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JUPITER-CYCLICAL RAINFALL.

By Pliny Earle Chase, Professor of Physics in Haverford College.

(*Read before the American Philosophical Society, June 19th,* 1874.)

The records of daily rainfall for twenty-seven years, at "Husband's" Station, Barbadoes, for which I am indebted to the courtesy of His Excellency Governor Rawson W. Rawson, C. B., have enabled me to extend my cyclical researches, and to discover some new and interesting features in the cosmical disturbances of local meteorology.

Although my previous investigations have convinced me that each of the planets exerts, on our atmospheric currents, an appreciable influence, which might be usefully formulated for any given station, provided the observations were enough extended, I have thought it best to confine myself mostly to the study of such weather modifications as are dependent upon Jupiter and the moon.

Those who are accustomed to think of simple tidal disturbances as the only ones to which we can reasonably look for planetary influence, and even those who are also willing to attach some importance to the modification of atmospheric elasticity by direct attraction, are doubtless prepared to believe, on sufficient evidence, that the moon may affect our winds and storms to a slight degree, while they are extremely skeptical,

TABLE I.

Normal Percentages of Rainfall at Barbadoes in Jovian Synodic Years.

	1847–55.	1855–63.	1863–72.	1847–58.	1859–72.	1847–72.
1.	124	132	82	111	110	112
2.	110	161	88	107	125	116
3.	102	156	93	101	131	116
4.	98	151	89	94	131	112
5.	102	137	78	91	119	105
6.	107	124	70	99	102	100
7.	106	121	73	108	91	100
8.	95	122	87	110	91	101
9.	75	121	102	101	95	98
10.	62	120	109	94	92	96
11.	67	123	119	101	102	101
12.	77	117	132	107	109	108
13.	86	95	139	105	107	106
14.	99	75	139	102	104	103
15.	100	70	137	101	104	103
16.	99	69	129	99	100	99
17.	92	65	124	94	94	94
18.	83	64	123	88	92	90
19.	74	69	114	81	90	86
20.	68	75	100	74	87	81
21.	68	77	90	72	84	78
22.	82	76	84	80	81	80
23.	109	82	84	97	87	92
24.	135	90	89	113	98	106
25.	141	84	97	116	100	108
26.	126	76	99	105	98	102
27.	114	82	94	96	99	98
28.	122	85	82	102	96	99
29.	142	88	78	120	87	103
30.	142	104	76	126	91	108

or altogether incredulous as to any traceable influence exerted by either of the primary planets.

But if we admit the possibility of ethereal rotation, or tendency to rotation, and especially if we consider how much we have yet to learn concerning the properties of elastic fluids. we may reasonably look for important disturbances from the cumulative effects of the undulations which are exerted by planetary action. Those disturbances, however, may be so modified by the daily fluctuations of the lunar tides, by differences in the stratification of the atmospheric currents, and by abnormal local influences of various kinds, as to obscure, either wholly or in part, all traces of cyclical regularity in their alternations of maxima and minima.

In the accompanying comparative tables there are both accordances and discordances, for which I can account in no other way than by the hypothesis of cumulative aerial waves, excited by the combined action of the two constituent orbs of our binary star, Sun and Jupiter. The magnitude of the flexures in the several rain-curves seems too great, the resemblances and gradations in order of magnitude too marked, the approximations to consistent regularity too uniform to be merely accidental. The deviations, however, from seemingly normal curvature are

TABLE II.

Normal Percentages of Rainfall at various Stations in Jovian Synodic years.

	Greenwich, 1815–69.	Philad'a, 1826–74.	Lisbon, 1854–70.	S. Francisco, 1849–72.	"Husband's" 1847–72.	Average.
1	100	105	81	118	112	103
2	102	102	88	136	116	109
3	100	99	99	132	116	109
4	98	100	108	111	112	106
5	99	101	110	99	105	103
6	102	101	99	96	100	100
7	104	98	86	85	100	95
8	102	98	84	71	101	91
9	97	95	96	76	98	92
10	91	95	107	108	96	99
11	90	99	112	141	101	109
12	94	106	113	141	108	112
13	97	113	116	118	106	110
14	95	115	120	107	103	108
15	92	110	122	104	103	106
16	90	103	117	87	99	99
17	92	98	103	67	94	91
18	97	100	86	63	90	87
19	100	103	76	69	86	87
20	104	104	76	73	81	88
21	109	101	81	79	78	90
22	114	96	86	84	80	92
23	115	91	96	87	92	93
24	111	88	103	90	106	100
25	105	88	108	98	108	101
26	103	90	113	114	102	104
27	102	94	116	129	98	108
28	100	99	112	119	99	106
29	97	103	98	98	103	100
30	97	106	84	98	108	99

so great and so frequent, that my convictions of causal nexus are often wavering. I cannot expect that others, who have been less interested in the study of cyclical meteorology, will accept my qualified belief in systematic disturbances by Jupiter or other planets, until a sufficient number of observations have been compared at a sufficient number of stations, to furnish data for successful prediction.

Notwithstanding my persuasion that such data will be at some time attainable, I see, as yet, few encouraging indications of any conclusive and satisfactory termination for my researches in this particular direction. This very vagueness and lack of certainty furnishes a new and somewhat unexpected argument in favor of appreciable lunar weather-action ; for, if the tabulation of rainfall in planetary cycles had not shown so great deviations from uniformity, the regularity might, perhaps, have been regarded as an accidental resultant from some unknown law of harmonic functions, entirely independent of the influence assumed as a supposed cause. The impossibility of explaining the regularity by simple tidal action would have fully justified such skepticism.

But when we find that the lunar tabulations bring out such accordances as I have already shown (Proc. Amer. Phil. Soc., x, 436—9, 523—37 ; xi, 203 ; xii, 38—9, 178—90, 523—9, 556—9), while the Jovian influence, although possibly greater in point of magnitude, is more questionable and more easily overcome or hidden, I think we have good reason to consider the fact of lunar influence as practically demonstrated, and to hope, at no distant day, for a valuable extension of our weather-forecasts by means of that influence.

Comparing the several sets of normals in these tables, by noting the agreements or disagreements in the excess or deficiency of average rainfall at corresponding periods, we find no marked evidence of resemblance in the nine-years' groupings ; but in the twelve-year groups, corresponding nearly to a Jovian year, there are eighteen agreements to twelve disagreements, and there is a degree of resemblance in the aspect of the plotted curves which it is difficult to believe accidental. A similar comparison shows a similarity of character between the curves at Philadelphia, Lisbon, San Francisco and Barbadoes, and an opposition between each of them and the higher-latitude curve of Greenwich.

CYCLICAL RAINFALL AT BARBADOES.

By Pliny Earle Chase.

(*Read before the American Philosophical Society, June 19th*, 1874.)

I confess to a feeling of some disappointment at the first results of my examination of the lunar monthly rainfall at "Husband's" Station in the island of Barbadoes. If I had no more satisfactory evidence of cyclical regularity, and if further study had not enabled me to eliminate some of

the disturbing elements, I should have been compelled to consider the evidences of lunar influence on the weather quite as questionable as those of discoverable planetary influence.

My predictions of increasing range and regularity of disturbance, in approaching the equator, had been confirmed by comparisons of observations in Great Britain, Canada, New England, Philadelphia, Lisbon and San Francisco. Their apparent failure in an island which seemed, on many accounts, so favorably situated for their verification, cast a shadow of doubt on my previous conclusions, and I was even inclined to ask if it could be possible that the many coincidences which I had taken as indicative of law, were merely accidental.

This skepticism, however, was soon removed. The cumulative action of the aerial tidal-waves in blending different currents, of which I have so often spoken, may be easily obscured, if it is not wholly overborne, by insular influences, by the violent hurricanes to which the Windward Islands are subject, and even by the occasional intrusion of the south-easterly trade-winds. Where there is a liability to sudden heavy rains, any one of which would suffice to make important changes in a curve

TABLE I.

Normal Percentages of Rainfall at "Husband's," in Thirtieths of a Solar Year, and on Lunar Days at Different Epochs.

