

DEPARTMENT OF SCIENCE & AGRICULTURE.

BARBADOS RAINFALL

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I. INTRODUCTION.

Inasmuch as the maintenance of the whole community of Barbados is almost entirely dependent on agriculture, in particular on agricultural industry, the sugar industry, and as the growth and the yield of the sugar cane crop is directly dependent on rainfall, the amount and annual distribution of rainfall in each and every district of the island greatly influence the welfare and prosperity of the island's inhabitants.

The great interest which has been centred on the island's rainfall during 1930 and the fact that in various parts of the island the rainfall of 1930 has been less than that of any year within the records extending over a period of nearly one hundred years, would appear to make this a suitable opportunity for presenting the following comparative data in respect of the island's rainfall.

II. THE ISLAND'S RAINFALL FROM 1850 TO 1930.

Records are available from a sufficiently large number of stations throughout the island from 1850 to furnish data for comparison. There exist records of rainfall at a few stations previous to 1850, which indicate that the "forties" were years of moderate rainfall including two rather dry years, the latter being, however, considerably wetter than several years of the present century.

The island's rainfall from 1850 to 1930, a period of eighty-one years, somewhat strikingly divides itself into three periods of twenty-seven years each. The first and last periods are relatively dry periods, and the middle period a relatively wet period.

The mean annual rainfall of the island for the entire period, 1850 to 1930, is 60.07 inches. The mean annual rainfall for the three periods, 1850-1876, 1877-1903 and 1904-1930, is respectively, 57.38 inches, 63.51 inches and 54.31 inches.

Comparing the island's rainfall of each individual year in each pe-

riod with the average annual rainfall of the entire period, 1850-1930, it is observed that during the first period (1850-1876) the annual rainfall exceeds the average in 8 years and is less than the average in 19 years; during the middle period (1877-1903) the annual rainfall exceeds the average in 20 years and is less than the average in 7 years; and during the last period (1904-1930) the annual rainfall exceeds the average in 6 years and is less than the average in 21 years.

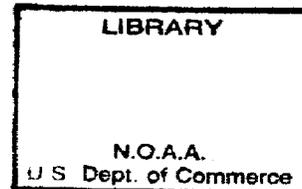
Examining the amounts of the annual rainfall during the last period (1904-1930), it is observed that the six years in which the average is exceeded are 1906, 1915, 1918 and 1927, and only once in the last twelve years (1919-1930), namely, in 1927, by the small margin of 3.69 inches, has the average been exceeded.

The three wettest years during the entire period (1850-1930) were 1901, 1896 and 1892 with annual amounts, representing the mean of more than 150 stations in each year, of 91.89 inches, 89.68 inches and 86.46 inches, respectively. The three driest years in the same period were 1930, 1921 and 1912 with annual amounts of 38.95 inches, 40.72 inches and 41.49 inches respectively.

The year 1930 has been remarkable for the inequality of the distribution of rainfall throughout the island and also within very small areas of the island. Figures representing the percentages of the average for the forty-year period 1890-1929 of stations grouped into parishes and parts of parishes are included in the next section. It is noteworthy that the total rainfall for 1930 at individual stations ranges from 40 to nearly 90 per cent. of the average for the forty-year period, 1890-1929; the range is in several instances very considerable within the groups.

The paucity of the rainfall in 1930, has been apparently mainly due to the absence of conditions bringing about precipitation over a wide area of which this island

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only forms a part (regional rainfall), occurring over the island as a "general rain." The only noteworthy fall of rain of this type occurred on the 24th and 25th of July. The reasons for the absence of this type of rain are as yet unknown.

Within the last five months of the year, a large percentage of the rainfall has resulted from local convectional rains occurring as heavy downpours in local areas (often referred to as "heat rains"). This type of rain seldom falls in the parishes of St. Philip and eastern Christ Church, consequently the drought was more acute in these districts than elsewhere. The great variation in the total rainfall at stations within groups is also due to the unequal distribution of this type of rain.

III. A COMPARISON BETWEEN THE MONTHLY AVERAGES OF A PERIOD OF YEARS AND THE MONTHLY RAINFALL OF 1930 AND OTHER DRY YEARS.

