1·31	9	1·38	4	1·03	8	·88	9	1·66
April ... ... "	7	·66	6	·50	5	·92	5	·41	8	·89	8	·74	9	·89	3	·70	7	·60	6	·48
May ... ... "	10	4·24	10	6·77	13	6·47	8	5·11	9	7·69	10	6·29	11	6·07	8	4·43	10	4·28	15	6·15
June ... ... "	16	6·14	18	6·85	19	6·77	16	5·82	16	6·56	22	6·19	17	5·39	16	5·82	19	6·13	24	9·58
July ... ... "	18	6·49	13	5·09	18	5·81	19	6·16	17	9·00	17	4·74	20	6·10	11	5·20	21	6·20	22	4·98
August ... ... "	14	5·43	12	4·23	14	5·77	14	5·38	19	7·91	16	6·54	20	7·87	15	7·84	20	6·45	24	5·45
September ... ... "	18	4·15	15	3·03	15	2·87	14	4·24	15	4·90	16	3·12	19	2·76	8	2·77	19	4·24	19	6·57
October ... ... "	13	3·77	12	4·17	17	3·81	11	2·89	8	3·28	11	3·29	12	3·48	11	4·42	12	2·66	17	7·34
November ... ... "	14	5·91	15	4·41	15	5·06	15	5·86	15	6·74	20	6·31	15	5·77	13	6·16	16	7·09	19	4·80
December ... ... "	18	8·00	15	6·60	19	7·58	18	7·43	16	10·08	21	6·55	16	6·03	11	5·15	11	5·15	20	5·94
January 1903	15	1·58	10	1·86	12	2·24	12	2·15	11	3·20	17	2·09	14	1·95	7	1·70	17	2·33	21	2·89
February ... ... "	9	1·36	10	1·30	10	1·79	11	1·24	11	1·83	13	1·73	10	1·44	7	1·62	10	·92	12	1·14
March ... ... "	11	4·32	9	4·08	11	4·87	8	3·64	12	6·81	9	3·51	12	3·95	6	3·40	10	5·22	8	2·04
April ... ... "	16	5·91	13	3·07	13	3·78	8	5·92	16	4·18	5	3·30	12	1·56	6	1·21	10	1·59	11	1·84
May ... ... "	6	2·02	7	2·61	6	3·23	6	1·73	6	2·34	8	2·07	7	1·61	6	2·63	7	1·37	8	1·11
	230	73·50	201	63·30	230	70·44	207	67·98	219	88·16	245	66·20	243	62·52	151	60·27	237	62·84	270	68·27

TABLE LIII. VARIETY EXPERIMENT STATIONS 1901—1903.

Name of Estate.	Name of Field.	Height above sea level. Feet.	Rainfall from December, 1901 to May, 1903.
Dodds ...	Cat Hole ...	210	73·50
	House ...		
	Harrow ...		
	Lower Padmore ...		
	Pilgrim ...		
	Summervale ...		
	Upper Bay Tree ...		
	Upper Chapel ...		
	Upper Nightingale ...		
Sunbury ...	Dodds ...	160	63·30
Coverley ...	Merebah ...	254	66·20
	Middle Caminus ...		
	Old Well ...		
Husbands ...	Four Acre ...	184	68·27
Waterford...	Burnt ...	186	62·52
	Dixon ...		
	Sandy ...		
Hampton ...	Twelve Acre ...	103	70·44
Oughterson	Macaroni ...	291	67·98
Pine ...	Nine Acre ...	100	60·27
Henley ...	Above Todds ...	553	88·16
	Long ...		
Sandy Lane ...	Vault ...	60	62·84

TABLE LIV. DODDS.—CAT HOLE FIELD. VARIETIES.

Plants.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre. Canes.	Weight in Tons per acre. Cane Tops.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. 30° C. 16·6° C. Sp. Gr.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
Sport White	20,557	28·00	6·71	9·23	62·00	1·0787	1·881	·078	·188	87·62	4·15	3,605	6,781
Sport Ribbon	18,873	28·00	6·74	5·52	58·65	1·0839	2·009	·058	·220	87·84	2·89	3,394	6,819
White Transparent	21,370	29·68	6·35	7·31	61·75	1·0787	1·855	·081	·211	86·40	4·37	3,806	7,060
B. 147	19,802	33·31	5·31	1·16	64·00	1·0765	1·756	·079	·253	84·10	4·50	2,592	4,790
B. 1238	22,589	32·16	5·44	3·71	57·00	1·0747	1·688	·098	·256	82·66	5·81	3,821	6,450
B. 1270	17,131	27·97	8·04	3·28	60·75	1·0848	2·109	·043	·159	91·26	2·04	3,509	7,400
B. 1280	20,325	24·37	6·56	3·58	57·80	1·0857	2·124	·042	·168	91·00	1·98	2,906	6,172
B. 1283	19,802	33·03	6·22	20·33	59·34	1·0769	1·868	·066	·166	88·95	3·53	4,077	7,616
B. 1355	18,234	16·20	5·86	none	60·75	1·0817	2·014	·063	·151	90·39	3·13	2,038	4,105
B. 1360	22,357	28·02	9·72	7·67	66·75	1·0694	1·581	·093	·230	83·04	5·88	3,918	6,194
B. 1369	15,795	16·88	7·36	11·69	60·96	1·0822	1·957	·065	·218	87·37	3·32	2,129	4,166
B. 1371	17,653	26·55	7·30	2·56	61·60	1·0839	2·093	·044	·150	91·52	2·10	3,379	7,672
B. 1376	21,486	32·22	8·66	4·88	61·25	1·0844	2·113	·044	·142	91·91	2·08	4,077	8,615
B. 1378	15,737	20·74	5·39	1·81	62·50	1·0782	1·882	·066	·187	88·15	3·51	2,693	5,068
B. 1379	22,473	24·21	6·17	3·49	58·25	1·0839	2·059	·045	·183	90·03	2·19	2,915	6,002
B. 1381	21,718	24·03	6·04	3·36	61·00	1·0787	1·910	·068	·169	88·96	3·56	3,044	5,814
B. 1386	18,699	28·13	8·04	9·80	61·08	1·0773	1·866	·076	·170	88·35	4·07	3,572	6,665
B. 1462	20,325	27·22	9·33	3·05	60·25	1·0826	2·095	·054	·103	93·03	2·58	3,393	7,108
B. 1464	18,118	16·90	6·01	...	57·00	1·0795	1·981	·063	·126	91·29	3·18	1,999	3,960
B. 1470	19,802	32·41	6·17	1·73	60·50	1·0782	1·871	·069	·195	87·63	3·69	4,073	7,621
B. 1475	16,492	30·54	12·06	2·07	63·50	1·0795	1·929	·064	·177	84·98	3·32	4,024	7,762
B. 1476	19,395	21·96	6·87	10·70	57·50	1·0729	1·701	·100	·194	85·26	5·88	2,636	4,484
B. 1480	26,770	23·46	6·38	·86	55·28	1·0813	1·952	·063	·202	88·05	3·23	2,687	5,245
B. 1490	19,221	23·98	6·48	none	56·59	1·0822	1·999	·063	·178	89·24	3·15	2,809	5,615
B. 1496	18,176	29·81	9·33	7·40	60·25	1·0760	1·767	·083	·227	85·07	4·70	3,739	6,607

TABLE LV. DODDS.—HOUSE FIELD.

VARIETIES.

1st Ratoons.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16\cdot6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent ...	15,853	19·05	5·57	6·83	62·75	1·0743	1·738	·139	·153	85·62	8·00	2,493	4,333
B. 147 ...	17,653	19·05	7·00	none	65·25	1·0747	1·869	·132	·041	91·53	7·06	2,591	4,843
B. 1594 ...	16,608	11·80	4·48	,,	59·25	1·0809	1·946	·085	·174	88·25	4·37	1,448	2,817
B. 1607 ...	15,737	26·18	4·80	1·45	65·00	1·0756	1·680	·125	·260	81·36	7·44	3,544	5,954
D. 625 ...	10,452	11·18	2·43	none	63·25	1·0640	1·272	·250	·244	72·03	19·65	1,489	1,894
D. 721 ...	22,250	18·20	4·77	1·06	62·25	1·0738	1·605	·139	·275	79·49	8·66	2,364	3,794
D. 842 ...	17,420	14·83	6·67	none	61·50	1·0826	2·009	·050	·193	89·21	2·49	1,887	3,791
D. 844 ...	15,025	7·53	4·42	,,	56·82	1·0716	1·515	·139	·307	77·26	9·17	895	1,356
D. 1234 ...	19,336	14·66	5·25	,,	60·25	1·0773	1·829	·059	·224	86·60	3·23	1,836	3,358
D. 1438 ...	20,597	20·40	8·01	,,	58·50	1·0756	1·729	·069	·267	83·73	3·99	2,486	4,298
D. 1640 ...	9,097	13·39	3·63	,,	60·25	1·0756	1·748	·069	·248	84·65	3·95	1,681	2,938
D. 1897 ...	19,162	19·11	5·67	4·94	61·25	1·0703	1·497	·192	·238	77·69	12·83	2,450	3,668

TABLE LVI. DODDS.—HARROW FIELD. VARIETIES. *Plants.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30°C.}{16·6°C.}$	Lb. per gallon. Saccharose.	Lb. per gallon. Glucose.	Lb. per gallon. Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	16,085	19·44	5·29	2·12	60·75	1·0822	1·955	061	·224	87·28	3·12	2,445	4,780
B. 147	14,865	18·61	6·48	1·16	62·25	1·0813	1·929	·064	·224	87·01	3·32	2,400	4,630
B. 709	13,356	12·91	4·54	none	59·44	1·0835	1·997	·050	·228	87·78	2·50	1,586	3,167
B. 1008	14,053	24·60	5·19	4·35	60·00	1·0787	1·808	·066	·273	84·21	3·65	3,065	5,542
B. 1030	14,053	18·59	5·11	1·63	53·67	1·0857	2·027	·044	·263	86·85	2·17	2,058	4,172
B. 1079	14,634	13·04	3·81	none	61·03	1·0897	2·168	·039	·234	88·82	1·80	1,636	3,547

TABLE LVII. DODDS—LOWER PADMORE FIELD. VARIETIES. *Plants.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Red Ribbon	15,737	15·04	4·54	2·52	56·50	1·0839	2·095	·042	·150	91·60	2·00	1,756	3,679
White Transparent	15,795	17·37	4·43	5·22	56·25	1·0844	2·095	·042	·162	91·13	2·00	2,018	4,228
B. 147	16,840	20·45	5·70	2·36	61·00	1·0782	1·844	·083	·208	86·37	4·50	2,592	4,790
B. 1,208	20,208	13·77	5·21	9·61	57·50	1·0897	2·193	·050	·198	89·84	2·28	1,627	3,568
B. 1,221	15,330	13·17	4·17	2·22	58·59	1·0835	1·968	·057	·250	86·51	2·90	1,595	3,139
B. 1,252	15,562	12·96	5·34	8·58	55·15	1·0897	2·205	·050	·189	90·22	2·27	1,469	3,235
B. 1,225	21,253	14·02	4·67	6·87	55·39	1·0879	2·122	·052	·219	88·68	2·45	1,600	3,395
B. 1,233	16,201	19·08	5·42	8·82	58·95	1·0870	2·143	·049	·178	90·42	2·29	2,318	4,967
B. 1,505	15,272	13·12	3·34	9·31	52·50	1·0791	1·900	·065	·193	88·04	3·42	1,430	2,717
B. 1,507	17,653	13·77	3·58	·98	54·25	1·0902	2·270	·037	·146	92·54	1·63	1,534	3,482
B. 1,516	13,298	18·72	5·55	6·91	51·50	1·0800	1·962	·048	·172	89·91	2·45	1,999	3,922
B. 1,521	15,040	13·97	4·51	8·48	58·75	1·0787	1·855	·069	·223	86·40	3·72	1,705	3,163
B. 1,528	20,789	19·34	4·30	·83	56·00	1·0848	2·124	·043	·144	91·91	2·02	2,236	4,749
B. 1,529	18,850	20·61	6·54	1·30	56·00	1·0956	2·406	·035	·155	92·68	1·45	2,359	5,676
B. 1,537	18,693	15·64	5·29	5·42	50·50	1·0861	2·171	·042	·133	92·54	1·93	1,629	3,537
B. 1,542	17,072	21·34	5·16	·34	58·75	1·0778	1·819	·071	·233	85·68	3·90	2,605	4,738
B. 1,549	17,362	11·56	5·83	none	53·15	1·0813	1·921	·076	·220	86·65	3·96	1,273	2,445
B. 1,566	13,123	11·51	3·40	3·83	51·25	1·0831	2·017	·060	·186	89·13	2·97	1,220	2,461
B. 1,584	17,943	20·09	4·95	none	59·39	1·0870	2·142	·050	·178	90·38	2·35	2,459	5,267
B. 1,591	4,181	4·02	2·15	24·21	59·69	1·0627	1·416	·096	·220	81·75	6·78	506	716
B. 1,594	11,555	7·39	1·87	6·57	53·75	1·0760	1·761	·081	·235	84·79	4·60	827	1,456
B. 1,607	9,988	15·17	4·77	11·79	60·50	1·0817	1·980	·061	·187	88·87	3·08	1,900	3,762
B. 1,637	13,181	17·47	4·87	none	51·75	1·0743	1·787	·100	·143	88·03	5·60	1,885	3,368

TABLE LVII.—*Concluded.* DODDS—LOWER PADMORE FIELD. VARIETIES. *Plants.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16\cdot6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 1646	20,324	21·80	3·78	3·32	56·25	1·0787	1·925	·069	·153	89·66	3·58	2,547	4,903
B. 1709	23,402	27·06	6·51	7·78	60·00	1·0800	1·855	·083	·244	85·01	4·47	3,368	6,248
B. 1719	12,998	11·28	3·77	3·96	57·50	1·0795	1·959	·069	·142	90·28	3·52	1,345	2,635
B. 1736	22,124	26·75	5·91	4·99	61·75	1·0795	1·868	·069	·233	86·08	3·69	3,428	6,404
B. 1753	27,350	24·03	4·93	2·68	54·23	1·0831	1·993	·060	·210	88·07	3·01	2,695	5,371
D. 2093	18,233	16·95	7·65	3·88	56·75	1·0826	1·962	·055	·235	87·12	2·80	1,991	3,906
D. 2468	12,717	15·68	3·99	none	56·50	1·0795	1·881	·064	·225	86·68	3·40	1,839	3,459

TABLE LVIII. DODDS.—PILGRIM FIELD.

