

levels are cold on account of the great area surrounding the summit.

"The subject of vegetation must be considered, dense vegetation being responsible for great loss of heat through radiation, and a cultivated orchard is therefore warmer than one planted in grass.

"The data presented in this study make plain the necessity for great care in the selection of a property for the purpose of fruit growing. The topography of a region is paramount. Frost pockets should be avoided and valley floors of all kinds as far as practicable, unless means are available for orchard heating. The altitude above sea

statistics down to the end of 1919. Unfortunately, the author did not live to see the completion of his work, but his daughter, Miss C. Maxwell Hall, with the aid of Mr. J. F. Brennan, Government meteorologist, has faithfully carried the work to a conclusion. The first part of the work is devoted to presenting the monthly and annual averages for a total of about 250 stations well scattered over the island. The latter is divided into five unequal portions, viz, Northeast, Central, West Central, North, and South. The three subdivisions first named form a somewhat irregularly shaped zone extending almost entirely across the island from east to west, and it contains

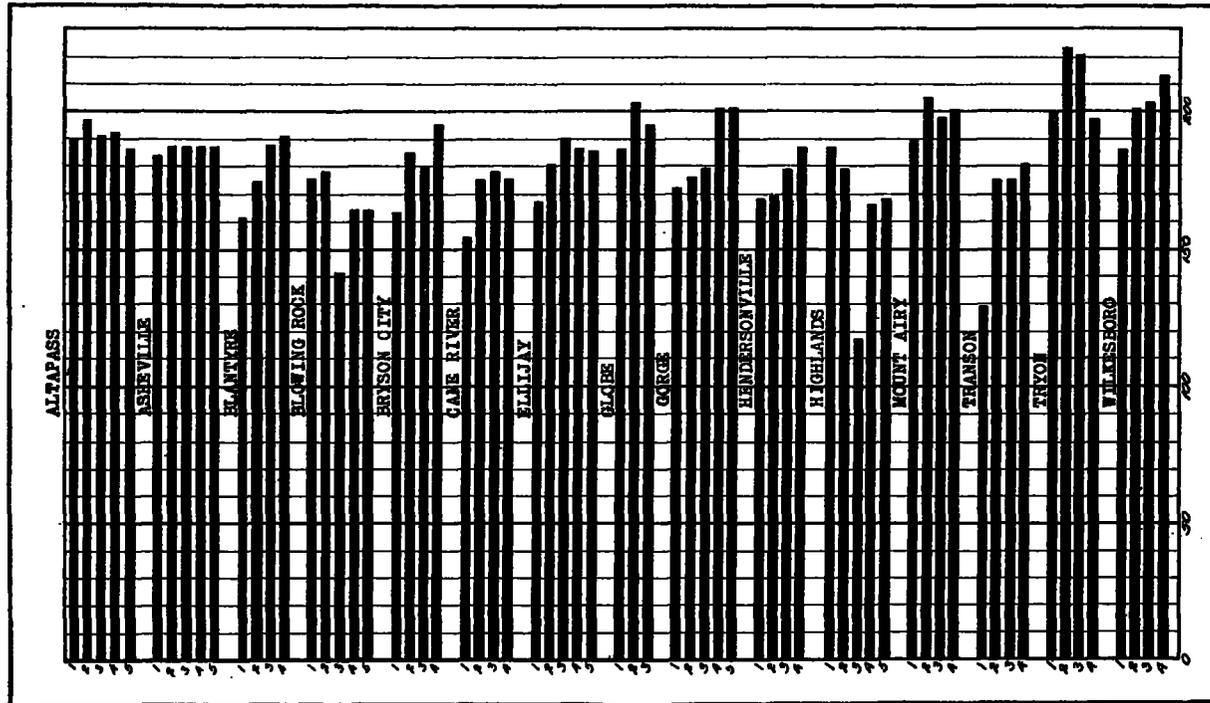


FIG. 7.—Length of growing season.

level is in every case a consideration and, in a degree, the elevation above the valley floor.

"All these questions must be given careful consideration and the effect of one upon another weighed in the balance. No hard and fast rule can be made in the determination, as the factors involved are so many and so complicated that each site must be considered by itself."

THE RAINFALL OF JAMAICA.¹

Under the above title is presented the third report on the rainfall of Jamaica by the same author, bringing the

¹ The rainfall of Jamaica from about 1870 to 1919, by Maxwell Hall, M. A., F. Roy. Met. Soc., Government meteorologist.

the most elevated parts. The average elevation of the stations in the Northeast is 1,375 feet, and that subdivision has naturally the greatest rainfall; the next subdivision in point of elevation is the West Central, with 960 feet, and finally the coastal regions of both the north and the south of the island have an elevation of 472 and 490 feet, respectively.

The 50-year monthly means for the island as a whole are presented in Table 1 below.

In Table 2 will be found the annual amounts for each of the five principal subdivisions and for each year of the period 1870-1919. These data will serve as valuable material in the study of the secular variation of rainfall in the Tropics.

TABLE 1.—Mean monthly rainfall, Jamaica, 1870-1919 (inches and hundredths).