In this section a comparison is made between the average monthly rainfall of a collection of stations in each parish of the island, subdivided into Highlands and Lowlands, during the forty-year period, 1890-1929, the ten-year period, 1920-29, and the monthly rainfall during one or more of the driest years previous to 1930 and the monthly rainfall of 1930. Reference is made to the driest years in each particular district during the forty-year period (1890-1929).

Monthly rainfall records are available for at least 124 stations, distributed throughout the island, from 1890 onwards. It has, therefore been possible to prepare the monthly average rainfall at 124 stations for the forty-year period, 1890 to 1929.

The average annual rainfall of the island for the forty-year period, 1890-1929, is 60.87 inches, only 0.80 inches greater than that of the entire period (1850-1930) referred to in Section II. The averages of this period should, therefore, be sufficiently representative for purposes of comparison.

In order that a comparison may be made with the rainfall of recent years, the average monthly rainfall of the ten-year period, 1920-29, is also included.

Finally, a note is added in reference to the rainfall of 1930.

(1) Parish of Saint Michael.

The rainfall varies from 15 to

20 per cent. more than the average in the north-eastern part of the parish to 5 to 10 per cent. less than the average in the south-western, western and north-western parts of the parish.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall, 1920	Rain- fall, 1921	Rain- fall, 1930
Jan. . .	2.55	2.50	3.86	0.83	1.32
Feb. . .	1.58	1.54	1.08	1.05	1.03
March . .	1.61	1.37	0.97	1.91	0.24
April . .	1.70	1.07	0.11	0.48	1.34
May . .	2.18	0.97	1.06	0.78	0.40
June . .	4.76	3.84	1.82	2.28	3.51
July . .	4.96	4.51	3.93	3.96	4.20
August . .	6.94	5.57	2.18	3.49	2.92
Septem. .	6.98	5.90	4.61	3.31	4.82
October .	6.61	6.96	5.22	6.09	3.88
Novem. .	6.42	7.53	4.70	3.80	3.19
Decem. .	3.69	2.89	1.44	2.93	2.51
Total . .	49.98	44.65	30.98	32.91	30.42

The rainfall for the year 1912 was 34.13 inches.

The averages for the year 1930 were compiled from the records of 21 stations the highest record being 41.52 inches and the lowest 24.69 inches. The average rainfall in the parish for 1930 was 61 per cent. of the average for the forty-year period, 1890-1929.

(2) Parish of Christ Church.

The rainfall varies from 10 per cent. more than the average in the central uplands of the parish to 18 per cent. less than the average on the south-eastern coastal district.

	Average 1890-1929	Average 1920-29	Rainfall 1912	Rainfall 1930
Jan. . .	2.68	2.65	2.12	2.76
Feb. . .	1.77	1.77	0.84	0.86
March . .	1.87	1.68	1.20	0.58
April . .	1.97	1.19	1.28	2.43
May . .	2.37	1.18	0.55	0.43
June . .	4.87	3.81	3.38	4.56
July . .	5.26	4.76	3.42	4.07
August . .	6.50	5.23	3.26	3.21
Septem. .	6.59	5.89	3.95	2.29
October .	6.56	6.57	4.78	3.05
Novem. .	6.49	7.03	5.18	2.62
Decem. .	3.85	3.29	3.67	2.64
Total . .	50.78	45.05	33.63	29.51

The rainfall for the years 1920 and 1921 was respectively 35.62 and 37.01 inches.

The averages for the year 1930 were compiled from the records of 17 stations, the highest record being 39.10 inches and the lowest 20.20 inches. The average rainfall in the parish for 1930 was 58 per cent. of the average for the forty-year period, 1890-1929.

(3) Parish of Saint George.

(a) Highlands.

There is no appreciable variation from the average in this district.