VARIETIES.

Plants.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Unknown	13,008	25·43	3·32	1·75	64·57	1·0804	1·797	·069	·227	81·94	3·84	3,405	6,119
White Transparent...	12,136	20·89	3·97	7·53	62·75	1·0839	2·046	·050	·191	89·46	2·44	2,710	5,545
B. 147	14,749	24·19	6·17	none	63·00	1·0844	1·972	·046	·281	85·78	2·33	3,148	6,208
B. 973	17,769	15·42	2·54	,,	58·50	1·0870	2·049	·042	·279	86·46	2·05	1,859	3,809
B. 1033	16,317	14·26	3·76	,,	55·28	1·0866	2·091	·044	·223	88·68	2·10	1,625	3,398
B. 1060	16,317	18·43	5·68	1·75	58·04	1·0844	2·004	·047	·248	87·17	2·35	2,210	4,429
B. 1158	14,865	22·11	5·70	none	62·50	1·0884	2·184	·043	·178	90·81	1·97	2,844	6,211

TABLE LIX. DODDS.—SUMMERVALE FIELD.

VARIETIES.

Plants.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30°C.}{16·6°C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	15,930	26·18	6·30	2·95	61·75	1·0782	1·921	·069	·145	89·98	3·59	3,356	6,451
B. 147	15,446	25·30	8·35	none	62·50	1·0787	1·897	·069	·181	88·36	3·64	3,283	6,228
B. 3207	12,099	16·74	6·21	5·06	62·25	1·0791	1·914	·071	·173	88·69	3·71	2,164	4,142
B. 3208	11,897	14·76	4·95	11·67	56·50	1·0817	2·022	·061	·145	90·75	3·02	1,727	3,492
B. 3209	12,766	18·37	6·48	7·86	63·25	1·0809	1·946	·063	·196	88·25	3·24	2,407	4,684
B. 3211	14,474	19·32	6·34	none	60·75	1·0765	1·858	·075	·155	88·98	4·04	2,442	4,537
B. 3213	13,914	19·08	6·03	3·09	59·45	1·0817	1·967	·063	·198	88·29	3·20	2,350	4,622
B. 3214	12,301	15·93	4·90	none	63·97	1·0866	2·082	·042	·234	88·30	2·02	2,033	4,233
B. 3215	15,003	18·09	6·03	·27	62·89	1·0857	2·059	·046	·229	88·22	2·23	2,348	4,885
B. 3224	15,769	10·57	3·87	·51	57·50	1·0857	2·096	.042	·196	89·80	2·00	1,254	2,627
B. 3233	14,438	10·71	3·33	4·79	58·42	1·0804	1·931	·063	·199	88·05	3·26	1,298	2,506

TABLE LX. DODDS.—UPPER BAY TREE FIELD.

VARIETIES.

Plants.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per Acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	15,040	23·33	4·69	3·72	60·75	1·0804	2·009	·069	·115	91·61	3·43	2,939	5,904
B. 147	14,982	24·24	5·78	none	62·25	1·0791	1·921	·073	·164	89·01	3·80	3,132	6,017
B. 3266	14,459	20·84	4·87	1·58	61·00	1·0813	1·978	·063	·187	88·78	3·19	2,633	5,208
B. 3279	22,531	18·67	6·17	none	58·00	1·0826	2·040	·050	·162	90·59	2·45	2,240	4,570
B. 3284	16,376	20·87	6·07	9·62	63·54	1·0861	2·082	·046	·218	88·75	2·21	2,735	5,694
B. 3289	9,807	17·22	4·90	·65	61·75	1·0822	2·014	·050	·176	89·91	2·48	2,202	4,435
B. 3325	15,678	16·46	6·79	3·57	63·25	1·0844	2·103	·046	·150	91·47	2·19	2,151	4,524
B. 3362	21,485	22·18	4·75	none	59·50	1·0835	2·100	·047	·128	92·31	2·24	2,728	5,729
B. 3367	20,382	20·82	5·24	"	56·75	1·0822	2·015	·050	·175	89·96	2·48	2,445	4,927
B. 3382	14,009	12·47	3·08	1·53	59·50	1·0861	2·129	·045	·172	90·75	2·11	1,531	3,259
B. 3396	14,495	15·55	2·75	1·68	56·75	1·0888	2·247	·039	·131	92·97	1·74	1,816	4,081
B. 3408	14,394	12·28	5·73	none	58·50	1·0765	1·808	·065	·215	86·59	3·60	1,495	2,703
B. 3492	15,097	14·31	4·93	3·70	62·25	1·0751	1·797	·066	·190	87·53	3·67	1,856	3,335

TABLE LXI. DODDS—UPPER CHAPEL FIELD. VARIETIES. *Plants.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
							Lb. per gallon.						
		Canes.	Cane Tops.			Sp. Gr. 30° C. 16·6° C.	Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Bourbon	8,827	12·31	2·77	26·21	60·25	1·0804	1·933	·048	·212	88·14	2·48	1,538	2,973
Caledonian Queen	11,614	18·15	5·57	8·26	61·50	1·0769	1·876	·078	·146	89·33	4·16	2,321	4,354
Jamaica	14,692	20·82	5·31	6·30	62·00	1·0791	1·952	·052	·154	90·45	2·66	2,679	5,228
Naga B.	15,563	18·15	4·10	14·10	60·00	1·0800	1·931	·074	·177	88·49	3·83	2,258	4,360
Queensland Creole	15,214	14·47	5·06	4·73	57·75	1·0778	1·926	·060	·137	90·72	3·12	1,736	3,344
Rappoe	16,492	16·71	4·41	12·88	58·00	1·0795	1·959	·051	·160	90·28	2·60	2,011	3,940
Ruby	15,853	18·20	3·89	8·70	62·75	1·0756	1·780	·125	·160	86·20	7·02	2,378	4,233
Striped Singapore	13,066	18·43	5·70	7·02	61·69	1·0773	1·863	·074	·175	88·21	3·97	2,365	4,406
White Transparent	9,059	19·39	5·44	12·36	59·75	1·0751	1·810	·083	·160	88·16	4·58	2,414	4,369
B. 147	15,621	23·54	6·04	·37	61·50	1·0778	1·897	·050	·176	89·35	2·64	3,009	5,708
B. 208	20,789	25·66	6·04	·28	57·75	1·0879	2·215	·038	·140	92·56	1·72	3,052	6,760
B. 376	12,601	23·64	5·18	11·43	60·00	1·0809	2·025	·054	·126	91·84	2·67	2,940	5,954
B. 379	12,833	16·10	5·18	17·23	57·25	1·0773	1·868	·065	·179	88·45	3·48	1,916	3,579
B. 393	13,182	15·27	4·59	4·62	60·25	1·0831	2·040	·044	·179	90·15	2·16	1,903	3,882
B. 519	8,014	11·28	4·07	4·83	58·75	1·0817	2·066	·044	·118	92·78	2·13	1,372	2,835
B. 645	11,788	14·98	3·23	5·58	61·00	1·0817	1·957	·045	·226	87·84	2·30	1,893	3,705
D. 74	14,634	14·18	4·80	19·23	61·34	1·0822	2·040	·044	·156	91·07	2·16	1,800	3,672
D. 78	18,989	18·30	3·89	·30	62·75	1·0787	1·857	·063	·227	86·49	3·39	2,385	4,429
D. 125	9,465	11·54	3·81	1·81	59·50	1·0788	1·774	·089	·156	87·87	5·02	1,432	2,540
D. 625	14,518	18·95	4·15	1·96	60·00	1·0760	1·703	·089	·285	81·99	5·23	2,367	4,031
D. 721	8,710	12·37	3·82	1·79	61·25	1·0765	1·790	·081	·217	85·73	4·52	1,577	2,823
D. 842	18,356	14·88	4·61	·63	55·28	1·0879	2·203	·038	·152	92·06	1·72	1,694	3,732
D. 844	17,363	12·18	3·50	·66	57·25	1·0743	1·680	·125	·225	82·76	7·44	1,454	2,443

TABLE LXI.—*Concluded.* DODDS—UPPER CHAPEL FIELD.

VARIETIES.
Plants.

Number or Name of Seedling.	Number of Canes per acre.	Weight in tons per acre.		Per cent. by number of rotten canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
D. 1234	13,705	8·55	3·37	2·47	55·25	1·0782	1·884	·070	·231	85·90	3·82	982	1,801
D. 1438	16,202	15·04	5·31	3·79	58·50	1·0861	2·124	·041	·181	90·54	1·93	1,814	3,853
D. 1640	9,320	9·72	2·88	none	59·50	1·0721	1·631	·096	·246	82·67	5·89	1,208	1,970
D. 1897	11,730	11·80	4·67	7·34	56·00	1·0756	1·767	·083	·215	85·57	4·70	1,376	2,431
Q. 8 A	14,750	18·02	3·89	1·55	55·75	1·0835	2·067	·043	·165	90·86	2·08	2,077	4,293
T. 24	20,673	14·78	4·23	11·00	60·00	1·0839	2·059	·043	·185	90·03	2·09	1,832	3,772
T. 77	19,918	15·53	5·70	9·50	56·89	1·0822	2·023	·044	·173	90·31	2·17	1,829	3,700
T. 111	18,931	14·91	5·27	none	52·05	1·0924	2·292	·034	·186	91·24	1·48	1,591	3,647

TABLE LXII. DODDS.—UPPER NIGHTENGALE FIELD. VARIETIES.