	Solar.				Lunar.						
	1847-'56.	1856-'64.	1865-'73.	1847-'73.	S. Sol.	W. Sol.	Ver. Eq.	Aut. Eq	V. and A. Equinox.	S. and W. Solstice.	Year.
1	64	62	82	69	92	82	122	95	101	73	93
2	55	51	75	60	98	83	104	100	104	83	96
3	50	49	62	53	100	90	94	110	116	92	103
4	45	54	52	50	99	95	94	118	119	95	104
5	38	53	41	44	98	98	103	107	114	96	104
6	33	41	29	34	100	105	110	104	109	103	104
7	34	30	23	29	107	118	105	109	104	111	109
8	34	33	23	30	115	130	94	123	106	114	116
9	37	44	25	35	119	135	88	133	113	117	121
10	48	50	31	43	117	136	89	136	124	122	125
11	65	53	45	55	115	135	95	126	121	131	123
12	82	63	60	69	117	127	104	111	107	133	116
13	92	82	76	84	115	109	104	101	101	126	108
14	94	95	101	96	115	90	98	96	104	121	105
15	98	96	130	107	113	78	90	93	99	121	100
16	107	101	140	115	108	75	92	82	83	111	90
17	118	115	129	120	88	79	80	70	70	97	79
18	132	132	122	129	79	89	86	66	67	96	77
19	140	144	139	141	82	101	88	74	72	102	84
20	137	146	153	148	83	106	86	85	82	96	89
21	141	145	170	152	78	97	81	91	92	86	88
22	154	147	165	155	77	83	77	89	93	80	85
23	160	154	166	160	83	80	83	84	88	78	82
24	164	174	188	173	92	89	97	86	76	79	86
25	181	197	190	189	97	100	107	93	81	82	93
26	196	204	167	190	100	104	103	102	94	92	99
27	181	182	131	166	105	101	105	107	110	105	106
28	140	136	106	128	106	100	130	109	120	102	110
29	103	94	92	96	101	97	154	105	123	84	107
30	79	74	85	79	92	89	147	99	112	71	98

representing the mean of several years' observations, it is not strange that great care should be needful in order to determine the approximate character of the normal flexures.

My previous discussions having shown that the lunar rain-curves at a given station vary somewhat at different seasons of the year, I first computed the normal curves at "Husband's" for each month of the year independently, and then "smoothed" the curves by taking the fourth successive means between the daily normals of successive months. This second series of normals, although insufficient for any conclusive inferences based on comparisons between consecutive months, should furnish approximate evidence of the normal changes, as well as means for making eighteen entirely independent comparisons between curves with intervals of five or six months. The normals for these two series of curves are given in Tables III. and IV. If there were no other than an accidental connection between the several curves, the chances of agreement or disagreement between the normal excesses or deficiencies of rainfall, in each independent comparison, would be equal, there being a probability of 15 days agreement and 15 days disagreement. The actual accordances and discordances and the ratios indicative of a *vera causa* in lunar action, are given below, 1 being the ratio of probable accidental agreement.

TABLE II.

Normal Proportions of Rainfall at "Husband's" on Lunar Days of each Calendar Month, for Independent Comparisons.

	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.....	29	31	10	49	66	51	49	121	121	112	76	41
2.....	32	32	11	30	60	58	54	132	136	120	67	50
3.....	34	31	17	15	58	64	60	129	143	157	73	58
4.....	33	29	25	9	58	76	64	110	144	164	95	48
5.....	34	34	30	11	57	85	73	91	137	148	112	33
6.....	38	41	27	16	56	78	94	83	120	148	119	31
7.....	42	39	18	19	58	68	107	99	108	154	134	42
8.....	47	31	12	18	60	70	102	126	114	161	156	48
9.....	56	26	9	15	62	77	95	138	130	170	166	45
10.....	61	29	10	16	59	88	93	125	151	181	162	43
11.....	58	38	13	21	49	114	89	107	154	158	153	44
12.....	49	42	21	29	41	134	85	104	123	134	142	43
13.....	38	36	28	30	39	119	89	113	96	135	114	47
14.....	32	27	34	23	41	85	106	127	93	148	77	59
15.....	30	22	32	16	45	64	124	134	93	143	53	64
16.....	31	24	22	15	44	57	119	115	83	117	56	53
17.....	34	27	14	16	45	55	94	81	71	98	69	42
18.....	40	28	15	18	49	63	72	62	61	99	77	47
19.....	44	28	15	23	46	75	63	73	64	105	91	55
20.....	41	31	12	30	36	75	62	84	79	114	111	46
21.....	35	31	11	35	26	68	69	80	93	126	114	29
22.....	33	28	12	38	22	61	73	85	90	129	100	20
23.....	36	29	10	36	31	55	71	102	72	121	88	20
24.....	41	31	12	24	57	54	67	109	65	117	97	23
25.....	38	31	17	12	77	57	66	103	85	119	117	31
26.....	34	32	21	12	94	67	74	103	105	133	120	40
27.....	33	35	20	32	46	77	85	120	106	156	102	49
28.....	32	39	19	58	50	69	81	136	96	170	92	55
29.....	28	39	19	68	71	52	63	127	96	165	91	53
30.....	27	35	14	63	76	45	50	115	104	142	88	44

		A.	D.	Ratio.
Jan.	June.....	24	6	4.00
"	July	25	5	5.00
"	Aug.....	20	10	2.00
Sum.....		69	21	3.29
Feb.	July	24	6	4.00
"	Aug.....	23	7	3.29
"	Sep.	24	6	4.00
Sum.....		71	19	3.74
Mar.	Aug.....	18	12	1.50
"	Sep.	21	9	2.33
"	Oct.	20	10	2.00
Sum.....		59	31	1.90
Apl.	Sep.	20	10	2.00
"	Oct.	17	13	1.31
"	Nov.	19	11	1.73
Sum.....		56	34	1.65
May	Oct.	24	6	4.00
"	Nov.	25	5	5.00
"	Dec.	23	7	3.29
Sum.....		72	18	4.00
June	Nov.	23	7	3.29
"	Dec.	23	7	3.29
"	Jan.	24	6	4.00
Sum.....		70	20	3.50

		A.	D.	Ratio.
July	Dec.	23	7	3.29
"	Jan.	25	5	5.00
"	Feb.	24	6	4.00
Sum.....		72	18	4.00
Aug.	Jan.	20	10	2.00
"	Feb.	23	7	3.29
"	Mar.	18	12	1.50
Sum.....		61	29	2.10
Sep.	Feb.	24	6	4.00
"	Mar.	21	9	2.33
"	Apl.	20	10	2.00
Sum.....		65	25	2.60
Oct.	Mar.	20	10	2.00
"	Apl.	17	13	1.31
"	May	24	6	4.00
Sum.....		61	29	2.10
Nov.	Apl.	19	11	1.73
"	May	25	5	5.00
"	June.....	23	7	3.29
Sum.....		67	23	2.83
Dec.	May	23	7	3.29
"	June.....	23	7	3.29
"	July	24	6	4.00
Sum.....		70	20	3.50

	A.	D.	Ratio.
Summer, Winter.....	22	8	2.75
Spring, Autumn.....	21	9	2.33
Vernal Equinox, Autumnal Equinox.....	18	12	1.50
Summer Solstice, Winter Solstice.....	23	7	3.29
Mean Annual.....	22	8	2.75

TABLE III.

Normal Percentages of Rainfall at "Husband's," on Lunar Days of each Calendar Month, for Independent Comparisons.