	Average 1890-1929	Average 1920-29	Rainfall 1912	Rainfall 1930		Av. 1890- 1929	Av. 1920- 29	Rain- fall. 1908	Rain- fall. 1912	Rain- fall. 1930
Jan. . .	3.79	3.39	2.93	3.67	Jan. . .	2.61	2.27	1.84	1.94	2.08
Feb. . .	2.41	2.56	1.58	1.79	Feb. . .	1.60	1.61	1.09	1.00	0.62
March . .	2.74	2.42	1.85	0.74	March . .	1.92	1.65	1.56	1.45	0.53
April . .	2.61	1.54	1.68	2.38	April . .	2.15	1.22	1.90	1.86	1.88
May . . .	3.00	1.77	0.79	1.42	May . . .	2.28	1.14	0.95	0.50	0.52
June . . .	5.98	4.59	3.58	5.80	June . . .	4.92	3.44	3.48	3.49	4.35
July . . .	6.54	6.12	2.88	7.00	July . . .	5.09	4.61	3.93	2.37	4.17
August . .	7.90	6.59	3.80	3.69	August . .	6.38	5.15	2.54	2.99	2.80
Septem. .	8.16	7.35	2.98	5.80	Septem. .	6.77	5.95	3.18	2.69	2.68
October . .	7.65	7.68	7.37	4.55	October . .	6.20	6.07	4.31	6.10	2.71
Novem. . .	7.79	8.97	6.53	5.07	Novem. . .	6.34	7.31	3.31	6.30	2.44
Decem. . .	5.43	4.38	4.60	4.78	Decem. . .	4.12	3.42	6.89	3.10	2.70
Total . .	64.00	57.36	40.57	46.67	Total . .	50.38	43.84	34.98	33.79	27.47

The rainfall for the years 1920 and 1921 was respectively 44.02 and 47.49 inches.

The averages for the year 1930 were compiled from the records of 9 stations, the highest record being 54.30 inches and the lowest 39.92 inches. The average rainfall in this area for 1930 was 73 per cent. of the average for the forty-year period, 1890-1929.

(b) *Lowlands.*

There is no appreciable variation from the average in this district.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall. 1912	Rain- fall. 1920	Rain- fall. 1930
Jan. . .	3.20	2.91	2.64	4.47	3.10
Feb. . .	2.00	1.94	1.19	1.96	1.13
March . .	2.13	1.89	1.66	1.60	0.44
April . .	2.15	1.30	1.55	0.08	1.78
May . . .	2.59	1.28	0.56	1.11	0.73
June . . .	5.50	4.11	3.75	2.46	4.80
July . . .	5.79	5.28	3.12	4.88	4.94
August . .	7.19	5.63	3.71	2.96	3.16
Septem. .	7.47	6.86	4.67	5.05	3.32
October . .	7.16	7.09	5.33	4.70	4.62
Novem. . .	6.99	8.10	6.08	7.43	3.22
Decem. . .	4.36	3.60	4.24	1.50	3.19
Total . .	56.53	49.40	38.60	38.20	34.44

The rainfall for the years 1908 and 1921 were respectively 40.47 and 41.91 inches.

The averages for the year 1930 were compiled from the records of 13 stations, the highest record being 40.29 inches and the lowest 29.29 inches. The average rainfall in this area for 1930 was 63 per cent. of the average for the forty-year period, 1890-1929.

(4) *Parish of Saint Philip.*

(a) *Highlands.*

The average at three stations in this small area for 1930 was 32.28 inches. The average rainfall of this area was 15 per cent. less than the average for the parish of Saint John (Highlands) with which it may be compared.

(b) *Lowlands.*

The rainfall in this area varies from 10 per cent. more than the average in the western corner of the parish to 10 per cent. less than the average in the coastal districts.

The rainfall for the years 1920 and 1921 was respectively 35.07 inches and 35.26 inches.

The averages for the year 1930 were compiled from the records of 22 stations, the highest record being 35.36 inches and the lowest 20.29 inches. The average rainfall in this area for 1930 was 54 per cent. of the average for the forty-year period, 1890-1929.

(5) *Parish of Saint John.*

(a) *Highlands.*

The rainfall in this area varies from 12 per cent. more than the average on the borders of Saint Joseph to 10 per cent. less than the average on the borders of Saint Philip.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall. 1912	Rain- fall. 1921	Rain- fall. 1930
Jan. . .	3.52	2.89	2.76	1.31	2.84
Feb. . .	2.28	2.46	1.68	1.83	1.27
March . .	2.70	2.27	1.59	3.92	0.61
April . .	2.74	1.36	1.97	1.48	2.91
May . . .	3.10	1.64	0.82	1.54	1.15
June . . .	5.91	4.31	3.83	1.08	5.35
July . . .	6.29	5.87	2.96	6.00	5.85
August . .	7.71	6.44	3.72	4.61	2.94
Septem. .	8.18	7.25	1.82	4.67	5.11
October . .	7.56	7.53	7.36	7.44	3.59
Novem. . .	7.83	8.87	7.94	4.37	6.17
Decem. . .	5.41	3.94	4.62	4.08	3.56
Total . .	63.23	54.83	41.07	43.73	41.36

The rainfall for the years 1908 and 1920 was respectively 43.79 inches and 45.25 inches.