Plants.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Canne Morte	12,833	14·34	3·27	none	60·00	1·0769	1·784	·064	·252	84·95	3·59	1,789	3,192
White Transparent	11,149	19·73	4·98	,,	61·50	1·0839	2·041	·050	·196	89·24	2·45	2,507	5,117
B. 147	15,505	29·66	5·60	,,	64·00	1·0795	1·855	·083	·232	85·48	4·47	3,939	7,307
B. 3420	19,221	15·22	4·38	3·22	58·75	1·0929	2·300	·036	·188	91·13	1·57	1,832	4,214
B. 3425	15,268	22·83	4·76	6·88	60·75	1·0839	2·093	·046	·148	91·52	2·20	2,866	5,999
B. 3435	18,072	18·44	4·93	9·78	62·31	1·0817	1·907	·052	·269	85·59	2·73	2,379	4,537
B. 3439	20,556	19·83	5·13	·84	60·05	1·0866	2·129	·043	·186	90·29	2·02	2,455	5,227
B. 3447	15,389	10·29	2·85	2·57	56·75	1·0835	2·106	·044	·125	92·57	2·09	1,207	2,542
B. 3451	20,240	15·89	5·07	1·61	58·00	1·0844	2·108	·046	·145	91·69	2·18	1,903	4,012
B. 3454	11,846	6·53	2·02	5·56	57·41	1·0884	2·172	·043	·190	90·31	1·98	772	1,677
B. 3458	15,586	11·65	4·34	1·73	60·75	1·0848	2·125	·041	·145	91·95	1·93	1,838	3,906
B. 3464	14,111	14·10	2·70	none	58·00	1·0844	2·106	·046	·147	91·60	2·18	1,690	3,559
B. 3471	13,879	19·13	3·37	,,	60·50	1·0844	2·078	·046	·175	90·39	2·21	2,391	4,968
B. 3475	16,956	14·44	3·16	,,	59·50	1·0826	2·025	·050	·177	89·92	2·47	1,778	3,600
B. 3477	14,518	17·11	3·68	,,	60·75	1·0844	2·056	·047	·196	89·43	2·29	2,147	4,414
B. 3569	16,143	18·15	2·72	10·61	60·00	1·0835	1·973	·050	·252	86·73	2·53	2,251	4,441
B. 3580	20,759	16·98	6·55	1·38	59·19	1·0888	2·234	·041	·142	92·43	1·84	2,068	4,620
T. 36 ... . ,,	27,583	16·85	6·56	none	57·50	1·0997	2·542	·026	·137	93·97	1·02	1,974	5,018
T. 64	9,097	6·44	3·46	,,	62·44	1·0875	2·153	·042	·187	90·39	1·95	828	1,783
T. 75	15,677	19·27	3·08	·79	56·50	1·0911	2·239	·039	·199	90·39	1·74	2,236	5,006
T. 83	20,557	14·70	4·98	·56	58·50	1·0938	2·351	·035	·162	92·27	1·49	1,761	4,140
T. 146	12,717	12·70	1·87	3·10	58·50	1·0844	2·025	·048	·226	88·08	2·37	1,535	3,108
T. 182	17,918	21·44	8·22	none	61·00	1·0933	2·334	·035	·167	92·04	1·50	2,680	6,255
T. 184	14,858	17·02	4·44	,,	61·50	1·0773	1·779	·063	·270	84·23	3·54	2,176	3,871
T. 189	16,376	16·38	3·29	,,	65·50	1·0956	2·412	·034	·150	92·91	1·41	1,859	4,484

TABLE LXIII. COVERLEY PLANTATION. MEREBAH FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in tons per acre. Canes.	Weight in tons per acre. Cane Tops.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
White Transparent	Series I	12,986	17·66	4·34	12·02	58·75	1·0756	1·814	·069	·182	87·85	3·80	2,161	3,920
	„ II	12,502	19·48	5·01	5·49	59·00	1·0835	2·080	·040	·155	91·43	1·92	2,376	4,942
	mean	12,744	18·57	...	...	...	...	...	...	...	89·64	...	...	4,431
Sealy Seedling	Series I	17,584	20·67	3·04	2·24	59·25	1·0804	1·840	·044	·309	83·90	2·39	2,539	4,672
	„ II	17,140	19·80	2·70	10·53	60·25	1·0809	1·842	·054	·309	83·54	2·93	2,473	4,555
	mean	17,362	20·24	...	...	...	...	...	...	...	83·72	...	...	4,614
B. 147	Series I	10,163	12·67	3·62	18·97	58·75	1·0864	1·920	·046	·227	87·55	2·40	1,544	2,964
	„ II	13,148	20·25	4·32	1·81	59·27	1·0795	1·861	·044	·265	85 76	2·36	2,491	4,636
	mean	10,656	16·46	...	...	...	...	...	...	...	86·66	...	...	3,800
B. 208	Series I	14,519	11·94	3·40	6·49	53·00	1·0817	1·968	·044	·216	88·33	2·24	1,310	2,578
	„ II	16,939	15·05	3·33	·71	56·75	1·0924	2·279	·035	·198	90·72	1·54	1,752	3,993
	mean	15,729	13·50	...	...	...	...	...	...	...	89·33	...	...	3,286
B. 376	Series I	13,753	18·81	4·57	5·54	55·75	1·0831	1·968	·041	·254	86·96	2·08	2,169	4,269
	„ II	11,615	11·25	1·62	4·00	55·25	1·0813	2·009	·046	·162	90 62	2·29	1,288	2,588
	mean	12,684	15·03	...	...	...	...	...	...	...	88·79	...	...	3,429
B. 379	Series I	14,962	11·94	3·58	7·02	50·75	1·0800	1·835	·044	·303	84·10	2·40	1,256	2,305
	„ II	13,430	20·25	3·60	5·13	57·00	1·0826	2·043	·042	·167	90·72	2·06	2,389	4,879
	mean	14,196	16·10	...	...	...	...	...	...	...	87·41	...	...	3,592
B. 390	Series I	13,309	13·12	3·60	2·94	52·75	1·0826	1·968	·043	·241	87·39	2·18	1,433	2,820
	„ II	13,228	14·40	3·96	11·11	56·50	1·0769	1·787	·066	·247	85·10	3·69	1,693	3,025
	mean	13,269	13·76	...	...	...	...	...	...	...	86·25	...	...	2,923
B. 393		12,018	16·44	4·93	1·97	53·75	1·0853	2·078	·040	·205	89·45	1·92	1,824	3,790

TABLE LXIII.—*Concluded.*

COVERLEY PLANTATION.
MEREBAH FIELD.

SELECTED VARIETIES.
Plant Canes.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 635 ... ... Series I	15,325	9·49	3·49	4·04	47·25	1·0800	1·917	·049	·216	87·86	2·56	930	1,783
„ II	17,866	10·80	3·85	·89	53·00	1·0831	1·968	·041	·254	86·96	2·08	1,184	2,330
mean	16,596	10·15	...	...	...	...	...	...	...	87·41	...	...	2,057
B. 645	14,393	24·83	4·38	4·55	57·25	1·0835	2·035	·040	·200	89·45	1·97	2,939	5,981
D. 95 ... ... Series I	10,284	7·13	2·63	21·30	56·25	1·0721	1·696	·083	·194	85·96	4·89	838	1,421
„ II	11,454	9·15	3·65	14·97	59·25	1·0839	2·030	·039	·218	88·76	1·92	1,120	2,274
mean	10,869	8·14	...	...	...	...	...	...	...	87·36	...	...	1,848
T. 24	16,553	15·56	4·97	4·47	57·50	1·0924	2·312	·036	·164	92·04	1·56	1,834	4,240

TABLE LXIV. COVERLEY PLANTATION. MIDDLE CAMINUS FIELD. SELECTED VARIETIES. *2nd Ratoons.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	Series I	13,672	11·31	3·11	2·59	56·25	1·0853	2·104	·042	·177	90·57	2·00	1,313	2,763
	„ II	7,985	6·79	2·38	1·98	55·50	1·0853	2·122	·040	·161	91·35	1·89	778	1,651
	mean	10,828	9·05	...	...	...	...	...	...	...	90·96	...	...	2,207
B. 147	Series I	12,785	9·76	4·05	1·25	51·50	1·0778	1·839	·053	·231	86·62	2·88	1,035	1,903
	„ II	9,397	7·83	2·97	none	59·00	1·0782	1·881	·046	·208	88·10	2·45	960	1,806
	mean	11,091	8·80	...	...	...	...	...	...	...	87·36	...	...	1,855
B. 208	Series I	13,148	6·16	2·79	·61	49·50	1·0839	2·009	·042	·236	87·84	2·09	630	1,266
	„ II	13,107	5·49	2·70	none	51·50	1·0897	2·219	·036	·186	90·91	1·62	581	1,289
	mean	13,128	5·83	...	...	...	...	...	...	...	89·38	...	...	1,278
B. 379	Series I	13,430	7·81	3·60	·89	50·75	1·0806	2·134	·040	·184	90·50	1·87	817	1,743
	„ II	11,696	7·00	3·10	·68	51·50	1·0853	2·122	·040	·161	91·35	1·89	744	1,579
	mean	12,563	7·41	...	...	...	...	...	...	...	90·93	...	...	1,661
B. 390	Series I	17,100	10·89	3·82	·70	51·00	1·0809	1·988	·042	·175	90·16	2·11	1,151	2,288
	„ II	7,380	3·51	2·57	3·17	45·75	1·0809	1·959	·042	·204	88·84	2·14	333	652
	mean	12,240	7·20	...	...	...	...	...	...	...	89·50	...	...	1,470

TABLE LXV. COVERLY PLANTATION. OLD WELL FIELD. SELECTED VARIETIES. *1st Ratoons.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in Tons per acre. Canes.	Weight in Tons per acre. Cane Tops.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
Jamaica Cane	Series I.	12,583	8·32	5·11	·64	51·00	1·0826	2·009	·041	·202	89·21	2·04	878	1,764
	„ II.	14,398	8·64	3·17	none	55·75	1·0857	2·147	·040	·147	91·99	1·86	994	2,134
	mean	13,490	8·48	...	...	...	...	...	...	...	90·60	...	...	1,949
Rock Hall Cane	Series I.	7,300	2·20	2·18	·55	47·25	1·0712	1·644	·082	·224	84·31	4·99	217	357
	„ II.	10,526	4·68	3·24	2·97	56·75	1·0800	1·923	·044	·215	88·13	2·29	560	1,077
	mean	8,913	3·44	...	...	...	...	...	...	...	86·22	...	...	717
White Transparent	Series I.	10,970	5·51	2·99	none	57·00	1·0844	2·080	·042	·177	90·47	2·02	649	1,350
	„ II.	11,655	12·06	3·84	·69	55·50	1·0853	2·091	·039	·193	90·01	1·87	1,382	2,890
	„ III.	15,366	11·79	4·59	1·30	57·75	1·0879	2·216	·038	·139	92·60	1·71	1,402	3,107
	mean	12,664	9·79	...	...	...	...	...	...	...	91·02	...	...	2,449
B. 147	Series I.	15,325	12·98	5·74	none	59·21	1·0791	1·886	·045	·227	87·40	2·39	1,596	3,010
	„ II.	15,567	15·70	6·89	„	61·50	1·0760	1·821	·055	·201	87·67	3·02	2,011	3,662
	mean	15,496	14·34	...	...	...	...	...	...	...	87·53	...	...	3,336
B. 208	Series I.	16,132	8·37	4·07	none	50·13	1·0884	2·159	·038	·208	89·77	1·76	864	1,865
	„ II.	14,720	9·63	3·06	„	56·00	1·0879	2·163	·088	·192	90·39	1·76	1,111	2,403
	mean	15,426	9·00	...	...	...	...	...	...	...	90·08	...	...	2,134
B. 368	Series I.	15,850	11·20	4·05	·51	54·75	1·0853	2·095	·042	·186	90·19	2·00	1,265	2,650
	„ II.	12,260	5·44	3·24	1·94	51·50	1·0848	2·080	·039	·192	90·00	1·88	578	1,202
	mean	14,055	8·32	...	...	...	...	...	...	...	...	...	...	1,926
B. 379	Series I.	13,551	9·20	3·94	2·33	55·63	1·0857	2·074	·042	·218	88·86	2·03	1,045	2,167
	„ II.	15,729	6·93	4·18	3·23	49·75	1·0835	2·062	·041	·172	90·64	1·99	713	1,470
	mean	14,640	8·06	...	...	...	...	...	...	...	...	...	...	1,818

TABLE LXV.—*Concluded.* COVERLEY PLANTATION. OLD WELL FIELD. SELECTED VARIETIES. *1st Ratoons.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
						Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon.			Quotient of Purity.	Glucose Ratio.		
		Canes.	Cane Tops.				Saccharose.	Glucose.	Solids not Sugar.				
B. 390 ... ... Series I	14,519	9·13	4·14	·55	52·90	1·0839	2·036	·042	·209	89·02	2·06	998	2,032
„ II	12,502	8·10	5·40	2·82	50·75	1·0844	1·986	·042	·271	86·39	2·11	849	1,686
mean	13,510	8·61	...	...	...	...	...	...	...	...	...	...	1,859
B. 519	11,292	4·41	3·24	1·41	57·50	1·0875	2·153	·039	·190	90·39	1·81	522	1,124
B. 534	4,880	2·11	1·73	·82	48·50	1·0684	1·800	·122	...	...	6·78	214	385
B. 554	12,502	5·29	3·10	none	54·75	1·0804	1·938	·043	·212	88·57	2·22	601	1,165
B. 619	20,407	10·30	4·05	„	50·50	1·0831	1·955	·042	·266	86·39	2·15	1·076	2,104
B. 635	14,196	3·58	3·62	„	46·00	1·0782	1·823	·046	·266	85·39	2·52	342	623