	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1.....	76	98	57	184	128	70	62	112	116	81	74	95
2.....	83	99	64	112	115	81	68	122	130	87	64	116
3.....	89	97	95	56	112	89	75	119	137	114	70	133
4.....	88	91	138	35	112	105	80	102	137	119	93	111
5.....	90	106	169	41	111	118	92	84	131	107	108	75
6.....	99	129	153	60	109	109	117	77	115	107	114	72
7.....	109	122	103	70	112	94	134	92	104	112	129	96
8.....	124	97	67	67	115	97	128	117	109	117	150	111
9.....	147	81	54	58	119	107	119	128	124	123	160	104
10.....	161	91	54	59	114	122	117	116	144	131	156	99
11.....	153	120	75	80	94	158	112	100	147	114	148	101
12.....	129	133	116	108	79	136	106	96	118	97	137	100
13.....	101	113	162	113	75	165	111	105	92	98	110	109
14.....	84	93	194	87	78	118	133	118	89	107	74	136
15.....	79	69	163	61	86	89	155	124	88	104	51	148
16.....	80	75	123	56	86	79	150	107	80	85	54	123
17.....	88	85	82	61	86	77	118	75	68	71	67	97
18.....	105	87	67	67	94	88	90	58	59	72	74	109
19.....	116	89	63	87	89	104	79	68	61	76	88	127
20.....	108	98	70	114	70	105	78	78	75	82	107	105
21.....	93	99	64	131	51	94	87	75	89	91	110	66
22.....	86	88	65	141	42	85	92	79	86	93	96	47
23.....	96	90	58	134	61	77	88	93	69	88	85	46
24.....	109	99	65	92	110	74	83	101	62	85	94	58
25.....	101	98	96	44	149	79	83	95	81	86	113	71
26.....	89	109	117	46	130	93	92	95	101	96	116	92
27.....	88	111	115	122	89	107	107	112	101	113	98	112
28.....	84	122	109	218	96	96	102	126	94	123	88	126
29.....	75	122	105	257	138	73	79	116	92	120	88	121
30.....	71	109	76	237	147	68	68	107	99	103	86	102

If these accordances can be properly interpreted as indicative of lunar influence, they represent results analogous to those we might look for from the simple means of observation extended over a period of about one hundred years. When the average daily temperature is most settled, near the Summer and Winter Solstices, the lunar curves seem most accordant, while they are most opposed when the changes of season and temperature are most rapid and in the most opposite directions, near the Vernal and Autumnal Equinoxes.

Having thus shown that the general agreement is too great to be regarded as merely accidental, and that there are valid reasons for important differences in the curves for different months, we are prepared for the sixty-six comparisons of entirely independent curves, for which Table III. furnishes the data. The sums of the agreements and disagreements between the curves for each month and for all the remaining months, are as follows:

	A.	D.		A.	D.		A.	D.
January,	173	157	May,	170	160	September,	198	132
February,	200	130	June,	198	132	October,	202	128
March,	190	140	July,	196	134	November,	188	142
April,	148	182	August,	180	150	December,	179	151

Here again we find convincing evidence, and in some respects more satisfactory than before, of a uniformity of lunar action that is obscured by the preponderating variations of solar action, only in the single month

TABLE IV.

Normal Percentages of Rainfall at "Husband's," on Lunar Days of each Calendar Month, for Independent Comparisons at Intervals of Five or Six Months.

	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1.....	84	90	111	126	102	86	86	98	99	90	81	81
2.....	91	91	94	102	97	89	95	109	108	94	83	85
3.....	99	95	87	89	93	92	98	113	117	110	98	96
4.....	97	96	91	91	97	97	98	109	118	115	106	100
5.....	94	104	105	99	104	104	99	101	109	111	104	96
6.....	101	114	113	101	104	107	102	99	103	108	106	100
7.....	111	110	102	97	102	108	109	105	106	112	116	115
8.....	118	101	86	91	102	111	116	116	116	122	129	130
9.....	122	98	79	89	105	113	119	124	126	132	136	136
10.....	127	107	83	90	109	117	120	125	132	138	138	136
11.....	130	120	99	98	117	125	120	118	124	128	129	131
12.....	123	125	116	110	125	132	120	108	106	111	116	120
13.....	109	116	119	112	118	125	118	105	104	100	103	107
14.....	99	105	111	102	102	114	120	113	102	97	94	97
15.....	94	95	98	91	93	110	123	117	102	90	85	88
16.....	87	86	84	88	87	103	115	106	91	80	75	81
17.....	86	85	79	77	83	90	90	81	73	70	72	79
18.....	97	94	85	84	88	86	77	67	65	69	77	88
19.....	108	100	89	90	93	90	80	70	69	76	87	101
20.....	104	99	93	89	89	88	83	79	80	87	95	103
21.....	89	91	92	85	81	83	83	83	87	93	109	93
22.....	77	83	90	83	76	80	84	85	87	90	88	81
23.....	79	86	90	86	79	80	85	85	82	82	80	77
24.....	88	92	91	94	91	87	86	85	81	82	83	84
25.....	94	93	91	99	102	94	88	87	88	91	95	96
26.....	97	95	94	97	102	99	96	96	98	102	104	102
27.....	101	105	110	106	102	104	107	108	107	107	105	103
28.....	104	114	136	135	113	104	108	111	110	109	105	103
29.....	99	112	151	159	124	96	93	102	106	103	103	101
30.....	89	99	134	151	119	87	83	94	100	98	93	90

of April. If we examine still more closely for clues which may be of possible future service in the study of the reasons for accordance and discordance, we find that in nineteen instances the discordance is greater than we should expect if it were merely casual; in five, it is the same; and in forty-two it is less; as will be seen by the following statement of the numbers of discordances, and the curves by which they are severally shown:

EXCESS OF DISCORDANCE.

20, Aug.—Nov.; 19, Jan.—Mar.; Apl.—May, Apl.—Oct., May—Jul., May—Dec., Nov.—Dec.; 18, Jan.—Apl., Apl.—Jul., Apl.—Sep.; 17, Jan.—Aug., Jan.—Oct., Apl.—Aug., Apl.—Nov., May—Jun.; 16, Feb.—Aug., Mar.—May, Apl.—Jun., Sep.—Dec.

AVERAGE DISCORDANCE.

15, Jan.—Feb., Jan.—May, Feb.—Dec., Mar.—Apl., Jun.—Aug.

EXCESS OF AGREEMENT.

14, Jan.—Sep., Feb.—May, Mar.—Aug., Mar.—Nov., Apl.—Dec., Oct.—Nov.; 13, Jan.—Dec., Mar.—Sep., Mar.—Dec., Aug.—Sep.; 12, Jan.—Jul., May—Aug., May—Nov., Jun.—Dec., Jul.—Sep., Jul.—Dec.; 11, Feb.—Apl., Feb.—Jun., Feb.—Jul., Feb.—Sep., Mar.—Jun, Jun.—Oct., Jul.—Aug., Jul.—Nov., Oct.—Dec.; 10, Jan.—Jun., Feb.—Oct., Feb.—Nov., Mar.—Oct., May—Oct., Jun.—Jul., Jun.—Sep.; 9, Mar.—Jul.,

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TABLE V.

Normal Percentages of Rainfall at "Husband's," on Lunar Days of each Calendar Month, for Forecasts.

	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1.....	85	94	110	117	106	91	89	95	97	90	81	82
2.....	90	92	95	99	96	92	97	105	105	95	86	86
3.....	97	94	90	89	92	94	100	110	114	109	101	97
4.....	98	95	92	92	95	92	100	109	115	114	107	101
5.....	97	102	103	102	103	103	101	103	108	109	104	98
6.....	104	108	108	105	104	105	102	101	103	106	105	102
7.....	112	108	103	99	102	107	108	106	107	112	115	114
8.....	117	102	91	92	101	110	115	116	118	122	128	127
9.....	120	99	86	90	103	113	119	123	127	132	135	132
10.....	124	106	91	93	106	116	120	126	132	136	138	134
11.....	128	118	104	103	114	122	121	120	124	127	129	130
12.....	123	122	117	115	123	127	120	111	108	111	116	120
13.....	110	115	116	115	118	122	116	108	103	102	103	107
14.....	100	105	107	104	105	113	117	112	104	98	96	97
15.....	93	96	91	93	97	109	118	115	103	92	87	89
16.....	85	86	84	83	90	102	109	104	92	82	78	81
17.....	84	84	80	79	83	90	88	81	74	71	73	79
18.....	94	92	87	85	86	84	77	69	66	70	78	88
19.....	104	99	92	90	91	88	80	72	69	75	88	99
20.....	103	99	94	90	89	87	83	80	82	87	95	101
21.....	91	91	90	86	82	83	83	84	88	96	101	96
22.....	79	83	87	85	79	80	83	85	87	89	87	82
23.....	80	85	88	85	81	81	84	84	88	81	80	78
24.....	88	91	92	92	91	88	86	84	82	82	83	85
25.....	93	93	94	98	99	94	89	88	89	91	94	95
26.....	98	95	95	97	100	99	96	96	99	102	103	101
27.....	102	105	108	106	104	104	106	108	107	107	105	103
28.....	106	117	130	130	116	107	108	110	110	108	106	104
29.....	103	118	143	148	126	102	96	101	105	105	103	101
30.....	92	105	130	139	119	94	87	93	98	97	94	91

Jun.—Nov., Jul.—Oct., Sep.—Oct., Sep.—Nov.; 8, Aug.—Oct.; 7, Jan. —Nov., May—Sep., Aug.—Dec.; 6, Feb.—Mar.