The averages for the year 1930 were compiled from the records of 14 stations, the highest record being 49.95 inches and the lowest 35.30 inches. The average rainfall in this area for 1930 was 64 per cent. of the average for the forty-year period, 1890-1929.

(b) *Lowlands.*

The average rainfall at three stations in this small area for 1930 was 29.90 inches. The average rainfall of this area is 15 to 20 per cent. less than the average of the highlands of this parish, with which it may be compared.

THE DEPARTMENT OF SCIENCE AND AGRICULTURE

BARBADOS RAINFALL.

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SECTION III. (Continued).

(6) Parish of Saint Thomas.

(a) Highlands.

There is no appreciable variation from the average in this district.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1912	Rain- fall 1923	Rain- fall 1930
Jan. . .	4.52	4.00	4.06	3.88	3.75
Feb. . .	2.94	2.95	1.91	3.07	1.97
March . .	3.25	2.57	1.89	2.85	0.79
April . .	3.16	1.88	1.56	2.06	3.31
May . .	3.69	1.97	1.46	0.70	1.32
June . .	6.96	5.07	3.48	4.01	5.26
July . .	7.66	7.15	4.03	6.07	7.43
Aug. . .	9.17	7.89	5.21	5.45	3.87
Sept. . .	9.76	8.83	2.29	4.07	6.20
Oct. . .	8.72	8.37	11.74	5.00	5.96
Nov. . .	8.92	10.09	8.02	3.68	5.66
Dec. . .	6.40	4.60	5.29	10.25	4.19
Total . .	75.15	65.37	50.94	51.09	49.96

The rainfall for the years 1920 and 1921 was respectively 59.56 inches and 56.20 inches.

The averages for the year 1930 were compiled from the records of 9 stations, the highest record being 59.29 inches and the lowest 39.23 inches. The average rainfall in this area for 1930 was 66 per cent of the average for the forty-year period 1890-1929.

(b) Lowlands.

The rainfall in this area varies from 12 per cent more than the average on the boundary of the parish of St. George to 18 per cent less than the average in the extreme Southwestern part of the parish.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1912	Rain- fall 1923	Rain- fall 1930
Jan. . .	3.65	3.32	3.60	3.24	3.18
Feb. . .	2.47	2.35	1.47	2.65	0.94
March . .	2.69	2.10	1.74	1.88	0.48
April . .	2.49	1.36	1.26	1.13	1.72
May . .	2.97	1.49	0.82	0.62	0.67
June . .	6.01	4.24	3.22	2.87	4.42
July . .	6.64	6.11	3.02	5.57	6.13
Aug. . .	8.13	6.79	4.66	3.01	2.61
Sept. . .	8.58	7.82	2.65	4.41	5.65
Oct. . .	7.74	7.44	8.79	3.86	4.04
Nov. . .	7.77	8.75	7.11	4.65	4.71
Dec. . .	5.29	4.19	5.37	7.61	3.42
Total . .	64.48	55.96	43.73	43.50	37.98

The rainfall for the years 1920 and 1921 was respectively 44.01 inches and 49.11 inches.

The averages for the year 1930 were compiled from the records of 7 stations, the highest record being 42.63 inches and the lowest 32.04 inches. The average rainfall in this area for 1930 was 59 per cent of the average for the forty-year period 1890-1929.

(7) Parish of Saint James. (a) Highlands.

There is no appreciable variation from the average in this district.

	Av. 1890-1929	Av. 1920-29	Rainfall 1912	Rainfall 1930
Jan. . .	3.70	3.33	3.06	2.65
Feb. . .	2.64	2.75	1.62	1.53
March . .	2.73	2.39	1.73	0.35
April . .	2.88	1.80	0.54	3.10
May . .	3.62	1.80	1.13	1.15
June . .	6.35	4.70	2.70	4.21
July . .	7.36	6.70	5.20	7.55
Aug. . .	8.61	7.16	3.80	4.14
Sept. . .	9.45	7.73	1.42	5.96
Oct. . .	8.37	8.20	10.06	6.02
Nov. . .	8.40	8.53	5.91	6.68
Dec. . .	5.45	4.05	6.69	3.53
Total . .	69.56	59.14	43.86	46.89

The rainfall for the years 1908, 1920 and 1921 was respectively 47.67, 51.93 and 49.94 inches.