TABLE LXVI. WATERFORD PLANTATION. BURNT FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. 30°C./16·6°C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Sport	Series I	13,390	26·34	6·75	3·77	65·00	1·0791	1·861	·050	·247	86·24	2·69	3,554	6,614
	„ II	12,099	23·71	6·96	10·71	63·75	1·0778	1·891	·054	·178	89·07	2·86	3,142	5,942
	„ III	12,193	26·01	7·40	5·76	63·07	1·0800	1·858	·055	·269	85·15	2·96	3,403	6,323
	mean	12,560	25·35	...	...	...	...	...	...	...	86·82	...	...	6,293
White Transparent	Series I	14,841	14·39	5·38	1·34	64·21	1·0902	2·240	·038	·175	91·32	1·70	1,898	4,252
	„ II	14,866	21·97	5·02	none	59·44	1·0804	1·963	·044	·186	89·51	2·24	2,708	5,316
	mean	14,853	18·18	...	...	...	...	...	...	...	90·42	...	...	4,784
B. 147	Series I	15,070	25·68	8·40	·72	61·00	1·0813	1·895	·043	·279	85·48	2·27	3,245	6,149
	„ II	13,672	19·57	6·59	1·17	61·95	1·0800	1·963	·042	·177	89·96	2·14	2,515	4,937
	mean	14,371	22·62	...	...	...	...	...	...	...	87·72	...	...	5,543
B. 208	Series I	19,237	33·49	7·44	none	59·50	1·0933	2·328	·034	·174	91·80	1·46	4,082	9,503
	„ II	17,908	23·01	5·45	·89	58·75	1·0933	2·347	·034	·155	92·55	1·45	2,770	6,501
	mean	18,572	28·25	...	...	...	...	...	...	...	92·18	...	...	8,002
B. 376	Series I	14,115	29·60	6·64	·57	59·50	1·0822	2·082	·041	·117	92·95	1·97	3,645	7,589
	„ II	18,552	29·06	5·69	2·75	58·81	1·0831	2·041	·041	·221	90·19	2·01	3,534	7,213
	mean	16,333	29·33	...	...	...	...	...	...	...	91·57	...	...	7,401
B. 379	Series I	16,615	22·43	6·45	2·83	60·75	1·0826	2·009	·040	·203	89·21	1·99	2,820	5,665
	„ II	11,575	20·94	4·95	8·60	57·75	1·0804	1·923	·042	·228	87·69	2·18	2,507	4,821
	mean	14,095	21·69	...	...	...	...	...	...	...	88·45	...	...	5,243
B. 390	...	13,470	21·52	4·24	5·11	59·50	1·0804	1·902	·044	·247	86·73	2·31	2,654	5,048
B. 393	...	14,156	24·18	10·19	2·50	60·25	1·0822	1·968	·042	·230	87·86	2·13	3,015	5,934
B. 619	Series I	25,408	23·28	7·62	3·37	55·00	1·0822	1·860	·042	·338	83·04	2·26	2,650	4,929
	„ II	24,440	20·65	5·69	3·66	52·50	1·0804	1·847	·044	·302	84·22	2·88	2,248	4,152
	mean	24,924	21·97	...	...	...	...	...	...	...	83·63	...	...	4,541

TABLE LXVI.—*Concluded.* WATERFORD PLANTATION. BURNT FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 620	14,478	28·07	8·17	4·27	60·00	1·0795	1·780	·048	·342	82·03	2·70	3,495	6,221
B. 645 ... ... Series I	14,438	24·00	8·46	·83	60·00	1·0800	1·981	·049	·152	90·79	2·48	2,987	5,917
„ II	14,276	23·23	6·61	2·21	58·38	1·0817	1·972	·043	·213	88·51	2·18	2,808	5,537
mean	14,357	23·62	...	...	...	...	...	...	...	89·65	...	...	5,727
D. 95 ... ... Series I	23,996	35·38	10·68	·50	61·50	1·0844	2·070	·042	·187	90·04	2·03	4,494	9,303
„ II	18,471	20·15	7·27	3·17	59·25	1·0822	2·028	·042	·170	90·54	2·07	2,471	5,011
mean	21,234	27·77	...	...	...	...	...	...	..	90·29	...	...	7,157
W. 2 ... ... Series I	20,568	37·18	8·32	·20	59·75	1·0822	2·028	·047	·165	90·54	2·32	4,598	9,325
„ II	17,827	21·86	6·21	·178	58·75	1·0839	2·121	·039	·127	92·74	1·84	2,654	5,629
mean	19,198	29·52	...	...	...	...	...	...	...	91·64	...	...	7,477

TABLE LXVII. WATERFORD PLANTATION. DIXON FIELD. SELECTED VARIETIES. *1st Ratoons.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in Tons per acre. Canes.	Weight in Tons per acre. Cane Tops.	Per cent. number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. 16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
Jamaica Cane	Series I.	16,416	8·72	6·11	1·72	52·55	1·0734	1·788	·071	·148	89·09	3·97	956	1,709
	„ II.	11,504	12·21	6·14	3·68	57·00	1·0731	1·686	·069	·252	84·01	4·09	14,53	2,450
	mean	13,860	10·46	...	...	...	...	...	...	...	86·35	...	...	2,079
Rock Hall Cane	Series I.	7,128	2·93	2·58	1·00	48·61	1·0676	1·565	·094	·198	84·28	6·01	298	466
	„ II.	11,388	9·53	4·12	2·25	59·75	1·0835	1·981	·038	·256	87·08	1·92	1,177	2,332
	mean	9,258	6·23	...	...	...	...	...	...	...	...	...	737	1,399
White Transparent	Series I.	13,200	9·46	5·81	3·93	54·50	1·0760	1·855	·058	·164	89·31	3·13	1,073	1,990
	„ II.	15,447	12·56	5·23	4·06	56·35	1·0729	1·703	·071	·222	85·36	4·11	1,478	2,517
	„ III.	14,976	12·49	4·95	7·14	57·75	1·0782	1·882	·051	·202	88·15	2·71	1,498	2,821
	mean	14,541	11·50	..	...	...	...	..	...	...	87·61	...	...	2,442
B. 147	Series I.	11,328	9·02	5·94	none	59·00	1·0721	1·709	·078	·186	86·62	4·56	1,112	1,902
	„ II.	11,232	7·20	5·06	8·47	56·75	1·0684	1·557	·085	·218	82·83	5·46	857	1,334
	mean	11,280	8·11	...	...	...	...	...	...	...	84·70	...	...	1,618
B. 208	Series I.	13,584	9·36	6·15	none	53·00	1·0831	2·027	·011	·195	89·57	2·02	1,026	2,080
	„ II.	14,208	7·09	5·81	„	52·00	1·0870	2·111	·036	·223	89·07	1·71	760	1,604
	mean	13,896	8·23	..	...	..	...	...	...	...	89·32	...	...	1,842
B. 376		12,240	7·39	5·40	3·77	53·75	1·0729	1·756	·073	·066	88·03	4·16	830	1,457
B. 379		10,687	5·28	5·04	7·84	48·81	1·0645	1·421	·086	·271	79·92	6·05	542	770
B. 645		12,816	8·48	5·06	5·65	54·25	1·0689	1·573	·083	·236	83·14	5·28	965	1,518
D. 95	Series I.	15,072	10·35	5·31	5·13	60·25	1·0760	1·852	·058	·167	89·17	3·13	1,298	2,404
	„ II.	14,400	8·71	4·73	15·61	54·89	1·0721	1·649	·076	·248	83·58	4·61	999	1,647
	mean	14,736	9·53	...	...	...	...	...	...	...	86·37	...	...	2,025
W. 2	Series I.	16,656	11·31	5·61	5·78	56·00	1·0738	1·829	·069	·121	90·59	3·77	1,322	2,418
	„ II.	20,208	13·78	6·06	4·53	56·25	1·0844	2·131	·041	·127	92·69	1·92	1,601	3,412
	mean	18,432	12·54	...	...	...	...	...	...	...	91·64	...	...	2,915

TABLE LXVIII. HUSBANDS PLANTATION FOUR ACRE FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in tons per acre. Canes.	Weight in tons per acre. Cane Tops.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
White Transparent	Series I	14,866	27·27	4·67	10·49	58·43	1·0787	1·857	·083	·207	86·49	4·47	3,309	6,145
	„ II	14,634	17·97	3·89	none	59·25	1·0756	1·848	·071	·146	89·49	3·84	2,217	4,097
	mean	14,750	22·62	...	...	...	...	...	...	...	87·99	...	...	5,121
B. 147	Series I	15,795	23·20	5·83	none	61·00	1·0756	1·733	·085	·247	83·92	4·90	2,948	5,109
	„ II	15,563	20·56	4·59	2·19	60·75	1·0756	1·790	·076	·199	86·68	4·25	2,601	4,656
	mean	15,679	21·88	...	...	...	...	...	...	...	85·30	...	...	4,882
B. 208	Series I	14,634	18·31	3·94	none	58·75	1·0870	2·145	·053	·172	90·51	2·47	2,216	4,753
	„ II	17,189	19·31	5·21	1·66	59·00	1·0831	2·083	·054	·126	92·05	2·59	2,357	4,910
	mean	15,911	18·81	...	...	...	...	...	...	...	...	...	...	4,831
B. 376	Series I	13,763	21·62	4·28	13·50	58·50	1·0729	1·729	·083	·183	87·67	4·80	2,641	4,566
	„ II	12,543	19·13	3·84	8·86	56·00	1·0716	1·714	·083	·164	87·40	4·84	2,240	3,839
	mean	13,153	20·37	...	...	...	...	...	...	...	...	...	...	4,202
B. 379	Series I	16,260	21·65	4·25	6·35	56·25	1·0782	1·908	·076	·151	89·37	3·98	2,530	4,827
	„ II	15,563	19·05	4·23	5·97	56·56	1·0760	1·839	·078	·160	88·54	4·24	2,244	4,127
	mean	15,911	20·35	...	...	...	...	...	...	...	...	...	...	2,477
B. 393	Series I	14,169	22·68	5·65	5·79	58·00	1·0800	1·921	·078	·183	88·04	4·06	2,729	5,242
	„ II	13,879	13·09	4·10	4·02	55·50	1·0817	1·997	·074	·157	89·63	3·71	1,505	3,005
	mean	14,024	17·88	...	...	...	...	...	...	...	88·82	...	...	4,123
B. 620	Series I	15,156	20·01	5·03	3·33	56·75	1·0773	1·824	·081	·207	86·36	4·44	2,362	4,308
	„ II	13,937	19·11	4·15	·83	55·50	1·0773	1·823	·081	·208	86·32	4·44	2,205	4,020
	mean	14,546	14·56	...	...	...	...	...	...	...	86·34	...	...	4,164
B. 645	Series I	17,711	28·28	5·65	1·61	58·25	1·0778	1·835	·079	·209	86·43	4·31	3,425	6,285
	„ II	14,459	19·31	4·54	1·97	56·50	1·0817	1·994	·077	·157	89·50	3·86	2,260	4,506
	mean	16,085	23·79	...	...	...	...	...	...	...	87·96	...	...	5,395

TABLE LXVIII.—*Concluded.* HUSBANDS PLANTATION. FOUR ACRE FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
D. 95 ... ... Series I	22,938	20·12	2·93	1·00	56·89	1·0809	1·981	·077	·147	89·84	3·89	2,372	4,699
„ II	18,699	13·87	4·30	·31	55·75	1·0861	2·129	·055	·162	90·75	2·58	1,595	3,396
mean	20,818	16·99	...	...	...	...	...	...	..	...	...	...	4,047

TABLE LXIX. HAMPTON PLANTATION. TWELVE ACRE FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	15,149	16·92	4·65	5·44	58·75	1·0760	1·855	·060	·162	89·31	3·23	2,070	3,840
B. 147	11,352	10·55	3·74	1·15	63·00	1·0689	1·601	·096	·195	84·62	6·00	1,393	2,230
B. 208	16,940	16·29	5·45	3·84	55·50	1·0809	1·939	·083	·183	87·94	4·28	1,874	3,634
B. 1263	13,407	12·77	4·65	5·14	60·75	1·0712	1·680	·125	·145	86·16	7·44	1,622	2,725
B. 1264	11,326	15·62	5·51	9·65	57·25	1·0791	1·878	·057	·223	87·02	3·04	1,857	3,487
B. 1268	12,100	16·75	4·54	4·58	58·50	1·0765	1·860	·054	·174	89·08	2·90	2,038	3,791
B. 3591	12,971	13·07	4·11	3·94	59·64	1·0747	1·758	·063	·221	86·09	3·58	1,625	2,857
B. 3592	13,310	13·01	4·11	2·14	58·50	1·0707	1·661	·073	·204	85·71	4·39	1,592	2,644
B. 3597	13,746	13·87	4·00	4·05	59·00	1·0756	1·811	·054	·200	87·70	2·98	1,704	3,086
B. 3604	13,794	13·72	3·78	5·00	55·25	1·0743	1·769	·071	·190	87·14	4·01	1,317	2,330
B. 3605	10,745	11·78	6·27	8·64	59·43	1·0671	1·545	·083	·218	83·69	5·37	1,469	2,270
B. 3611	14,084	15·45	5·08	5·21	58·00	1·0725	1·732	·071	·181	87·30	4·10	1,871	3,241
B. 3612	11,617	12·50	5·05	8·57	58·75	1·0689	1·638	·076	·178	86·58	4·64	1,539	2,521
B. 3613	13,455	13·40	4·41	6·40	55·75	1·0694	1·635	·075	·194	85·87	4·59	1,564	2,557