The greatest amount of change produced by the lateral smoothing is shown in the following summary of comparisons between Table III. and Table V.:

	A.	D.		A.	D.		A.	D.		A.	D.
Jan.	22	8	Apl.	21	9	Jul.	26	4	Oct.	24	6
Feb.	26	4	May	19	11	Aug.	23	7	Nov.	23	7
Mar.	23	7	Jun.	22	8	Sep.	23	7	Dec.	18	12

Table V. is formed from Table IV. by taking two additional successive means. I am inclined to think that its normals would best represent the means of observations extending over indefinite long periods, but Table III. would perhaps more nearly indicate the disturbances of mean lunar influence that might be expected at different seasons of the year. It is possible that by systematically comparing monthly observations with each of the tables, probable causes for any marked deviations from the normals might be found.

Table I. presents three sets of solar and six sets of lunar normals, each of which is derived from observations extending over equal, but non-correspondent, periods of one hundred and eight months. They therefore furnish data for three entirely independent solar, as well as for seven entirely, and three nearly independent lunar comparisons. The lunar columns cover twenty-seven years' observations in the following months: Summer Solstice, May to August, inclusive; Winter Solstice, November to February, inclusive; Vernal Equinox, February to May, inclusive; Autumnal Equinox, August to November, inclusive; Vernal and Autumnal Equinox, March, April, September, October; Summer and Winter Solstice, June, July, December, January. The solar columns exhibit, as we might expect, the closest accordance. The lunar, in spite of the great irregularities in Spring and Fall, also exhibit a predominance of accordances in each of the ten comparisons, whereas, if there were no well-marked lunar action, we ought to have found a predominance of disagreements in five of the comparisons.

The accompanying curves illustrate some of the more important results of the foregoing discussion:

Curves 1–12 (Lunar), illustrating Table IV.

1. January.	4. April.	7. July.	10. October.
2. February.	5. May.	8. August.	11. November.
3. March.	6. June.	9. September.	12. December.

Curves 13–15 (Lunar), illustrating Table I.

13. Summer Solstitial, continuous line.
    Winter " broken line.
14. Vernal Equinoctial, continuous line.
    Autumnal " broken line.
15. Mean Equinoctial, continuous line.
    " Solstitial, broken line.

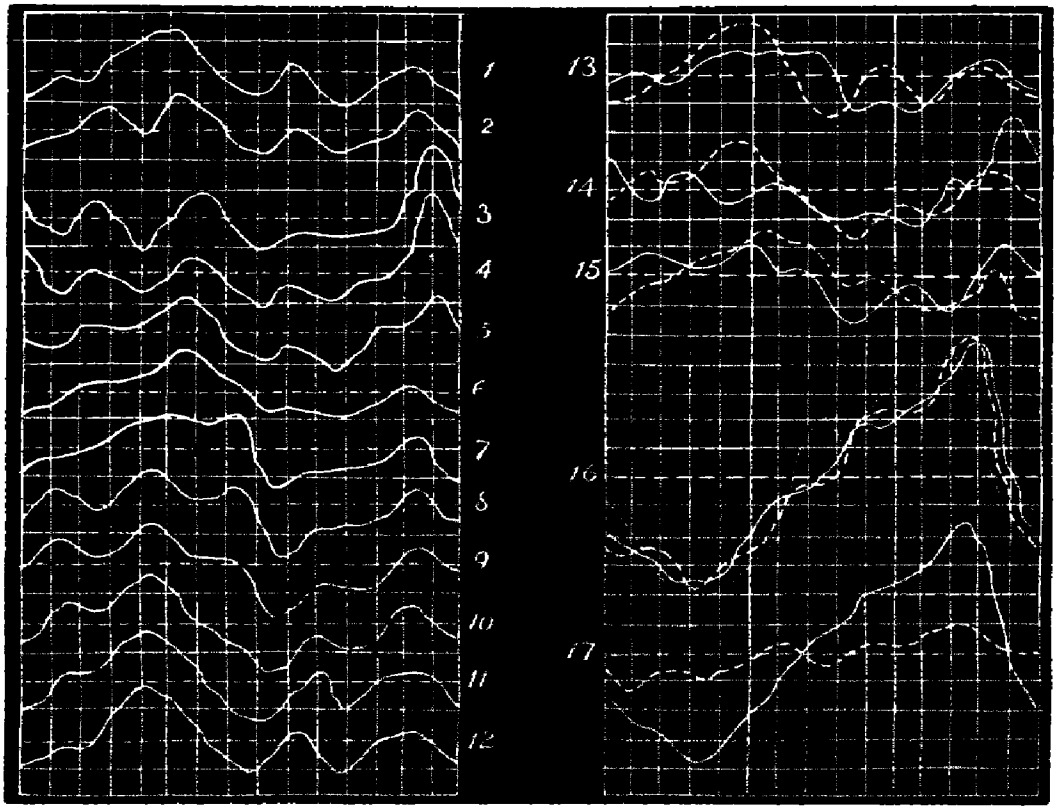
Curve 16 (Solar), illustrating Table I.

16. 1847–'55, continuous line.
    1856–'64, broken line.
    1865–'73, dotted line.

Curve 17 (Solar and Lunar), illustrating Table I

17. Solar mean, continuous line.
    Lunar " broken line.

The horizontal line in each figure represents the mean daily rainfall for the entire period represented by the curve: the abscissas, the times; and the ordinates, the normal percentage of excess or deficiency of rain-



fall. The origin of the abscissas is at New Year in the solar curves, and at full moon in each of the lunar curves, except figure 17, where it is taken at new moon in order to show the analogous effects of increasing radiation, both in the solar and in the lunar curves. At Lisbon, where the prevailing winds are from an opposite quarter, the lunar influence is also opposite, increasing lunar radiations and decreasing solar radiations, each bringing increase of rain.

"Husband's" Station is in St. Lucy's parish, northwestern part of Barbadoes, not far from the coast, 184 feet above the sea. In the following tables, new moon, first quarter, full moon, last quarter, are respectively marked by, n, a, f, b.

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1847.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	f	.23	f	.06			.05	.02	b .48	b .03	.25	.06	
2	.30			.10	.01		.01	.50	.04		2.90		
3	.10			.07			.01	b .23	1.28		.70	.15	
4	.07	.01	.01			.01		.16	.23				
5	.05		.07	.11		b .06	b 1.67						
6	.07						.01	.10	.13	.04	.27		
7	.01		.07		b		.02	1.15	.31	.71 n		n .02	
8	.03 b			b			.36				.04	.01	
9	b 01		b .07			.07	.03		n .64	n	.03	.01	
10	.06		.05	.34		.63	.03 n	.09	1.55	.73	.01		
11	.23	.01		.28			.01	.01		.17	.05	.01	
12	.16	.05	.01			n .11	n .51			.09		.14	
13	.14		.02	.12								.12	
14	.19	.15	.05	.16	n .48	.01		.25	1.34	.40	.99	a .01	
15	.05 n	.06		n .03	.08		.04	.09		.09	a .79	.63	
16	n	.01	n			.10		.05	1.89	.09	.03	.24	
17	.28	.01	.10			.08		.10	a .04	a	.04		
18		.06	.10	.11		.03	a	.05	.56		.04	.45	
19	.02	.09			.01			.05	.36			.01	
20	.25	.02	.01	.27		a	a	.02	.27	.28			
21	.23	a .02		.06	a		.05		.03			f	
22	.06	.02	.01	a .10		.04	.04		1.27	.03	f .53	.03	
23			a				.20	.10	.50	f .01	.26		
24	a .13							.02	f .22	.11	.11		
25	.02							.01	.16	.25	.07		
26	.04		.47				.36	f		.72		.33	
27	.04						f	.16	.05	.70	.03	.24	
28	.01	.01				t		1.80	.57	.66			
29			.13		f .04	.42		.02	.45	.43	b .61	b .03	
30	.02		.01	f .06	.06	.08	.05	.01		b .94	.50	.01	
31	f .05		f					.01		.30		.22	
Sum	2.62	0.75	1.90	1.85	0.68	1.58	3.45	5.00	12.37	6.78	8.25	2 72	