The averages for the year 1930 were compiled from the records of 2 stations, the higher record being 49.47 inches and the lower 44.32 inches. The average rainfall in this area for 1930 was 67 per cent of the average for the forty-year period 1890-1929.

(b) Lowlands.

The rainfall in this area varies from 20 per cent more than the average in the central part of the parish to 18 to 20 per cent less than the average in the southern end of the parish.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1920	Rain- fall 1923	Rain- fall 1930
Jan. . .	3.02	2.61	4.79	2.62	1.94
Feb. . .	2.01	1.90	1.65	2.08	1.11
March . .	2.23	1.81	1.62	1.48	0.42
April . .	2.87	1.22	0.27	0.87	1.39
May . .	2.61	1.09	0.56	0.46	0.58
June . .	5.54	3.84	2.10	2.73	3.22
July . .	6.25	5.62	5.66	4.66	5.14
Aug. . .	7.52	6.39	3.54	5.18	3.03
Sept. . .	8.55	6.90	7.13	4.16	5.80
Oct. . .	7.15	7.06	5.69	3.76	3.61
Nov. . .	6.97	9.79	6.64	4.47	6.74
Dec. . .	4.38	3.35	1.55	6.54	2.62
Total . .	59.10	51.58	41.20	39.11	35.63

The rainfall for the years 1912 and 1921 was respectively 41.45 and 43.26 inches.

The averages for the year 1930 were compiled from the records of 9 stations, the highest record being 43.60 inches and the lowest 25.17 inches. The average rainfall in this area for 1930 was 60 per cent of the average for the forty-year period 1890-1929.

(8) *Parish of Saint Peter.*
(a) *Highlands.*

The rainfall in this area varies from 12 to 15 per cent more than the average in the Southeastern part of the parish to 12 to 15 per cent less than the average in the northeastern part of the parish.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1921	Rain- fall 1923	Rain- fall 1930
Jan. . .	3.61	3.10	1.87	2.90	2.26
Feb. . .	2.42	2.51	1.51	2.67	1.75
March . .	2.34	2.02	2.41	1.38	0.28
April . .	2.84	1.78	0.50	1.23	1.81
May . .	3.67	1.55	2.53	0.89	1.12
June . .	5.92	3.92	1.80	2.27	3.50
July . .	6.88	5.66	5.53	5.58	5.88
Aug. . .	7.86	6.34	4.30	3.50	3.50
Sept. . .	9.15	7.76	3.96	3.67	6.64
Oct. . .	8.03	7.82	7.08	3.35	4.17
Nov. . .	7.81	8.91	3.73	3.80	5.90
Dec. . .	4.94	3.41	3.00	6.98	2.93
Total . .	55.47	54.78	38.22	38.22	39.74

The rainfall for the years 1914 and 1920 was respectively 43.14 and 44.63 inches.

The averages for the year 1930 were compiled from the records of 5 stations, the highest record being 42.77 inches and the lowest 37.46 inches. The average rainfall in this area for 1930 was 60 per cent of the average for the forty-year period 1890-1929.

(b) *Lowlands.*

There is no appreciable variation from the average in this district.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1921	Rain- fall 1923	Rain- fall 1930
Jan. . .	3.32	2.86	1.36	2.45	2.06
Feb. . .	2.19	2.25	1.38	2.63	1.68
March . .	2.06	1.75	1.96	1.14	0.34
April . .	2.34	1.69	0.81	0.92	1.71
May . .	3.09	1.22	2.43	0.51	1.05
June . .	5.27	3.75	2.25	2.60	3.04
July . .	6.39	5.48	5.13	4.96	6.24
Aug. . .	7.18	6.20	4.50	3.95	2.57
Sept. . .	8.30	7.43	4.63	5.63	5.23
Oct. . .	7.38	6.95	7.23	2.85	3.91
Nov. . .	7.26	8.44	3.64	4.85	6.93
Dec. . .	4.38	3.19	2.76	5.56	2.93
Total . .	59.26	51.21	38.08	38.05	37.68

The rainfall for the years 1914 and 1920 was respectively 40.43 and 46.12 inches.