TABLE LXX. OUGHTERSON PLANTATION. MACARONI FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	11,033	23·33	2·59	3·55	60·50	1·0831	2·103	·045	·115	92·93	2·14	2,919	6,139
B. 147	14,518	24·19	7·26	none	62·25	1·0813	2·049	·046	·122	92·42	2·24	3,119	6,391
B. 519	11,672	20·30	6·40	5·63	59·50	1·0835	2·072	·046	·157	91·08	2·22	2,497	5,174
B. 554	15,272	18·02	6·25	none	59·54	1·0725	1·742	·089	·153	87·80	5·11	2,241	3,904

TABLE LXXI. PINE PLANTATION. NINE ACRE FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per Acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16\cdot6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	12,341	20·67	2·54	12·82	58·29	1·0804	1·939	·062	·192	88·42	3·20	2,498	4,844
B. 147	13,470	24·52	3·82	9·97	63·00	1·0800	1·866	·064	·152	85·52	3·43	3,204	5,979
B. 1143	18,713	31·94	7·72	1·07	55·75	1·0809	1·955	·052	·198	88·66	2·66	3,690	7,214
B. 1809	16,697	34·95	5·92	6·12	64·75	1·0773	1·792	·066	·254	84·85	3·63	4,705	8,431
B. 1836	11,817	18·36	6·30	·68	60·25	1·0773	1·881	·062	·169	89·06	3·30	2,301	4,328
B. 2125	15,405	23·54	3·28	4·89	61·54	1·0817	1·959	·050	·219	87·93	2·60	3,000	5,877
B. 2133	16,132	26·83	7·63	5·66	60·75	1·0822	1·926	·063	·251	85·98	3·27	3,373	6,496
B. 3195	21,577	13·84	3·82	2·19	55·50	1·0716	1·711	·083	·167	87·25	4·85	1,548	2,649
B. 3198	19,278	31·72	5·76	none	54·75	1·0765	1·884	·073	·131	90·23	3·87	3,614	6,809
B. 3460	16,414	17·91	7·20	,,	56·75	1·0773	1·869	·063	·180	88·49	3·37	2,114	3,951
B. 3465	16,894	20·24	5·19	1·63	58·50	1·0817	2·020	·046	·162	90·66	2·28	2,453	4,955
B. 3468	13,683	22·51	6·81	3·70	59·25	1·0760	1·875	·065	·137	90·27	3·47	2,776	5,205
B. 3470	13,027	11·47	4·03	3·00	53·75	1·0815	1·981	·056	·185	89·15	2·83	1,277	2,530
B. 3473	16,132	18·51	7·27	none	56·00	1·0835	2·077	·042	·156	91·30	2·02	2,143	4,451
B. 3475	17,866	21·35	6·00	,,	56·71	1·0828	2·085	·060	·112	92·38	2·88	2,505	5,223
B. 3523	18,149	19·95	9·07	·66	56·75	1·0831	2·096	·050	·117	92·62	2·38	2,341	4,907
B. 3531	15,824	20·78	6·82	2·30	59·50	1·0826	2·070	·060	·122	91·92	2·90	2,558	5,296
B. 3564	16,103	21·77	6·23	6·23	59·38	1·0795	1·931	·069	·170	88·98	3·57	2,683	5,181
B. 3584	16,253	26·18	7·87	·49	59·00	1·0853	2·125	·040	·158	91·48	1·88	3,188	6,775
B. 3595	4,788	5·57	1·76	14·15	54·50	1·0738	1·727	·081	·211	85·54	4·69	633	1,092

TABLE LXXII. SUNBURY PLANTATION.—DODDS FIELD.

SELECTED VARIETIES.

Plant Canes.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16\cdot6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent...	13,874	24·13	6·93	1·71	61·00	1·0813	2·014	·049	·154	90·85	2·43	3,049	6,141
B. 147	13,874	24·04	7·11	none	63·50	1·0804	1·933	·054	·206	88·14	2·79	3,164	6,116
B. 3502	12,426	16·52	6·48	,,	59·75	1·0791	1·928	·055	·175	89·34	2·85	2,048	3,949
B. 3509	20,770	22·78	7·29	,,	58·50	1·0875	2·169	·041	·172	91·06	1·89	2,744	5,952
B. 3546	20,026	16·39	6·89	,,	57·50	1·0879	2·203	·041	·149	92·06	1·86	1,940	4,274

TABLE LXXIII. HENLEY PLANTATION. ABOVE TODDS FIELD. SELECTED VARIETIES. *Plant Canes.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in Tons per acre. Canes.	Weight in Tons per acre. Cane Tops.	Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Normal Juice. Lb. per gallon. Saccharose.	Normal Juice. Lb. per gallon. Glucose.	Normal Juice. Lb. per gallon. Solids not Sugar.	Normal Juice. Quotient of Purity.	Normal Juice. Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
Scaly Seedling	Series I.	22,647	24·76	5·18	1·76	62·00	1·0778	1·57	·100	·445	74·33	6·34	3,190	5,034
	„ II.	22,647	27·35	7·36	·76	58·15	1·0765	1·761	·104	·223	84·34	5·91	3,309	5,827
	mean	22,647	26·05	...	...	...	...	...	...	...	77·83	...	...	5,430
White Transparent	Series I.	11,614	12·57	3·63	3·38	61·00	1·0769	1·853	·069	·178	88·24	3·72	1,595	2,955
	„ II.	14,634	18·04	5·76	1·18	58·44	1·0813	2·023	·046	·148	91·25	2·27	2,184	4,418
	mean	13,124	15·30	...	...	...	...	...	...	...	89·74	...	...	3,686
B. 147	Series I.	12,601	17·37	8·30	none	64·32	1·0749	1·814	·071	·162	88·62	3·91	2,328	4,223
	„ II.	14,111	15·04	6·74	„	63·00	1·0729	1·735	·073	·187	86·97	4·21	1,978	3,432
	mean	13,356	16·20	...	...	...	...	...	...	...	87·79	...	...	3,827
B. 208	Series I.	17,421	23·33	5·57	none	63·25	1·0844	2·111	·042	·146	91·82	1·99	3,048	6,434
	„ II.	15,621	16·59	5·34	·37	62·00	1·0848	2·096	·046	·169	90·70	2·19	2,124	4,452
	mean	16,521	19·96	...	...	...	...	...	...	...	91·26	...	...	5,443
B. 376	Series I.	12,137	17·24	3·76	none	62·75	1·0756	1·861	·066	·138	90·12	3·55	2,253	4,193
	„ II.	14,692	23·02	7·60	1·56	62·25	1·0747	1·805	·075	·162	88·39	4·16	2,987	5,391
	mean	13,414	20·13	...	...	...	...	...	...	...	89·26	...	...	4,792
B. 379	Series I.	14,750	10·37	2·59	none	62·00	1·0778	1·902	·055	·166	89·59	2·89	1,336	2,541
	„ II.	15,214	18·15	4·28	5·76	62·25	1·0778	1·926	·056	·141	90·72	2·91	2,348	4,522
	mean	14,482	14·26	...	...	...	...	...	...	...	90·15	...	...	3,531
B. 390	Series I.	16,724	22·55	6·87	2·70	62·98	1·0756	1·857	·065	·143	89·92	3·50	2,958	5,493
	„ II.	16,085	19·57	6·09	4·81	61·25	1·0778	1·882	·048	·193	88·65	2·55	2,491	4,688
	mean	16,404	21·06	...	...	...	...	...	...	...	89·28	...	...	5,090
B. 393	Series I.	16,956	19·29	8·84	none	61·75	1·0787	1·949	·050	·148	90·78	2·57	2,473	4,820
	„ II.	14,924	15·37	6·43	2·65	58·25	1·0782	1·897	·060	·178	88·85	3·16	1,860	3,528
	mean	10,940	17·33	...	...	...	...	...	...	...	89·81	...	...	4,174
B. 619		14,924	14·13	5·71	1·53	55·84	1·0787	1·819	·045	·283	84·72	2·47	1,638	2,980

TABLE LXXIII.—*Concluded.*

HENLEY PLANTATION.
ABOVE TODDS FIELD.

SELECTED VARIETIES.
Plant Canes.

Number or Name of Seedling.		Number of Canes per acre.	Weight in tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 635	Series I	20,557	12·18	5·06	none	59·00	1·0751	1·750	·063	·240	85·24	3·60	1,498	2,622
	„ II	22,067	13·92	5·34	·26	55·25	1·0756	1·827	·078	·160	88·47	4·27	1,602	2,927
	mean	21,307	13·05	...	...	...	...	...	...	...	86·85	...	...	2,774
D. 95	Series I	15,853	17·24	6·74	1·80	62·00	1·0751	1·800	·069	·184	87·68	3·83	2,227	4,009
	„ II	17,421	17·37	9·33	10·18	59·70	1·0765	1·882	·083	·123	90·13	4·41	2,158	4,061
	mean	16,637	17·80	...	...	...	...	...	...	...	88·90	...	...	4,035

TABLE LXXIV. HENLEY PLANTATION. LONG FIELD. SELECTED VARIETIES. *1st Ratoons.*

Number or Name of Seedling.		Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16\cdot6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Jamaica Cane	Series I	22,009	21·65	7·13	4·77	63·66	1·0718	1·823	·069	·075	92·68	3·78	2,880	5,250
	„ II	16,260	16·82	5·05	3·11	60·50	1·0760	1·887	·050	·140	90·85	2·65	2,119	3,999
	mean	19,134	19·23	...	...	...	...	...	...	...	91·76	...	...	4,624
Rock Hall Cane	Series I	15,911	18·41	4·98	·72	62·06	1·0745	1·835	·066	·135	90·13	3·60	2,381	4,369
	„ II	15,911	13·35	4·41	·72	61·00	1·0721	1·774	·070	·129	89·91	3·95	1,702	3,019
	mean	15,911	15·88	...	...	...	...	...	...	...	...	...	...	3,694
Sealy Seedling	Series I	19,105	17·27	4·69	none	63·25	1·0747	1·693	·104	·245	82·91	6·14	2,276	3,853
	„ II	23,634	20·87	5·83	·49	61·70	1·0716	1·669	·089	·203	85·11	5·33	2,691	4,491
	mean	21,369	19·07	...	...	...	...	...	...	...	84·01	...	...	4,172
White Transparent	Series I	11,440	9·72	2·59	none	61·30	1·0729	1·756	·067	·172	88·02	3·82	1,244	2,184
	„ II	10,917	12·18	2·72	2·59	62·10	1·0747	1·808	·076	·158	88·54	4·20	1,577	2,851
	mean	11,168	10·95	...	...	...	...	...	...	...	88·78	...	...	2,518
B. 147	Series I	6,620	6·58	2·90	none	63·14	1·0751	1·754	·063	·236	85·44	3·59	866	1,519
	„ II	6,323	4·90	1·44	„	62·25	1·0703	1·673	·074	·180	86·82	4·42	638	1,067
	mean	6,471	5·74	...	...	...	...	...	...	...	86·13	...	...	1,293
B. 208	Series I	18,292	18·54	3·55	1·26	63·50	1·0826	2·075	·044	·133	92·14	2·12	2,435	5,053
	„ II	14,052	11·41	4·02	1·22	61·03	1·0809	2·010	·042	·153	91·16	2·09	1,440	2,894
	mean	16,172	14·97	...	...	...	...	...	...	..	91·65	...	...	3,973
B. 254	Series I	11,208	11·56	4·54	1·53	61·21	1·0699	1·638	·102	·175	85·54	6·23	1,482	2,428
	„ II	8,943	7·62	3·11	5·52	59·75	1·0725	1·750	·069	·165	88·21	3·94	951	1,664
	mean	10,075	9·59	...	...	...	...	...	...	...	86·87	...	...	2,046
B. 373	Series I	10,104	8·32	3·58	none	61·00	1·0716	1·754	·076	·131	89·44	4·33	1,061	1,861
	„ II	31,356	29·16	7·78	„	60·00	1·0712	1·625	·125	·200	83·33	7·69	3,659	5,946
	mean	20,730	18·74	...	...	...	...	...	...	...	86·38	...	...	3,903

TABLE LXXIV.—*Concluded.* HENLEY PLANTATION. LONG FIELD. SELECTED VARIETIES. *1st Ratoons.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 376	14,692	17·37	3·24	none	61·25	1·0718	1·758	·070	·189	89·37	3·98	2,223	3,908
B. 379 ... ... Series I	19,163	19·70	5·34	3·23	57·75	1·0743	1·842	·068	·120	90·74	3·69	2,372	4,369
„ II	18,873	20·87	4·67	1·22	60·00	1·0729	1·792	·066	·137	89·82	3·68	2,614	4,684
mean	19,018	20·28	...	...	...	...	...	...	...	90·28	...	...	4,526
B. 390	18,409	17·24	2·85	·94	60·21	1·0738	1·772	·070	·177	87·77	3·95	2,165	3,836
B. 619	6,968	3·14	1·76	none	51·98	1·0751	1·738	·069	·246	84·66	3·96	340	591
B. 635	10,627	5·70	2·98	1·61	59·00	1·0718	1·693	·083	·191	86·07	4·90	703	1,190
D. 95 ... ... Series I	21,137	19·18	3·71	2·15	62·50	1·0767	1·871	·057	·166	89·35	3·05	2,495	4,668
„ II	20,441	18·25	5·24	·84	61·75	1·0756	1·829	·062	·174	88·57	3·39	2,347	4,293
mean	20,789	18·71	...	...	...	...	...	...	...	88·96	...	...	4,480

TABLE LXXV.