January 1st, to December 31st, 1848.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	.35					n					.40		
2	1.34						.11		.13	1.12		.48	
3	.01			n	n		.13		.20	3.75		a	
4	.03 n					.04	.89			1.54 a			
5	.05		n					.37 a		a			
6	n .28					.20		a			1.50		
7	.03		.10		.18	.10	.32	2.95					
8	.02			.13		a	a	1.62	3.30				
9	.08	.01			a			1.52					
10		.05		a		.09		.19			f	f	
11	a	.02	a .05										.49
12	.05	.09	.06							f			
13	a				.43				f .23				
14	.03						.15	f	1.73				.31
15	.01			.09		.25		.13		1.78			
16	.15	.07				f	f .86		.03				
17	.36	.48	.31		1 04			.13			b	b	
18	.08 f		.01 f		f					.36			.19
19	.45	.01 f	.04			1.25	.36		b	b			
20	f .05	.10			.37				1.50	1.50			.35
21	.15							b 1.75			.59		
22			.09	.07			.45						
23	.03		.16				b		.03	1.80	.13		
24	.08					b .21		.10					.50
25	.05	.08		.30	b	.35			.35		n	n	.23
26		.01		b				.31		n 1.15			
27		b .03	b				1.16		n				.65
28	b	.09			1.07			n		.20	.60		.37
29		.08					1.10			.78			
30				.31		n .05	n				.05		
31			.14		.94		.17	.18		2.25		.21	
Sum	3.68	1.12	0.96	0.90	4.03	2 55	5.70	9.20	7.50	16.23	3.27	3.78	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1849.

Days.	Jan.	Feb.	Mar.	Apl.	May.	Jun.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1		.20	a			.05		.07		.78			
2	a					1.20		f .17		f		.72	
3						.19		f.40				.07	
4	.13								.70	.85		.03	
5						f	f .12					.01	
6					1.20					.30		b .26	
7		f		f	f	.14	.10	1.50	.07	1.75	b	.54	
8	f .35		f. 12		.49					b .42		.81	
9						.30		.23	b.50	.90		.01	
10	.04	.30				.38	.39		.75	.30		.05	
11	.20			.74	.11			b	.14	.05			
12							.54	.45		.02			
13						b	b .26					.01	
14	.32	b			.11		.87				n .04	n .04	
15				b	b	.37	.36		.78		.87		
16	b	.97	b.84		.42	.67	.11	.84	n	n			
17						1.00			.33	.05	.05		
18							.14	n	.24	.32			
19				.42			n			1.20			
20	.33					n .15					.25		
21		.60											
22		n	1.04	n	n			1.40			a .02	a	
23			2.12				.87				.03		
24	n		n				.18		a	a			
25	.52				.05	.05		a .08	.12	.55		.36	
26	.87	.14		.44	.22	1.35	a						
27						a .95	.14					.02	
28		.04			a		.58					.04	
29	.57			a					.85	.05	f .14	f .01	
30					.36	.14	.58		.60			.05	
31	a .67		a				.56			f			
Sum	4.00	2.25	4.12	1.60	2 96	6.94	5.80	4.97	5.25	7.54	1.40	3.03	

January 1st, to December 31st, 1850.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		2-08	.06	.08		.15		b .02	.09			2.70	
2		.11		.02		b .05	b	.20	.27			2.10	
3	.49	b				.51	.25			.11	n	n .03	
4	.04			b .03	b	.28	.27	.22	.02	3.06	.13	.23	
5	b		b	.08				.15		n .26	.16		
6				.02	.16		.07	.95	n			.25	
7	.02	.40		.02	.42			n .15	.09	.02		.05	
8	.01						2.75		.02	4.35	.05		
9						.15	n .28	.05	.18			.07	
10						n .45	1.13	.28	.14			.11	
11		.10			n .14			.28			a .55	a .11	
12		n		n			.10		.03	a .02	.17		
13	n .25		n .06					.02	a .07		.02		
14				.30		2.90	.48	a .10	.17	.18			
15				.16			.65	.22	.23	.44		.09	
16			.44	.06		a.45	a .04	.84	.08	.16		.07	
17		.04					.49	.61		.10	.82		
18				.05	a		.22				.02	f	
19	.16	a		a 3.00	.10		.18			.41	f	.08	
20			a	.08		.06				f	.08	.12	
21	a	.30				.30		.12	f	.15	.08	.02	
22		.08						f .01			.50		
23					1.67		.06				1.74		
24		.25				f	f .03	.02	.06	.13	.04		
25				.08	f	1.25	.11		.25		.02	b .10	
26		f14		f .88			.36			.13	b .06		
27	f		f .24			.15	.09	.73	.19	b	.54	.15	
28						.80	.35	.82	b .33	.05	3 82		
29							.02	.11	.04	3.00	1.50		
30					.05	.30		b 2.40	.10	3.20	.67	.07	
31	.15				.16		.35	.97		.15		.04	
Sum	1.12	8.50	.80	4.36	2.72	7.80	8.28	9.28	2.36	15.92	10.97	6.39	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1851.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		n .05		n	n				.18	a			
2	n	.03	n						a	1.05	2.02	.41	
3	.08				.73			a	.15	.10	.11	.24	
4	.04	31	.03								.02		
5			.04				a	.50	.04	.22	.31		
6	07					a	.65		.54			f .32	
7			.03	.24			.31		.04	.13	.08	.03	
8		.03	.04		a			.15			f		
9	.04	a		a			.09				.03	.80	
10	a .12		a		.89	.22	.07		f	f .02	.18	.11	
11						.19	.04	f2.69					
12		.50	.13	.90		.36			.08		.03		
13	.12	.13	.57		f	f		.94	2.78	.48	.90		
14				.25	.07	.26	.18		.77	1.46	.83		
15	.07	f .12	.24	f	f		.03			3.74		b .11	
16	.03	.25	.04		.82	.73	.44				b .10	.39	
17	f .03	.36	f			1.25		.67		b		.27	
18		.09			.11	.18	.51		b			.09	
19	.04					.32	.09	b .04		1.21		.19	
20						.05	.04	.54		.24		.11	
21					b	.23	b	.24	.58		.14		
22		b .42		b	b	.22	.15	.04	1.67	.25	n	n .28	
23		.04		.20		.20	.40	.30			.11		
24	b .07		b		.22	.04		1.86		n.57	.05		
25	.10	.03		.03			.31	.08	n .26		.20		
26						.15	.18	n .05		.86		.15	
27	.03			.02	1.02	.70			1.10		.40	.25	
28						.91	n .17	.12	.15	.15		.16	
29	.05			.08			.42					.02	
30					n .09		.64	.08	.04		a .05	a .09	
31	.16							.50		a			
Sum	1.05	2.36	1.12	1.72	3.45	6.01	4.72	8.80	8.38	9.98	5.56	4.02	

January 1st, to December 31st, 1852.

Days.	Jan.	Feb.	Mar	Apl	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		.03				.45	f .04				.04	.09	
2					.01	f					.01	.07	
3			.05		f	.12	.18				.15	1.10	
4		.35	.16	f	.11	.03	.36	.04			b .35	b	
5		f .22				.04	.22		.32		2.05	.21	
6			f .13			.07	.04	.11	b .22	b	.37	.01	
7	f		.14			.05	.10	b .27	1.65		1.15	.05	
8	.80	.12	.02			.03	.10		.51	1.21	3.78	.05	
9	.12	.03				b .18	b	.68	.02	2.74	.60	.06	
10		.32	.08		b					.13		n	
11	.30	.04		b		.09	.01	1.40		.03	n	.05	
12		b	b .48		.13		.04	3.30	1.20			.20	
13	b .27	.18	.36	.01	.03		.16	.02	n .94	n	1.76	1 04	
14	.10		.16	.96	.14	.23			.01	.34		1.30	
15				.01				n .09	.01				
16	.24					.14	n .26	.07			4.05		
17	.05			.02		n .08		.07				.21	
18	.06	.02	.25		n .05		.04	.01			a .52	a	
19	.02	n .20		n			.27	.08		a		.06	
20	.07		n					.02	a		2.86		
21	n .12				.14	.02							
22		.08			.66	.06	.14	a	.41				
23	.35	.01			.12	.31	a .02	.29	.32				
24	.12	.09				a		.15	.09				
25	.19				.25	.04	.01	.03				.05	
26		.03	.19	.27	a .08	.10	.21				f	f	.26
27	.07			a	1.70	.02	.01			f			
28		a .01	a		3.22	.76	.14		f				
29	a .07	.15						f .09	.26	1.31			.35
30	.10			.10		.01	.03	1.09	.07	4.87			.03
31							f						.05
Sum	2.55	1.68	2.02	1.37	6 64	2.78	2.38	7.81	6.03	10.13	18.29	5.24	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1853.