The averages for the year 1930 were compiled from the records

of 8 stations, the highest record being 42.89 inches and the lowest 29.46 inches. The average rainfall in this area for 1930 was 63 per cent of the average for the forty-year period 1890-1929.

(9) *Parish of St. Lucy.*

The rainfall in this area varies from 8 per cent more than the average on the Southern boundary of the parish to 12 per cent less than the average on the Northeastern coastal districts.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1921	Rain- fall 1923	Rain- fall 1930
Jan. . .	2.77	2.18	0.71	1.71	1.32
Feb. . .	1.72	1.77	0.90	2.48	1.31
March . .	1.59	1.45	2.07	1.00	0.30
April . .	2.31	1.47	0.25	0.77	1.91
May . .	2.96	1.08	1.34	0.65	0.40
June . .	4.99	3.54	2.51	2.71	4.02
July . .	5.94	4.66	4.97	4.90	5.16
Aug. . .	6.62	5.28	3.02	3.16	2.49
Sept. . .	7.60	6.45	3.37	4.58	6.26
Oct. . .	6.72	6.63	6.05	2.57	2.83
Nov. . .	6.73	7.48	3.36	2.99	5.84
Dec. . .	3.87	2.91	3.29	5.79	2.26
Total . .	53.82	44.90	31.84	33.34	34.18

The rainfall for the years 1914 and 1920 was respectively 33.73 and 34.67 inches.

The averages for the year 1930 were compiled from the records of 8 stations, the highest record being 39.02 inches and the lowest 31.98 inches. The average rainfall in this area for 1930 was 63 per cent of the average for the forty-year period 1890-1929.

(10) *Parish of St. Joseph.*

(a) *Highlands.*

The rainfall in this area varies from 8 per cent more than the average in the Southwestern Highlands of the parish to 10 per cent less than the average in the Bissex Hill area.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1912	Rain- fall 1921	Rain- fall 1930
Jan. . .	4.13	3.71	3.33	1.40	4.14
Feb. . .	2.62	2.67	1.88	1.86	1.79
March . .	3.06	2.64	1.47	3.26	0.95
April . .	3.00	1.76	1.50	1.41	3.78
May . .	3.59	1.96	0.90	2.37	1.35
June . .	6.37	4.84	3.04	2.64	5.19
July . .	6.95	6.90	3.14	5.61	8.37
Aug. . .	8.26	7.10	4.48	4.87	3.21
Sept. . .	8.77	7.61	1.72	4.83	6.33
Oct. . .	8.08	8.11	8.39	7.89	5.74
Nov. . .	8.35	10.30	7.77	5.25	6.13
Dec. . .	5.82	4.34	4.59	4.43	4.58
Total . .	69.00	61.94	42.21	45.82	51.61

The rainfall for the years 1908 and 1920 was respectively 48.49 and 49.12 inches.

The averages for the year 1930 were compiled from the records of 5 stations, the highest record being 57.94 inches and the lowest

47.27 inches. The average rainfall in this area for 1930 was 75 per cent of the average for the forty-year period 1890-1929.

(b) *Lowlands.*

There is no appreciable variation from the average in this district.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1921	Rain- fall 1923	Rain- fall 1930
Jan. . .	3.37	2.78	1.10	2.80	3.46
Feb. . .	2.22	2.18	1.50	2.10	1.82
March . .	2.49	2.26	2.50	2.10	1.00
April . .	2.66	1.18	0.80	1.50	3.00
May . .	3.28	1.52	2.25	0.50	1.13
June . .	5.79	3.98	2.40	3.70	5.49
July . .	6.61	6.45	5.60	4.90	10.03
Aug. . .	7.76	6.16	4.30	3.85	3.58
Sept. . .	8.57	7.00	4.25	3.25	7.73
Oct. . .	7.65	7.79	7.50	3.85	5.08
Nov. . .	8.18	10.01	5.00	3.50	7.01
Dec. . .	5.22	3.72	3.25	7.40	4.25
Total . .	63.80	55.03	40.45	39.45	53.58

The rainfall for the year 1912 was 44.86 inches.

The averages for the year 1930 were compiled from the records of 2 stations, the higher record being 56.74 inches and the lower 50.42 inches. The average rainfall in this area for 1930 was 84 per cent of the average for the forty-year period 1890-1929.