MEAN RESULTS OBTAINED ON NINE ESTATES, EIGHT BLACK AND ONE RED SOIL, WITH THE BELOW MENTIONED SEVEN SELECTED VARIETIES OF SUGAR CANE.

Plant Canes.

Number or Name of Seedling.	Number of Plots.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity	Glucose Ratio.		
Sealy Seedling	4	20,004	23·14	4·57	3·82	59·91	1·0789	1·755	·075	·322	80·78	4·39	2,878	5,022
White Transparent	20	14,495	20·52	4·79	4·93	60·11	1·0805	1·966	·059	·170	89·52	3·05	2,559	5,023
B. 147	20	14,557	21·90	5·98	2·05	62·11	1·0779	1·861	·064	·207	87·06	3·50	2,731	5,125
B. 208	10	17,120	20·30	5·12	1·42	58·42	1·0869	2·151	·046	·168	90·90	2·19	2,518	5,352
B. 376	9	13,952	21·48	4·80	5·36	59·73	1·0784	1·915	·059	·170	89·68	3·15	2,633	5,067
B. 635	4	18,954	11·60	4·44	1·30	53·62	1·0784	1·865	·058	·218	87·13	3·13	1,304	2,416
D. 95	8	17,391	17·55	5·94	6·65	58·82	1·0802	1·952	·061	·173	89·21	3·20	2,147	4,272

TABLE LXXVI.

MEAN RESULTS OBTAINED ON FOUR ESTATES, THREE BLACK AND ONE RED SOIL, WITH THE BELOW MENTIONED TEN SELECTED VARIETIES OF SUGAR CANE.

(*Ratoons.*)

Number or Name of Seedling.	Number of Plots.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. $\frac{30°C.}{16·6°C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Jamaica Cane	6	15,495	12·73	5·45	2·32	56·74	1·0771	1·890	·057	·161	89·64	3·06	1,547	2,884
Rock Hall Cane	6	11,361	8·52	3·55	1·37	55·90	1·0748	1·787	·066	·193	87·31	5·79	1,056	1,937
White Transparent	11	12,862	11·17	3·97	2·83	57·89	1·0797	1·941	·060	·174	89·09	3·22	1,884	2,587
B. 147	9	11,803	10·33	4·61	1·08	59·73	1·0746	1·776	·070	·192	87·00	3·98	1,296	2,338
B. 208	8	14,655	9·51	4·02	·51	54·58	1·0854	2·097	·040	·191	90·12	1·90	1,106	2,307
B. 376	2	13,466	12·38	4·32	1·89	57·50	1·0724	1·757	·072	·103	88·70	4·07	1,527	2,633
B. 379	7	14,733	10·97	4·27	2·77	53·37	1·0790	1·921	·055	·180	88·88	3·03	1,264	1,969
B. 390	5	13,982	9·77	3·76	1·64	52·12	1·0806	1·948	·048	·207	88·46	2·47	1,099	2,099
B. 635	2	12,412	4·64	3·30	·81	52·50	1·0750	1·758	·065	·229	85·73	3·71	523	907
D. 95	4	17,763	14·12	4·75	5·75	59·84	1·0751	1·800	·063	·189	87·67	3·55	1,785	3,253

TABLE LXXVII.

MEAN RESULTS OBTAINED ON EIGHT BLACK SOIL ESTATES WITH THE BELOW MENTIONED NINE SELECTED VARIETIES OF SUGAR CANE.

Plant Canes.

Number or Name of Seedling.	Number of Plots.	Number of Canes per acre.	Weight in tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon.			Quotient of Purity.	Glucose Ratio.		
								Saccharose.	Glucose.	Solids not Sugar.				
Sealy Seedling	2	17,362	20·23	2·87	6·38	59·75	1·0806	1·841	·049	·309	83·72	2·61	2,506	4,613
Sport White	7	14,043	24·23	5·94	6·49	63·01	1·0792	1·875	·065	·220	86·79	3·50	3,172	5,942
White Transparent	18	14,092	21·10	4·80	5·23	60·16	1·0806	1·969	·059	·171	89·49	3·05	2,633	5,172
B. 147	18	14,691	22·53	5·82	2·28	61·94	1·0784	1·871	·063	·210	86·98	3·44	2,795	5,269
B. 208	8	17,270	20·38	5·03	1·73	57·37	1·0874	2·163	·047	·170	90·81	2·22	2,502	5,329
B. 376	7	13,849	21·87	4·55	6·66	57·69	1·0793	1·938	·056	·175	89·66	2·95	2,637	5,145
B. 635	2	16,097	10·14	3·67	2·46	50·12	1·0816	1·942	·045	·235	87·41	2·32	1,057	2,056
B. 645	6	14,512	22·44	5·48	2·79	58·56	1·0811	1·962	·055	·193	88·75	2·85	2,719	5,322
D. 95	6	17,642	17·63	5·24	6·87	58·15	1·0816	1·989	·056	·180	89·31	2·90	2,132	4,351

TABLE LXXVIII.

MEAN RESULTS OBTAINED ON THREE BLACK SOIL ESTATES WITH THE BELOW MENTIONED TEN SELECTED VARIETIES OF SUGAR CANE.

(*Ratoons.*)

Number or Name of Seedling.	Number of Plots.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon			Quotient of Purity.	Glucose Ratio.		
								Saccharose.	Glucose.	Solids not Sugar.				
Jamaica Cane	4	13,675	9·47	5·13	1·51	54·07	1·0788	1·907	·055	·187	88·57	2·99	1,070	2,014
Rock Hall Cane	4	9,085	4·83	2·98	1·69	53·09	1·0756	1·778	·064	·223	85·95	3·80	563	1,058
White Transparent...	9	13,236	11·22	4·26	3·17	57·04	1·0810	1·979	·058	·176	89·27	3·05	1,341	2,602
B. 147	7	13,327	11·65	5·20	1·39	58·89	1·0752	1·795	·071	·187	87·25	3·97	1,452	2,637
B. 208	6	14,150	7·68	4·10	·10	52·02	1·0867	2·115	·038	·208	89·61	1·83	829	1,751
B. 376	1	12,240	7·39	5·40	3·77	53·75	1·0729	1·756	·073	·066	88·03	4·16	830	1,457
B. 379	5	13,019	7·24	3·97	2·99	51·17	1·0811	1·963	·050	·201	88·25	2·77	772	1,546
B. 390	4	12,875	7·91	3·98	1·81	50·10	1·0823	1·992	·042	·215	88·60	2·10	833	1,664
B. 635	1	14,196	3·58	3·62	...	46·00	1·0782	1·823	·046	·266	85·39	2·52	342	623
D. 95	2	14,736	9·53	5·02	10·37	57·57	1·0740	1·750	·067	·207	86·37	3·87	1,148	2,025

TABLE LXXIX.

MEAN RESULTS OBTAINED ON ONE RED SOIL ESTATE WITH THE BELOW MENTIONED ELEVEN SELECTED VARIETIES OF SUGAR CANE.

Plant Canes.

Number or Name of Seedling.	Number of Plots.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
White Transparent	2	13,124	15·31	4·70	2·28	59·72	1·0791	1·938	·058	·163	89·75	3·00	1,890	3,687
Sealy Seedling	2	22,647	26·06	6·27	1·27	60·08	1·0772	1·670	·102	·334	77·84	6·13	3,250	5,431
B. 147	2	13,356	16·26	7·52	none	63·66	1·0739	1·775	·072	·175	87·80	4·06	2,153	3,828
B. 208	2	16,521	19·96	5·46	·19	62·63	1·0846	2·104	·044	·158	91·26	2·09	2,586	5,443
B. 376	2	13,415	20·13	5·68	·78	62·50	1·0752	1·833	·071	·150	89·76	3·86	2,620	4,792
B. 379	2	14,982	14·26	3·49	2·88	62·13	1·0778	1·914	·056	·154	90·16	2·90	1,842	3,532
B. 390	2	16,405	21·06	6·48	3·76	62·12	1·0767	1·870	·057	·168	89·29	3·03	2,675	5,091
B. 393	2	10,940	17·33	7·64	1·33	60·00	1·0785	1·923	·055	·163	89·82	2·87	2,167	4,174
B. 619	1	14,924	14·13	5·71	1·53	55·84	1·0787	1·819	·045	·283	84·72	2·47	1,638	2,980
B. 635	2	21,862	13·58	5·20	·13	57·18	1·0754	1·789	·071	·200	86·86	3·94	1,550	2,775
D. 95	2	16,637	17·31	8·04	5·99	60·85	1·0758	1·841	·076	·154	88·91	4·12	2,193	4,035

Table LXXX.

Mean Results obtained on One Red Soil Estate with the below mentioned Fourteen Selected Varieties of Sugar Cane.

(*Ratoons.*)

Number or Name of Seedling.	Number of Plots.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
			Canes.	Cane Tops.			Sp. Gr. $\frac{30°C.}{16·5°C.}$	Lb. per gallon. Saccharose.	Lb. per gallon. Glucose.	Lb. per gallon. Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Jamaica Cane	2	19,135	15·24	6·09	3·94	62·08	1·0739	1·855	·060	·108	91·77	3·22	2,500	4,624
Rock Hall Cane	2	15,911	15·88	4·70	·72	61·58	1·0733	1·805	·068	·132	90·02	3·78	2,042	3,694
Scaly Seedling...	2	21,370	19·07	5·26	·25	62·48	1·0732	1·681	·097	·224	84·01	5·74	2,984	4,172
White Transparent	2	11,179	10·35	2·66	1·30	61·70	1·0738	1·782	·072	·165	88·28	4·01	1,411	2,518
B. 147	2	6,472	5·71	2·17	...	62·70	1·0727	1·714	·068	·208	86·13	4·01	702	1,293
B. 208	2	16,172	14·98	3·79	1·74	62·27	1·0817	2·047	·043	·143	91·65	2·10	1,938	3,973
B. 254	2	10,075	9·59	3·82	3·52	60·48	1·0712	1·694	·085	·170	86·87	5·08	1,216	2,046
B. 373	2	20,730	18·74	5·68	...	60·50	1·0714	1·689	·100	·165	86·38	6·01	2,360	3,903
B. 376	1	14,692	17·37	3·24	...	61·25	1·0718	1·758	·070	·139	89·37	3·98	2,223	3,908
B. 379	2	19,018	20·29	5·00	2·22	58·87	1·0736	1·817	·067	·128	90·28	3·68	2,493	4,527
B. 390	1	18,409	17·21	2·85	·94	60·21	1·0738	1·772	·070	·177	87·77	3·95	2,165	3,836
B. 619	1	6,968	3·14	1·76	...	51·98	1·0751	1·738	·069	·246	84·66	3·96	340	591
B. 635	1	10,627	5·70	2·98	1·61	59·00	1·0718	1·693	·083	·191	86·07	4·90	703	1,190
D. 95	2	20,789	18·71	4·47	1·49	62·12	1·0761	1·850	·059	·170	88·96	3·22	2,421	4,480