Days.	Jan.	Feb.	Mar	Apl.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		b .27		.31			.20	.06	.03	.82 n	.20	.05	
2	b .08	.16 b				1 14	.02	.11	.04 n	.01	.22	.15	
3	.29	.85	.18			.69		1.64 n		.82	.20	.55	
4		.03					n .10				.05		
5	.23		.12	.16			.10	.15	.02	.08	.82	.01	
6			.12			n	n .57			.10	.02		
7	.14		.04		n .23	.02			.26	.01 a	1.09 a		
8	n		.26 n	.04	.45	.19	.14	.06	.01		.20		
9	n	.14 n	.04	.09	2.23	.05	.12	.19	.13 a	.02	1.83		
10		.85	.39	.06	2.28		.12	.03 a		.73	.31		
11			.32	.10			.85 a	.19	.12				
12	.26	.60	.25	.26				.08	.02	.05	.01		
13	.20		.01		.21		a .09	.37	.85				
14			.08			a .04			.05	.07	.04		
15		a .01	.18	.05		.08	.05			01 f		f	
16				a	a		.05			f	.48		
17	a	.02 a	.03	.01		.11	.18	f	.65	.68	.20	4.50	
18			.08	.02		a .60		f .03	2.37	.24	.05	.11	
19			.17	.04			.21	.11	.13		.10		
20			.08	.14		.03 f		1.20		.08	.01		
21				.29		f .03		1.16		.80			
22	.05		.03		f 3.77	.07		.14	.05	.48	.18		
23	.02 f		.06 f	.34		1.20	.11	.10	.07	b	.36 b		
24			.05	.13	.03				.48	.15	.01		
25	f	f .01	01				.02	b	.05 b	.35	.09		
26	.06	.02		.04		.11	.09 b	.20	.02	.85	.45	.64	
27	.06			.03		.09 b	.85	.40	3.23		.33		
28	.12	.02	.12	.25	.11	b	.22		3.61		.01		
29	.28			.09	b		.28	.02	.01	1.42		.15	
30			b			1.10	.02	.02	.06	n	.01 n	.01	
31	.69		b		4.28		.03	.39					
Sum	2.48	2.97	2.62	2.46	13.59	5.55	4.26	6.75	12.26	7.75	7.27	6.17	

January 1st, to December 31st, 1854.

Days.	Jan.	Feb.	Mar	Apl.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1			.01	.23		.57		a .04	.60	.45	2.27		
2		.15		.05		.03	.40	.14				.20	
3			.15	.11		a .40 a	.63	.02		.24		1 21	
4		a .01	.03	.08			.29			.23 f		f .25	
5	a .03	.04		a .13 a		.03		1.59	.04	.95	.67	.15	
6			a .01	.01			.05		f .03 f		.28	.07	
7				.04			.62	.02	.14	.30	.16		
8						1.35	f		.02	.09			
9		.11					.05		.58		1.64		
10	.16		.06			f .06 f		.06	.65		2 50		
11			.32			.40	.08		.01		3.25		
12	.28 f			f		.15	.19			.77 b	2.90 b		
13			.01 f			.01	.15		.02	b1.07	.65		
14	f .40	f	.05	.01				.01 b		.30	.07		
15	.29	.11	.01	.25	.17		.28 b	.22	.19			.87	
16			.02		1.14	.02 b	.05	.01	.01	.09			
17		.01			.02	b 20	.01		.23	.11		.12	
18		.05	.08			.06	.02			.44			
19			.07 b	b						1.84		n	
20		b	.01		.08				.02	n	.20	.24	
21	b		b				1.63	.11	.11 n	.07	.17		
22						.27	.05	n	.09				
23	.19	.14				.15	.39 n	.09	.07				
24							n 1 95		.18			.04	
25		.15			n		.04		.18	.17		.06	
26	.11 n			n	.13	.20		.19		1.21 a		a	
27	.16	.04		n .07		.68		.68	.44				
28	n .21	.03 n				.86	.44	.15	.01 a				
29						.05	.07	.40 a	.04	.21			
30			.30				.90	.23	.01				
31	.02		.04					a .16					
Sum	1.85	.84	1.12	1.02	1.55	5.49	8 29	4 12	3.67	8.54	14 76	3.21	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1855.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct	Nov.	Dec.	Total
1	.25 f		.16		f .70	.15		1 20	.22	.60 b	.09 b	.60	
2	.30		f		1.66			1 01	b	.48	.33		
3	f	.24 f			.85			.02 b	.05				
4	.04	.09					b	.51	.15				
5	.71						.81	.08	.32		.24	.64	
6	.46	.15					b .04	.03	1.21		30	.64	
7			.19			b .10	.11	.13			1.22	.06	
8			.79		b	.81		.10	1 05				
9	.57 b		.06 b					.38			n	n	
10	11	.05 b			.20		90	06	.35 n				
11	b1 76					.65	3.00	1.64 n	.73				
12	.12				.14		.45 n	.33				86	
13	.11	.08	.31				n	.05			.28		
14	.39				.28 n		.15	.03		.50	.03	.09	
15				.14 n			.04		.31	.26	.10		
16		n		n		.30	.20	.03	.69	a	15 a		
17			n			.09	.08		2.10	.10			
18	n	.20		.02			.20	.22	.05 a				
19							.40	.24 a					
20							.30 a	.03	.05			.86	
21	.39			.18		.35		.23					
22		.08	.05	.20		a .60 a				.05	.04	.10	
23		a .18	.06		a. 09	.90				.60 f	.81 f	.05	
24	a	.28		a .14	.38	.20	.10	3 20	.55		.05		
25			a			.25	.44	2 84 f		f .13	.10		
26			.50			.15				.73	.81		
27				.05		.30		f .73		.69	.25	.05	
28				.10		.63		.06	.01	1 06		.04	
29				.90	.20 f	.21 f	.10	.01		.10	.31		
30				2 20	.54	.05	.50	.15	.50		.26	.08	
31					f .14		.10			.10		b .18	
Sum	5.21	1 35	2 12	3 93	5 18	5.74	7 42	13 31	8 34	5.40	5 37	4 25	