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1870-1879.....	4.46	2.38	3.34	3.25	9.05	4.74	4.31	6.66	6.85	10.07	6.71	5.59	67.41
1880-1889.....	3.78	2.51	2.49	4.18	9.07	7.77	4.32	6.83	6.87	8.04	5.68	5.60	66.54
1890-1899.....	3.13	2.97	2.75	5.17	10.56	5.81	5.64	6.35	7.64	13.01	7.71	5.41	76.15
1900-1909.....	4.27	3.30	3.96	4.59	7.93	9.73	4.78	6.84	8.28	10.15	8.09	5.68	76.98
1910-1919.....	4.04	2.75	3.54	6.03	9.12	5.61	4.70	7.42	8.26	9.51	10.00	5.61	77.19
Mean, 50 years	3.94	2.78	3.22	4.64	9.15	6.73	4.75	6.82	7.58	10.15	7.64	5.40	72.86

TABLE 2.—Annual rainfall tables, 1870-1919 (inches and hundredths)—Continued.

Year.	Divisions.				The Island.
	North-east.	North.	West Central.	South.	
1870.....	110.60	83.09	102.98	61.07	89.43
1871.....	69.45	41.88	54.56	34.46	50.09
1872.....	59.42	40.79	51.50	29.02	45.18
1873.....	84.12	52.64	67.79	47.71	63.06
1874.....	97.18	68.25	62.97	47.35	68.94
1875.....	71.89	47.15	56.16	34.47	52.42
1876.....	90.38	54.71	87.33	52.99	71.35
1877.....	100.72	56.53	64.06	52.27	68.40
1878.....	104.12	62.99	72.44	66.11	76.42
1879.....	122.55	65.44	87.54	79.85	88.84
Mean.....	91.04	57.35	70.73	50.53	67.41
1880.....	76.37	47.01	64.91	33.47	55.44
1881.....	91.24	49.42	75.32	58.42	68.60
1882.....	65.48	43.76	78.59	43.67	57.87
1883.....	72.30	41.52	78.19	45.02	59.26
1884.....	89.00	41.87	73.10	43.63	56.90
1885.....	70.55	52.77	72.62	43.52	59.86
1886.....	126.61	60.93	88.21	86.64	90.61
1887.....	80.25	61.07	80.14	61.16	70.66
1888.....	98.00	54.42	70.43	65.58	72.11
1889.....	99.81	56.82	75.91	64.02	74.15
Mean.....	84.96	50.96	75.74	54.51	66.54
1890.....	75.09	48.29	89.91	44.41	64.42
1891.....	110.56	66.71	100.50	61.03	84.70
1892.....	101.55	58.10	82.05	50.29	73.00
1893.....	106.50	63.17	108.66	67.65	86.49
1894.....	90.56	54.04	95.93	61.01	75.39
1895.....	97.38	56.35	85.38	47.36	71.62
1896.....	95.42	54.90	78.31	45.79	68.61
1897.....	93.95	58.25	95.46	62.67	77.59

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TABLE 3.—Summary of annual rainfall, Jamaica, by subdivisions and decades (inches and hundredths).

Year.	Divisions.				The Island.
	North-east.	North.	West-central.	South.	
1870-79.....	91.04	57.35	70.73	50.53	67.41
1880-89.....	84.96	50.96	75.74	54.51	66.54
1890-99.....	98.60	57.36	92.17	56.45	76.15
1900-09.....	99.48	57.37	89.21	61.90	76.98
1910-19.....	105.50	60.28	90.01	53.07	77.19
Mean.....	95.92	56.66	83.57	55.29	72.86

—A. J. H.

NOTES, ABSTRACTS, AND REVIEWS.

TORNADO NEAR WASHINGTON, D. C.

A true tornado apparently originating between 2:30 and 3:00 p. m. April 5, 1923, in the northern portion of Rock Creek Park, Washington, D. C., about 5 miles from the United States Capitol, moved thence northeastward, crossing the Baltimore and Ohio Railroad tracks about a quarter-mile north of the Silver Spring station, Md., and continued thence north-northeast for about 11 miles. Its path was from 100 to 250 yards in width; a funnel-shaped cloud was seen by some observers. Four persons were seriously injured, seven houses were demolished, and about a dozen more suffered some damage. The property loss is estimated at \$100,000.

At the time this storm occurred a vigorous cyclone was moving northeastward, with its center probably between 200 and 300 miles distant, in a northwesterly direction. The morning map (8:00 a. m.) showed the center in southern Ohio, the sea-level pressure near the center being about 29.58 inches; the evening chart of the day (8:00 p. m.) located the center in the north central part

of New York, with pressure about 29.46 inches. The trace of the siphon barograph at the Washington office shows a rapid fall in pressure and an even more rapid rise about the time the storm occurred, the marked dip and rise covering about 45 minutes. The trace indicates 29.43 inches at 2:00 p. m., lowest, 29.34, about 2:35, and return to 29.42 by 2:45 and to 29.45 by 2:55 (all being station pressures—reduction to sea-level, about +0.12).

The thermograph trace shows a sharp fall of about 9° (72° to 63°) about the time the tornado formed. The wind, from south-southeast, 12 to 16 miles per hour, during the period 2:00 to 2:40, shifted to west-northwest by 2:45, and at about 2:50 reached the highest velocity of the day, 30 miles. Light rain began at the Washington office 2:27 p. m., but became heavy only at 3:22, many minutes after the sharp pressure changes, the drop in temperature, and the shift in wind had occurred; in 12 minutes, ending 3:34, 0.13 inch fell, then the rain returned to light, and continued so till it ceased, at 8:10 p. m.—H. C. H.