TABLE LXXXI. WATERFORD PLANTATION, SANDY FIELD. VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. / 16·6°C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
Crystalline Cane	12,240	17·56	5·42	9·93	62·50	1·0765	1·881	·077	·130	90·09	4·09	2,284	4,296
La Purple	12,240	13·50	4·82	none	57·96	1·0795	1·991	·065	·114	91·75	3·26	1,624	3,233
La Striped	11,040	7·07	8·79	„	52·81	1·0778	1·886	·074	·163	88·84	3·92	776	1,464
La Tib Merd	14,400	14·46	2·41	14·89	60·63	1·0782	1·926	·076	·133	90·21	3·95	1,822	3,509
Ribbon Sport ... ... Series I	13,464	15·75	5·46	9·66	58·50	1·0778	1·852	·059	·212	87·24	3·19	1,915	3,547
„ II	15,175	19·29	4·69	11·61	58·00	1·0765	1·808	·102	·178	86·59	5·64	2,328	4,209
„ III	12,639	15·94	3·45	13·50	60·25	1·0778	1·847	·069	·207	87·00	3·74	1,997	3,688
mean	13,759	16·99	...	..	...	...	...	...	...	86·94	...	...	3,815
Red Cane—Husbands—Sport	12,384	16·07	8·49	8·51	58·33	1·0782	1·905	·071	·159	89·23	3·73	1,948	3,711
Striped Jamaica	14,496	21·77	6·21	1·95	59·50	1·0787	1·938	·069	·140	90·27	3·56	2,693	5,219
White Sport ... ... Series I	12,320	21·96	4·04	11·49	60·75	1·0769	1·771	·081	·248	84·33	4·57	2,775	4,915
„ II	17,085	27·55	4·93	4·47	63·49	1·0813	1·910	·083	·224	86·15	4·35	3,624	6,922
„ III	10,656	16·07	4·76	none	63·00	1·0804	1·952	·057	·184	89·01	2·92	2,099	4,097
mean	13,354	21·86	..	...	...	...	...	...	...	86·49	...	...	5,311
B. 1169	17,616	20·53	6·02	5·17	58·57	1·0716	1·664	·078	·219	84·85	4·69	2,513	4,181
B. 1230	20,256	30·54	5·78	7·05	59·00	1·0738	1·732	·066	·221	85·79	3·81	3,758	6,509
B. 2455	17,952	19·71	3·73	10·74	66·24	1·0658	1·531	·102	·179	84·49	6·66	2,745	4,203
B. 2510	8,496	9·32	2·68	20·27	61·75	1·0699	1·635	·122	·158	85·38	7·46	1,205	1,970
B. 2550	15,936	16·97	5·25	none	64·75	1·0773	1·891	·066	·155	89·54	3·49	2,285	4,321
B. 2649	13,200	22·50	6·51	5·82	60·75	1·0760	1·834	·074	·169	88·30	4·03	2,846	5,220
B. 2650	16,171	22·25	6·18	3·31	62·50	1·0809	2·033	·030	·142	92·20	1·48	2,882	5,859
B. 2652	15,456	21·21	6·02	12·26	63·00	1·0716	1·686	·107	·168	85·98	6·35	2,794	4,711
B. 2663	18,288	17·87	4·95	2·31	58·25	1·0826	2·040	·054	·158	90·59	2·65	2,154	4,394

TABLE LXXXI.—*Continued.*

WATERFORD PLANTATION.
SANDY FIELD.

VARIETIES.
Plant Canes.

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per Acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 20° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 2664	14,040	15·91	4·34	2·50	60·50	1·0782	1·925	·075	·135	90·16	3·90	2,000	3,850
B. 2668	13,680	17·52	8·29	none	59·00	1·0738	1·733	·086	·200	85·83	4·96	2,156	3,736
B. 2674	9,024	13·89	4·71	„	61·25	1·0756	1·792	·093	·180	86·78	5·19	1,771	3,075
B. 2712	11,040	14·01	4·50	„	64·75	1·0813	2·028	·050	·139	91·48	2·47	1,880	3,813
B. 2723	23,040	10·93	2·57	2·44	60·00	1·0747	1·795	·078	·169	87·90	4·35	1,367	2,452
B. 2725 ... ... Series I	13,104	11·25	3·60	9·90	62·66	1·0760	1·759	·116	·202	84·69	6·60	1,468	2,582
„ II	21,408	21·00	6·53	3·67	61·50	1·0791	1·993	·050	·115	92·35	2·51	2,681	5,343
mean	17,256	16·12	...	...	...	...	...	...	...	88·52	...	...	3,968
B. 2728	15,360	14·96	2·40	·93	55·25	1·0778	1·912	·034	·177	90·06	1·78	1,717	3,283
B. 2740	10,944	8·16	3·28	none	55·75	1·0716	1·717	·085	·159	87·56	4·95	951	1,633
B. 2748	13,846	13·25	4·25	11·34	60·75	1·0765	1·848	·085	·155	88·51	4·60	1,675	3,095
B. 2759	7,704	10·77	3·21	none	59·75	1·0813	1·942	·083	·192	87·60	4·27	1,333	2,589
B. 2763	16,608	16·71	3·43	„	58·25	1·0853	2·066	·063	·194	88·94	3·05	2,009	4,151
B. 2768	13,344	17·46	7·39	·71	57·75	1·0817	2·023	·042	·163	90·80	2·08	2,089	4,226
B. 2769	12,436	17·07	5·44	7·76	61·25	1·0778	1·881	·071	·171	88·60	3·77	2,172	4,086
B. 2775	11,760	16·25	4·64	none	58·75	1·0826	2·030	·070	·152	90·14	3·45	1,975	4,009
B. 2807	15,120	12·69	4·86	·93	53·75	1·0835	2·101	·034	·140	92·36	1·62	1,410	2,962
B. 2810	18,000	19·03	5·81	4·60	60·25	1·0804	2·036	·034	·123	92·84	1·67	2,377	4,840
B. 2819	16,080	19·82	6·77	none	61·00	1·0778	1·965	·034	·124	92·56	1·73	2,513	4,938
B. 2821	14,208	20·06	5·46	1·00	59·50	1·0778	1·972	·034	·117	92·89	1·72	2,480	4,891
B. 2824	28,080	23·36	7·46	4·25	58·00	1·0848	2·125	·034	·152	91·95	1·60	2,797	5,944
B. 2836	21,060	22·90	6·56	1·68	57·50	1·0853	2·135	·034	·134	92·77	1·58	2,718	5,857
B. 2863	15,984	20·89	6·21	·89	58·25	1·0822	2·062	·038	·140	92·05	1·84	2,519	5,194
B. 2865	17,424	20·61	7·22	1·62	56·25	1·0760	1·861	·050	·166	89·60	2·69	2,404	4,474
B. 2885	18,096	18·30	3·72	2·33	60·00	1·0773	1·900	·050	·162	89·96	2·63	2,283	4,338

TABLE LXXXI.—*Continued.* WATERFORD PLANTATION. SANDY FIELD. VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose ℔. per acre.
							Lb. per gallon.						
		Canes.	Cane Tops.			Sp. Gr. $\frac{50^\circ C.}{16{\cdot}6^\circ C.}$	Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 2886	14,976	18·34	6·39	9·56	57·50	1·0822	2·030	·041	·169	90·63	2·02	2,183	4,431
B. 2901	14,448	23·72	6·32	10·15	61·65	1·0671	1·575	·077	·194	85·37	4·89	3,067	4,831
B. 2934	14,688	16·82	4·32	16·94	59·50	1·0756	1·819	·063	·183	88·09	3·46	2,085	3,791
B. 2938	19,104	27·02	5·44	1·73	55·75	1·0782	1·939	·052	·144	90·82	2·68	3,129	6,067
B. 2942	15,792	21·24	6·77	5·46	56·46	1·0782	1·936	·036	·163	90·68	1·86	2,491	4,823
B. 2945	22,017	22·46	7·75	10·90	58·70	1·0740	1·793	·067	·160	88·59	3·74	2,749	4,929
B. 2953	12,768	12·49	5·79	12·21	54·52	1·0773	1·923	·034	·155	91·05	1·77	1,416	2,723
B. 3007	16,159	16·76	5·33	8·18	56·23	1·0791	1·920	·069	·169	88·97	3·59	1,956	3,755
B. 3013	23,232	27·84	8·29	11·68	59·75	1·0749	1·790	·077	·180	87·45	4·30	3,466	6,204
B. 3052	18,885	19·90	4·82	4·48	55·75	1·0782	1·933	·037	·165	90·54	1·91	2,305	4,456
B. 3054	19,080	16·07	6·16	3·05	58·00	1·0817	1·944	·052	·232	87·25	2·67	1,930	3,752
B. 3060	16,752	20·70	6·79	·57	55·50	1·0861	2·166	·033	·097	94·33	1·52	2,369	5,131
B. 3078	14,040	14·46	3·29	10·34	57·75	1·0614	1·401	·107	·190	82·51	7·64	1,763	2,470
B. 3084	19,008	11·57	4·69	5·04	55·75	1·0662	1·542	·091	·190	84·59	5·90	1,355	2,089
B. 3089	14,125	12·40	5·14	13·44	55·75	1·0632	1·482	·100	·162	84·98	6·75	1,456	2,158
B. 3098	15,408	13·50	5·25	18·94	54·00	1·0773	1·826	·084	·202	86·46	4·60	1,516	2,768
B. 3102	18,336	16·50	6·39	11·16	56·50	1·0782	1·894	·060	·181	88·71	3·17	1,937	3,669
B. 3105 ... ... Series I.	18,240	8·79	2·68	6·17	55·50	1·0725	1·704	·076	·204	85·89	4·46	1,018	1,735
" II.	14,040	12·05	8·04	8·24	55·25	1·0747	1·769	·063	·210	86·63	3·56	1,388	2,455
mean	16,140	10·42	...	...	...	...	...	...	...	86·26	...	...	2,095
B. 3119	14,976	11·25	2·29	20·20	55·25	1·0667	1·184	·384	·267	64·52	3·24	1,305	1,545
B. 3120	...	8·04	1·93	...	59·27	1·0835	1·912	·111	·252	84·04	5·81	985	1,883
B. 3137	18,457	18·12	4·82	5·54	59·00	1·0773	1·923	·044	·145	91·05	2·29	2,222	4,273
B. 3208	15,216	16·93	4·39	11·70	58·50	1·0787	1·895	·096	·156	88·26	5·07	2,056	3,896
B. 3211	...	...	...	...	59·50	1·0773	1·889	·089	·134	...	...	...	...

TABLE LXXXI.—*Concluded.* WATERFORD PLANTATION. SANDY FIELD. VARIETIES. *Plant Canes.*

Number or Name of Seedling.	Number of Canes per acre.	Weight in Tons per acre.		Per cent. by number of rotten Canes.	Per cent. of Juice by mill.	Normal Juice.						Gallons of Juice per acre.	Saccharose lb. per acre.
		Canes.	Cane Tops.			Sp. Gr. 30° C. 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.		
B. 3213	19,296	20·35	3·96	11·65	60·00	1·0765	1·835	·101	·152	87·88	5·50	2,542	4,665
B. 3214	11,845	15·45	4·15	17·74	57·76	1·0791	1·837	·063	·258	85·13	3·43	1,852	3,402
B. 3224	20,058	25·18	4·02	2·99	61·00	1·0802	1·938	·060	·189	88·61	3·10	3,180	6,163
B. 3233	15,378	13·66	5·17	11·54	59·75	1·0762	1·785	·077	·220	85·74	4·31	1,699	3,033
B. 3250	14,826	20·83	4·29	8·55	61·00	1·0775	1·766	·069	·282	83·42	3·91	2,642	4,666
B. 3253	14,832	21·11	5·89	7·76	57·75	1·0809	1·879	·057	·269	85·22	3·03	2,526	4,746
B. 3260	15,552	15·00	3·75	8·21	59·75	1·0784	1·714	·082	·211	85·40	4·78	1,870	3,205
B. 3266	12,898	18·73	4·75	10·43	58·50	1·0756	1·827	·069	·169	88·47	3·78	2,282	4,169
B. 3275	9,329	10·48	2·52	29·72	58·50	1·0809	1·936	·057	·212	87·80	2·94	1,271	2,461
B. 3290	12,576	15·64	5·46	17·61	62·75	1·0716	1·670	·091	·200	85·16	5·45	2,052	3,427
B. 3291	18,275	10·20	3·99	10·46	54·50	1·0795	1·941	·063	·163	89·59	3·24	1,153	2,241
B. 3296	13,941	8·47	2·78	14·46	57·00	1·0773	1·811	·068	·233	85·75	3·75	1,604	1,818
B. 3362	17,232	12·00	2·66	4·27	56·75	1·0833	1·972	·045	·252	86·91	2·28	1,408	2,777
B. 3367	21,600	15·54	2·79	7·60	57·39	1·0806	1·963	·054	·182	89·27	2·75	1,848	3,628
B. 3370	10,537	11·40	2·72	13·90	55·75	1·0765	1·780	·073	·235	85·25	4·10	1,322	2,353
B. 3373	12,189	11·59	2·18	5·20	57·25	1·0760	1·863	·063	·151	89·70	3·38	1,382	2,575
B. 3381	12,912	10·07	4·23	7·24	54·75	1·0844	2·098	·046	·155	91·26	2·19	1,139	2,390
B. 3390	19,968	23·14	5·25	3·03	57·50	1·0795	1·918	·058	·194	88·39	3·02	2,761	5,296
B. 3405	16,320	20·36	5·72	3·41	57·25	1·0760	1·834	·066	·177	88·30	3·60	2,426	4,449
B. 3412	14,080	13·93	6·13	8·81	55·50	1·0800	1·912	·057	·213	87·63	2·98	1,603	3,065
B. 3416	15,428	12·43	5·72	13·46	53·25	1·0725	1·753	·071	·160	88·36	4·05	1,382	2,423
B. 3417	13,536	11·01	5·31	9·90	55·00	1·0712	1·644	·083	·223	84·31	5·06	1,267	2,083
B. 3428	9,637	11·52	3·71	14·71	56·07	1·0743	1·785	·073	·172	87·93	4·09	1,346	2,403
B. 3447	12,192	19·71	7·65	9·61	58·00	1·0734	1·748	·076	·183	87·10	4·35	2,386	4,171
D. 625	24,432	23·81	7·78	9·75	60·00	1·0791	1·887	·053	·218	87·45	2·81	2,965	5,595

TABLE LXXXII. BLOWERS PLANTATION.—MILL POND FIELD. VARIETIES. LARGE PLOTS.