January 1st, to December 31st, 1856.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	.31			.12		.11	50		.11		.02		
2		.05		.18		n	n .11				.18		
3		.02		.27			.56		1.08		.53		
4	.17		.32		n	.31	.07				.15	.12	
5	.20 n	.40	.44 n			4 20		.10			a .25 a	.16	
6		.30 n		.18				.08			2.34		
7	n .25	.10		.02		.02	.12	.70 a		a	.03	.73	
8	.08	.18	.04					a 1.30		.08		.75	
9		.03				.07	1.05	.58	.73	.04			
10					a	.02 a	.10	.17	.18			.27	
11		.07			a		.28		.13		2.23 f		
12	.25	.10	.35 a		.20			.58		.03 f	.02		
13		a .40 a						.77	.72 f		.29	.34	
14	a .10	.02							f .25	.25	.02		
15	.05							.05				.05	
16	.05	.12						f		.22			
17	.02						f .10		.22	.09		.01	
18						f	.28			.32	.85		
19		.25			f						b	b	
20		f		f	.09	.01	.18			b .07	.13	.05	
21			f	.01	.34		.05	.04 b			.02	.45	
22	f				.39			b .07	.80		.36		
23				.01	.41		.20	2.55	25	.06	.03		
24							b .01	.33	.27				
25						b .03	.32	.45		.96			
26		.02		.50		.03	.05			.02		.02	
27				b	b .22		.40	.10			n	n .05	
28		b			.41	.14			.06 n		.07		
29	b		b				.65		n	.02		.04	
30								n		.74	1.12	1.01	
31					.35		n			.14		.36	
Sum	1.48	2.06	1.15	1.29	2.42	4.94	5.03	8 17	4.80	3.04	8.14	4.41	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1857.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	.09 a			a		.09		.14	1.80		f .55	f .10	
2		.07 a			2.75			.28			.93		
3	a .02	.03			.05	.05	.80		f .06	f .07	.01		
4			.26	.16	.08	.17	.68	.24	1.00	.28			
5			.05		.38	.10		f .58	.41				
6		.37	.29	3.80	3.36			4.60	.28				
7		.12		.02		f .12	f .07		.04				
8		f .03	.09	.46 f				.12	.22		b	b	
9		.19		f	.20	.03		.20	.07		1.00	.31	
10	f	.68 f				.42		.30 b		b	.06	.03	
11		.10		.06		1.42	.06	.70	.06			.16	
12		.50	.68			.17	.90 b	.25			1.35		
13		.01	.07			.28		.18		.01	.28	.10	
14			.38			.52 b				.01	1.29	.07	
15	.15		.28		.21 b	.06			.02	1 21	.18	.25	
16		b .20	.11		b		.11	.85	.82	.08 n		n	
17	b .10			b		.10	1.08		1.42 n	.08	.95	.01	
18	.10	b					.05	.05 n	.16	.48			
19	.04	.72					.41 n			.07	.06		
20	.06	1 51					1.42				.09		
21	.11	.03		.10		n	n .47		.40	.19			
22	.14	.22				.10		.31	.20		1 06		
23	.70	.17	.33		n .31	.06	.22	.13	.68	.40			
24		n .34		n		.45		.51	.07		a	a	
25	n		n			.66		.03	.10 a			.05	
26	.11				.10	.85		.02 a	.30		.50		
27		.02				.23		a .75				.07	
28					a	a .16		.56		.17		.20	
29					.05	.21	.52	.06	.18	1.78		.50	
30	.10			a .27	a		1.20	.17	.20	.08	1.86	.08	
31	.12							1 14		.08		f .22	
Sum	1.84	5.51	2.52	4.87	7.48	6.09	7.65	11.07	9.01	4.99	10.17	2.15	

January 1st, to December 31st, 1858.

Days.	Jan.	Feb.	Mar	Apl	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Tota
1									.54		1.21		
2	.15	.14					.20		.10	.04	1.00	.01	
3	.03	.40			.79		.18				.18		
4		.60				b	b	b	.40	.13			
5	.10	b .10			.02		.65			.04 n		n	
6	.15	.04		b .08	b	.31	.20	.05		1.57	.58		
7	b .25		b .08			.05		.14 n		n .70	.40	.78	
8	.10			.10	.07	.34	.35			.30		.07	
9						.30	n .31			.40		.54	
10	.01				.09	n			.01	.85	.12		
11	.02	.01			.02	n .23	.22	.18	.36	.42	.03	.02	
12			.10	.10	.05	1.01	.23	.16		.10	.11	.06	
13	.08	n		n	n	.10	.30	47	1.00	.16 a		a .16	
14			.30	.30	.08		.33	.07	.25	1.30	.01	.08	
15	n		n				.15	.25 a		a .51		.28	
16	.21				.05		.10 a				.10		
17						.09 a					.10	.11	
18	.09	1.60	.02	.02	a	a	.08		.02		.10	.36	
19					a .14			.04			.07	.05	
20		a		a	.06	.15	.28				.19 f	.52	
21	.02				.13		.03	.90			f		
22	a		a .25	.25						f			
23							.29		f .10				
24							.08 f	.04	.46			.10	
25					.05		f	.17	.18				
26	.05					f .22			.79		.30		
27	.02 f				f .02				.16	.77	b 1.30	b .12	
28				f	.23			.17	.21	.52			
29	f		f		.11	.08	.55			b 1.00		.65	
30							.40	.40 b	.12	.04		.13	
31					.17			b		.72		.01	
Sum	1.23	2.89	.75	.85	1 94	2.62	4.92	3.30	4.70	9.07	5.80	4.05	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1859.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1	.04	.02					.03		.06	.30	.04 a		
2	.03	.25			n	.03		.65			a .60		
3		n .03		n	.03		.02	.07		a	.48		
4	n .04	.10	n			.06		.43	a .67	.10	1.54	.07	
5	.03	.01						a	.01		1.40	.44	
6	.07		.03			.15				.64		.21	
7	.02	.05				a .15	a .23			.20		.97	
8		.01					.15	2.19		.08	.14		
9		.27			a	.12	.05		.50	.12	.02		
10		a		a .07						.31	f	f	
11		.14		.16		2.00				f .08		.08	
12	a	.05	a				.31		f	.14			
13				.02			.08	f		.22	.51		
14	.23	.01	.06				.28		.18	1.34	.36		
15	.04			.11	.10	f	f		.40	.05	.08	.08	
16		.05			f .01	.30		.06	.20	.04	.30	b	
17	f		.03	f		.45			.18		b .09		
18	f .03	.07	f .07			.09	.24		.20	2.02	.06		
19	.03	.15							b	b			
20	.06	.05			.23		.22		.05				
21	.05				.20	.12	.05	b .26	.18	.08	.11		
22	.17		.31		.06	.53	.38						
23						b .36	b 1.35				.10		
24	.20	b			b	.20	.07		1.00		n	n	
25	b			b .30	.15	.33	.94		.18	.04	.07		
26			b	.01	.33	.15	.02		n	n .54	.10		
27	.18				.53	.54		.24		.37	.04	.18	
28	.09	.68		.03	.28	.04	.07	n	.03	.22	.08		
29					.06	.01	n		1.00	.04	.10	.16	
30					.65	n .68				.01		.13	
31					n .20		.08			.08		.41	
Sum	1.31	1.94	0.50	0.70	2.83	6.31	4.57	3.90	4.86	7.02	6.22	2.73	

January 1st, to December 31st, 1860.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug	Sep.	Oct.	Nov.	Dec.	Tot l
1	a .05	.18	.15						.09	.05	.06		
2		.17						1.05	5.95	.07	1.58		
3	.26	.05	.11			f	f .10		.01	.01	.19	.02	
4	.03	.21				.16	.04	.20	.23	.02		1.34	
5		.16		f	f			.39		1.96	.75	b	
6		.05		.14				.43	.02	.10	b		
7	.04	f .04	f	.06		.19	.21	.72	.61	b .06		.35	
8	f .20				.09			3.42	b .04	.04		.24	
9	.03					.05	.38	b .02		.14	.05	.02	
10	.26									.77			
11	.25			.11	.27	b	b			.86	.24		
12	.26	.04		.09	b	.23		.12	.14			n	
13		b		b	.01	.09			.69	.20	n		
14	.03		b				.09		.04	n .22			
15	b .07	.07	.01			.07	.13		n 1.32			.14	
16	.01					.04		n 85	.41	.41	.05	.08	
17	.15	.04		.07		.38	1.00	.10			4.35	.02	
18	.03		.04			.63	n	.06	.02	.30		.03	
19		.12		.02		n .07	.17	.11	.25	.11	.50	.21	
20		.02			n	.02	.26	.57	.10	.10	a .02	a .08	
21		n .30		n			.08		a .02	a .11	.05	.40	
22	n	.28	n					.20		1.67	.07	1.81	
23	.01	.01					.31	a 1.70	.05	.08	.04		
24							.45		.03	.57	.08		
25				.20		a	a .80		.84	.04			
26		.15					.10	.05	.15	.02	.07		
27		.08		.05	a		.08		.20	.02			
28		.10		a .18					.42	.08	f	f	
29		a .70		.11		1.05		.24	.45	f .01			
30			a			.01	.29	.12	f .12				
31	a				.37			f .63				.20	
Sum	1.48	2.97	0.31	0.98	0.74	2.99	3.99	10.98	11.70	8.02	8.10	4.94	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1861.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1	.15		.01	.46	b	.21	.08		.10			.11	
2	.01	b .42		b .07		.04	2.54				n	n .03	
3	.06	b		.01	.20	1.14	.63						
4	b .16	.02	.09		.10	.12		.02	n	n			
5						1.37	.96	.14	.04	.20			
6				.70	.11	1.13		n .17	.18		.50		
7			.22	1.35	.34	.05	.12	.91	.13		.37		
8			.04	.20	.29	n .60	n	.05		.08	.60		
9	.07	n		.35	n .03	.10	.42		.43	1.52	a	a	
10				n	.08	.14	.46			a .01			
11	n	.64	n			.01	.85	.77	a .05	.15			
12	.03	.36		.04	.03				.03	.04			
13	.28			.16	.10		.46	a .02	1.20	.08	.04		
14	.05		.03	.75		.05	.35		2.94	1.20	2.21	.28	
15	.37	.15	.02	1.50		a 1.85	a .03		.30	2.00		1.46	
16	.14			.01	.02	.06				.55	1.69	.17	
17	.08	a .10		.20	a	.53		.58		.55	f .03	f .50	
18				a		.08		.03	.14	f .47	.79	.59	
19	a		a .04		.11	.18		.10	f .14	.30	.04		
20		.80	.20	.06	.09	.16	.10	f	.13	4.00			
21		.21	.01		.C2			.01		.21	.08		
22			.06	.65	.19	f .04	f		.41	.06			
23	.79		.01	.55	.22		.40		2.24		1.05		
24	.03		.05	f	f .33	.01	1.20		.10	.80	.11	b .03	
25	.31	f .08		.02	.03	.16	.03	.02			b .82		
26	f .25		f .04	.05	.03	.52				b	.32		
27		.20	.01		.20	.06	.14		b				
28		.20	.30		1.50	.26		b .02			.05	.64	
29	.05		.03	.10	.87	.02	b		1.73	.40		.66	
30			.14	.27	2.28	b		.03			.31	.28	
31	.13				b1.00		.30	.38		4.00		n .46	
Sum	2.96	3.18	1.30	7.50	8.17	8.89	9.07	3.25	10.29	16.62	9.01	5.21	