(11) *Parish of Saint Andrew.*

(a) *Highlands.*

The average rainfall in this area is approximately 5 per cent less than the average in the Highlands of the parish of Saint Peter with which it may be compared.

The average rainfall at 2 stations in this area for 1930 was 44.99 inches.

(b) *Lowlands.*

The rainfall in this area varies from 14 per cent more than the average in the Southern part of the area to 10 per cent less than the average in the Northern end of the area.

	Av. 1890- 1929	Av. 1920- 29	Rain- fall 1921	Rain- fall 1923	Rain- fall 1930
Jan. . .	2.88	2.49	0.77	1.94	2.23
Feb. . .	1.87	1.79	1.10	1.52	1.09
March . .	2.15	1.64	1.91	1.05	0.14
April . .	2.43	1.17	0.55	0.60	1.81
May . .	3.39	1.61	2.51	0.24	0.63
June . .	5.29	3.33	2.22	2.37	3.23
July . .	5.89	4.90	5.81	3.77	4.17
Aug. . .	6.93	5.21	4.15	1.77	4.45
Sept. . .	8.24	6.64	3.88	2.60	6.33
Oct. . .	7.12	6.83	7.40	2.52	2.91
Nov. . .	6.86	7.97	4.90	3.11	6.27
Dec. . .	4.50	2.92	2.77	7.81	2.51
Total . .	57.55	46.50	37.97	28.80	35.80

The rainfall for the years 1912 and 1914 was respectively 39.59 and 41.35 inches.

The averages for the year 1930 were compiled from the records of

2 stations in the Northern end of the area, the higher record being 38.09 inches and the lower 33.52 inches. The average rainfall in this area for 1930 was 62 per cent of the average for the forty-year period 1890-1929.

IV. *The Measurement of Rainfall.*

The standard rain-gauge consists of a funnel, a receiving bottle, and a measuring cylinder. The funnel should be exactly five inches in diameter, and the measuring cylinder should be accurately graduated and of a definite graduation for such a funnel.

The quantity of rain collected in a rain-gauge depends to some extent upon the exposure of the gauge. In order that observations at different stations may be comparable, the exposures must be comparable. The gauge should be placed on level ground, not upon a slope or terrace and certainly not on a wall or roof. It should be sunk into the ground so that its rim is one foot above ground level. The distance of the gauge from every object should be not less than twice the height of the object above the rim of the gauge. Precautions should be taken to ensure that the rim of the gauge when set up is level. It is preferable that the gauge be surrounded by turf or low grass, because there is the likelihood of splashing from a hard surface during heavy rain.

It not infrequently happens that the less expensive type of funnel and measuring cylinder offered for sale does not conform exactly to standard required measurements. A small error in the size of the funnel and cylinder will cause a considerable error in the measurement of rainfall. Persons, therefore, who desire to take accurate measurement of rainfall should ascertain that the various parts of the gauge are of the correct size. The Meteorological equipment at Codrington Experiment Station includes a standard rain gauge of the Snowden pattern, recommended for use by the British Meteorological Office. Persons desiring to check the accuracy of their gauges may compare their measuring cylinders with the standard measuring cylinder at Codrington Experiment Station.

Errors are frequently made in reading the level of the water in the measuring cylinder. After pouring the water into the cylin-

der the eye should be brought to the level of the water in the cylinder. It will be observed that there are apparently two "rings" of water at the surface, caused by the curved surface of the water known as the meniscus. The graduation on the cylinder nearest to the lower "ring" or, in other words, nearest to the bottom of the meniscus should be taken as the reading. The precaution of accurately reading the water level in the cylinder is an important one in as much as the difference between the top and bottom of the meniscus approximates to 0.01 inch, or one "part", which if included in thirty measurements in a month

would increase the total measurement by 0.30 inch or 30 "parts"

V. *The Maintenance of Rainfall Records in Barbados.*

The Department of Science and Agriculture is willing to receive and tabulate the rainfall records of as many stations throughout the Island as will enable it to maintain reliable averages of the various districts and altitudes of the Island.

Records are at present received from about 160 stations. Record-ers who do not already send monthly rainfall returns to this Department are invited to do so and to apply for the necessary monthly forms.

DEPARTMENT OF SCIENCE AND AGRICULTURE

OUTLINE MAP OF

BARBADOS.

Scale 1 in = 2.21 miles.