		Canes. Tons per acre.	Per cent. of Juice by mill.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
50 lb. nitrogen as sulphate of ammonia 75 „ potash as sulphate	(B. 208)	28·16	53·84	1·0839	2·067	·042	·178	90·38	2·03	3,133	6,476
50 „ nitrogen as sulphate of ammonia 75 „ potash as sulphate	(White Transparent)	32·22	54·63	1·0729	1·727	·057	·211	86·57	3·30	3,675	6,347

TABLE LXXXIII. VARIOUS PLANTATIONS. VARIETIES. LARGE PLOTS.

		Date.	Area reaped.	Normal Juice. Sp. Gr. 30° C. / 16·6° C.	Lb. per gallon. Saccharose.	Glucose.	Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
White Transparent	Estate No. 5...	26. 2. 03	...	1·0795	1·878	·075	·217	86·54	3·99	2,472	4,642
	" " 7...	27. 2. 03	...	1·0751	1·793	·068	·192	87·34	3·79	2,960	5,307
	" " " ...	1. 4. 03	...	1·0795	1·975	·050	·145	91·01	2·53	4,000	7,900
	mean of Estate No. 7...	...	...	1·0773	1·884	·059	·169	89·18	3·16	3,480	6,604
	Estate No. 10...	10. 3. 03	...	1·0738	1·761	·083	·175	87·22	4·71	1,970	3,469
	" " 12...	20. 3. 03	396 holes	1·0756	1·869	·071	·125	90·51	3·80	2,748	5,196
	" " 13...	20. 3. 03	½ acre ...	1·0721	1·754	·100	·119	88·90	5·70	2,000	3,508
	" " 14...	31. 3. 03	...	1·0747	1·776	·063	·203	86·97	3·55	2,880	4,443
	" " 16...	27. 3. 03	1⅕ acre ...	1·0765	1·875	·062	·151	89·80	3·31	2,526	4,736
	" " " ...	30. 3. 03	1½ acre ...	1·0809	1·967	·049	·189	89·21	2·49	3,252	6,397
	" " " ...	31. 3. 03	1½ acre ...	1·0822	1·978	·054	·208	88·30	2·73	1,905	3,696
	mean of Estate No. 16...	...	...	1·0799	1·940	·055	·183	89·10	2·84	2,561	4,943
	Estate No. 17...	1. 4. 03	...	1·0782	1·857	·051	·227	86·98	2·75	2,080	3,863
	" " 20...	3. 4. 03	...	1·0747	1·845	·057	·140	90·35	3·09	2,050	4,613
	" " 22...	16. 4. 03	5·7 acre ...	1·0738	1·790	·065	·164	88·66	3·63	1,925	3,446
	" " 24...	30. 4. 03	...	1·0824	2·005	·054	·186	89·28	2·69	2,599	5,211
	" " 27...	15. 5. 03	...	1·0723	1·704	·066	·208	86·15	3·87	1,960	3,340
	mean of 15 plots ...	...	...	1·0768	1·855	·065	·177	88·48	3·51	2,488	4,651
B. 147	Estate No. 1...	9. 4. 03	2 acres ...	1·0769	1·861	·058	·181	88·62	3·12	2,160	4,020
	" " " ...	17. 4. 03	3 acres...	1·0749	1·766	·082	·199	86·27	4·64	2,509	4,431
	" " " ...	21. 4. 03	1⅕ acres...	1·0723	1·740	·083	·155	87·97	4·77	3,066	5,335
	" " " ...	21. 4. 03	1½ acres...	1·6787	1·931	·060	·156	89·94	3·11	3,298	6,368

TABLE LXXXIII.—*Continued.* VARIOUS PLANTATIONS. VARIETIES. LARGE PLOTS.

		Date.	Area reaped.	Normal Juice. Sp. Gr. 30° C./16·6° C.	Lb. per gallon. Saccharose.	Lb. per gallon. Glucose.	Lb. per gallon. Solids not Sugar.	Quotient of Purity.	Glucose Ratio.	Gallons of Juice per acre.	Saccharose lb. per acre.
B. 147	Estate No. 1 ...	23.4.03	2 acres	1·0778	1·915	·058	·150	90·20	3·03	3,391	6,494
	" " " ...	23.4.03	1½ acres	1·0765	1·875	·063	·150	89·80	3·36	3,902	7,676
	mean of Estate No. 1 ..	...	...	1·0762	1·848	·067	·165	88·82	3·67	3,054	5,721
	Estate No. 3 ...	11.5.03	365 holes	1·0765	1·754	·056	·278	84·00	3·19	3,254	5,728
	" " " ...	16.5.03	½ acre	1·0769	1·844	·059	·197	87·81	3·20	2,600	4,794
	mean of Estate No. 3 ...	...	...	1·0767	1·799	·058	·238	85·91	3·20	2,927	5,261
	Estate No. 8 ...	17.4.03	8 acres	1·0738	1·780	·066	·173	88·16	3·71	1,846	3,262
	mean of 9 plots ...	...	...	1·0760	1·830	·065	·182	88·10	3·57	2,892	5,345
B. 20	Estate No. 2 ..	20.2.03	...	1·0844	2·041	·042	·216	88·78	2·06	3,040	6,205
	" " 6 ...	26.2.03	...	1·0881	2·147	·052	·206	89·27	2·42	2,688	5,771
	" " 9 ...	10.3.03	1½ acre	1·0879	2·219	·042	·132	92·73	1·89	2,160	4,793
	" " 12 ...	20.3.03	396 holes	1·0822	2·069	·050	·121	92·37	2·42	2,510	5,193
	" " 13 ...	20.3.03	...	1·0787	1·915	·060	·172	88·19	3·13	2,560	4,902
	" " 18 ...	31.3.03	½ acre	1·0831	2·069	·051	·143	91·43	2·46	2,000	4,138
	" " 19 ...	31.3.03	...	1·0870	2·172	·042	·156	91·65	1·93	2,046	4,444
	" " 22 ...	3.4.03	...	1·0879	2·129	·038	·226	88·97	1·78	3,200	6,813
	" " 24 ..	15.4.03	6 acres	1·0800	2·067	·050	·065	94·73	2·42	1,640	3,390
	" " 25 ...	15.4.03	1½ acres	1·0879	2·216	·037	·140	92·60	1·67	2,530	5,606
	" " 30 ...	29.4.03	1½ acres	1·0897	2·216	·042	·183	90·78	1·90	1,885	4,177
	" " 33 ...	5.5.03	...	1·0795	1·970	·050	·150	90·78	2·54	2,500	4,925
	" " 37 ...	20.5.03	...	1·0778	1·894	·056	·173	89·21	2·96	1,340	2,538
	mean of 13 plots ..	...	...	1·0842	2·086	·047	·160	90·81	2·28	2,315	4,838

TABLE LXXXIV.

MEAN RESULTS OF THE ANALYSIS OF ESTATE SAMPLES OF JUICE.

		Number of Samples.	Normal Juice.					
			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon.			Quotient of Purity.	Glucose Ratio.
				Saccharose.	Glucose.	Solids not Sugar.		
Burke	Highest	...	1·0758	1·917	·068	·240	92·56	9·62
	Lowest	...	1·0645	1·403	·062	·092	78·91	3·23
	Mean...	3	1·0712	1·698	·088	·165	86·65	5·76
Caledonian Queen	Highest	...	1·0795	1·837	·089	·268	89·95	5·86
	Lowest	...	1·0640	1·518	·042	·134	84·51	2·30
	Mean...	10	1·0720	1·722	·069	·179	87·38	4·05
Mount Blanc		1	1·0778	1·882	·054	·187	88·65	2·87
Naga B.		1	1·0758	1·879	·063	·129	90·73	3·35
Queensland Creole	Highest	...	1·0795	1·950	·102	·208	90·63	6·50
	Lowest	...	1·0684	1·570	·044	·123	83·51	2·26
	Mean...	4	1·0749	1·810	·069	·170	88·25	3·91
Rappoe	Highest	...	1·0835	2·072	·096	·187	91·56	6·39
	Lowest	...	1·0640	1·503	·056	·093	85·11	2·70
	Mean...	8	1·0712	1·728	·076	·150	88·36	4·47
Rock Hall		2	1·0776	1·877	·073	·169	88·57	3·89
Sealy Seedling	Highest	...	1·0831	1·968	·063	·325	90·19	3·57
	Lowest	...	1·0743	1·767	·050	·148	88·25	2·54
	Mean...	5	1·0789	1·884	·058	·211	87·53	3·10
White Transparent	Highest	...	1·0824	2·005	·111	·357	91·38	7·72
	Lowest	...	1·0636	1·437	·046	·111	78·45	2·48
	Mean...	50	1·0758	1·818	·067	·187	87·69	3·76
B. 109	Highest	...	1·0835	2·014	·083	·203	90·39	5·00
	Lowest	...	1·0707	1·661	·058	·119	85·71	2·88
	Mean...	4	1·0750	1·811	·071	·169	88·25	3·97

TABLE LXXXIV.—*Concluded.*

MEAN RESULTS OF THE ANALYSIS OF ESTATE SAMPLES OF JUICE.

		Number of Samples.	Normal Juice.					
			Sp. Gr. $\frac{30^\circ C.}{16{\cdot}6^\circ C.}$	Lb. per gallon.			Quotient of Purity.	Glucose Ratio.
				Saccharose.	Glucose.	Solids not Sugar.		
B. 147	Highest	...	1·0817	1·989	·111	·400	91·66	7·10
	Lowest	...	1·0610	1·409	·044	·133	81·35	2·24
	Mean...	30	1·0757	1·795	·073	·200	86·74	4·14
B. 156		2	1·0705	1·663	·078	·191	86·05	4·70
B. 208	Highest	...	1·0915	2·249	·089	·338	95·22	5·05
	Lowest	..	1·0676	1·622	·037	·060	83·71	1·67
	Mean...	44	1·0832	2·043	·058	·171	90·03	2·68
B. 347		1	1·0671	1·578	·068	·200	85·48	4·31
Mixed Juices	Highest	...	1·0826	2·096	·081	·225	93·57	4·17
	Lowest	...	1·0721	1·729	·039	·103	87·69	1·96
	Mean...	5	1·0787	1·925	·056	·167	89·98	2·98

EXPLANATION OF TERMS USED IN THIS REPORT.

Per cent. by number of rotten canes, is the number of rotten canes in 100 canes (good and rotten).

Sp. Gr. $\frac{30^\circ\ C.}{16{\cdot}6^\circ\ C.}$, is the weight of a given volume of juice at a temperature of 30° Centigrade divided by the weight of an equal volume of water at a temperature of 16·6° Centigrade. A gallon of water at 16·6° C. (*i.e.* 62° Fahrenheit) weighs 10 lb.; the Sp. Gr. $\frac{30^\circ\ C.}{16{\cdot}6^\circ\ C.}$ therefore serves to ascertain the volume of the juice from its weight, or vice versa.

Per cent. of juice by mill, is the number of pounds of juice expressed from 100 pounds of cane.

Quotient of Purity, is the number of pounds of saccharose (cane sugar) in 100 pounds of the total solids in the cane juice.

Glucose Ratio, is the number of pounds of glucose to every 100 pounds of saccharose in the juice.

Saccharose is a chemical name for pure cane sugar. It is the same as sucrose. Refined cane sugar is almost pure saccharose, containing when deprived of traces of moisture, nearly 100 per cent. of saccharose.

BARBADOS.

REPORT

OF THE

AGRICULTURAL WORK

FOR THE SEASON BETWEEN

1901—1903

CARRIED ON UNDER THE DIRECTION

OF THE

IMPERIAL DEPARTMENT OF AGRICULTURE

FOR THE WEST INDIES,

BY

J. P. d'ALBUQUERQUE, M.A., F.I.C., F.C.S.S., LONDON AND BERLIN,
Island Professor of Chemistry and Agricultural Science.
Chemist-in-charge of Sugar Cane Experiments.

J. R. BOVELL, F.L.S., F.C.S.,
Superintendent Botanic Station.
Agricultural Superintendent of Sugar Cane Experiments.

T. E. KING & CO.,
Printers to the Government of Barbados.

1903.

LIBRARY,
MAR 22 1904
Weather Bureau.