January 1st, to December 31st, 1862.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1	.94	.02			.08				a .30	.07		.09	
2	.06		.04				1.00	.04		.03			
3	1.56		.02			.02		a		2.35			
4	.02					.10	a	.47	.01	6.00	.05	.35	
5				.36	.09	a .13	.32	.60	.07	1.27	.05		
6	.15	a			.36					1.61	f .38	f	
7	a	.14		a	a .06	.07	.17	.15		f	.12		
8	.10	.02	a			2.00	.07	.09	f			.02	
9	.04					.15	.09	f .10	.35				
10	.02	.04	.06					.23		2.10	.38	.49	
11	.02			.06	.06		f .01		.15			.69	
12	.10	.40				f .06				.10	1.05		
13	.15				f	.07		.04		.06	2.05		
14	.14	f .38	.07	f	.57		.31				b 3 03	b	
15	.11				.44			.10	.13	b .07	.60	.02	
16	f .15	.12	f			.46		.05	b	1.85	.04		
17	.05			.04			.75	b .15	1.00	.04	.70	.07	
18	.03						b .22		.06		.25		
19	.06			.06		b .29		.38			.25	.09	
20	.05				b .08	.06	.06	.26	.04				
21		b	.03	b .16		.04	.34	.30	.04	.12	n 1.20	n	
22	.05		b				.11			1.50	.70		
23	b .46			.02	.23	.03		.13	n	n		.82	
24	.74		.12	.18	.51	.02		2.65					
25	1.00			.42	.91	.45		n 2.06	.64		.02		
26					.04	.08	n	.30	.01				
27	.05					n .94	.20		.03				
28	.25	n		n	n	.75			.18		.07	a	
29					.05		.03	.30		1 60	a	.01	
30	n		n	.04					a	a	.04		
31										.07			
Sum	5.40	1.72	0.34	1.34	3.43	5.72	3.68	8.40	3.01	18.84	10.98	2,85	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1863

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		.37	.03	.05		f	f	1.67		.64			
2		.02	.01	.68								.35	
3		f .06		.20	f		.04		.14	.14	b	b 1.20	
4		.09		f			.57	.24		b	1.54	.01	
5	f	.06	f .02	.03				.80	b .15	.02	.57		
6	.01	.30		.04		.08	.37	b .10			.29		
7		.02				.04	b .04	.07	.02	.65	.30		
8			.02	.01		b	.10			.05	.30		
9	.11	.43				.46	.16	.05	.02		.29	.14	
10		.05	.10	.12	b .71			.20	.05	.06		n .06	
11		b	.09	b .03	.11		.12	.03	.16		n	.08	
12	b		b .05			.05	.10	.03		n	.08		
13				.06		.11		.05	n				
14		.11		.11		.15	.20	n		.07			
15	.02	.65		.08			n 1.35	.04	.24		1.80	.18	
16	.20	.03		.12		n	.04		.36	.31	.27	.07	
17		.05			n .10			.15	1.50		.10	a .05	
18		n .02		n .08	.02			.15		.45	a	.12	
19	n		n		.14				.04	a .04	.58		
20		.08		.02	.02	.08			a .17		.45		
21	.04	.08		.38		.23			.17	.02	.05	.04	
22	.05	.06		.06			.45	a .02	.05	.03	.42	.50	
23	.09	.09			.03	.04	a .11		1.11			.20	
24	.07	.04				a		1.07				.04	
25	.09	a .33		.03	a		.32			.08	f .04	f	
26	a	.65		a .10			.06	.25	.33	f	.17	.05	
27	.09	.50	a				.04	.20	.48	f		.12	
28	.11	.11						.03	f .40	.08	.10		
29	.09		.29					.11	.40		.12		
30	.05		.02				f .02			.02	.47		
31	.02		.25				.05						
Sum	0.86	4 13	1.19	2.20	1.13	1.66	4.20	5.99	4.66	2.68	7.84	3.21	

January 1st, to December 31st, 1864.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1	.05		b					.03	n	.05	.14	.02	
2	.40	.18					.01	n		.35	.42	.20	
3	.44	.07				.09	.33	.84		.12	.02		
4	.30					n .04	n		.12		.30		
5	.20				.18	.03			.66	1.45	.38	.02	
6	.14			n	n		.11				a .01	a .07	
7		n .05		.03			.54		.02		.02	.10	
8	.05	.04	n				.09			a	4.16	.05	
9	n .03						.02		a .10	.72	.66	.07	
10	.04		.06				.06	a .79		.03	.30	.30	
11	.03			.21			.18		.01			.30	
12		.03				a .06	a	.22	1.54	.03	.28	.45	
13	.28	.07			a	.03	.46		.33		f	f .27	
14	.10	a		a	1.20	.02		.21	1.75	4 55		.04	
15	a .08	.05	a		1.25			.10	f .40	f	.01		
16							.17	.11	.43		.15	.30	
17	.12						.50	f 1.30	.46	.61	1.24	.20	
18	.16	.20	.20		.06	.22		.32	.46	.05	.02	.01	
19	.05				.12	f .04	f .48	.06	.53	.02	.03		
20	.12	.17			.04	.04	.52	.03	.24	.39	.01	.30	
21	.28	.14			f .01	.02	.07			.90	b .43	b .38	
22		f .32		f			1.22	.03	b .22	b 1.45	.21	.03	
23	f		f			.03	.06	.64	1.45	.15	.26	.03	
24		.05					1.31	b .13	1.23	.56	2.41		
25		.09					b .75	.56	.06				
26	.03	.08				b	.06	2.20		.10			
27	.12					.54		1.14	.34	.82		n	
28		.06			b .03	.03	.03		.32	.20	n		
29	.05	.02		b	.03		.10				.66	.02	
30			b	.05	.01		.04		n	n		.16	
31	b							.21				.25	
Sum	3.07	1.62	0.26	0.29	2.93	1.19	7.11	8.92	10.47	12.55	12.12	3.57	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1865.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug	Sept.	Oct.	Nov.	Dec	Total
1	.03	.25		.08		a .19	a	.53			1.10	.10	
2		a			a		.36	.17	.03	.02	.03	f .16	
3		.05	.07	a		.90	.88	.18	.31	3.85	f	.14	
4	a .10	.04	a			.91	.55	.18	.11	f .15	.06		
5	1.10			.01			.15	.75	f .24	.02	.03		
6				.02	.05			.04		.09	3.25		
7		.05	.01		.07	.30	.43	f .05	.08	1.40			
8		.14		.50	.15	.10	f .08		.30		.01		
9				.29	1.42	f	.03	.02		.55			
10		f		.15	f .15			.53	.03		b	b	
11	f	.07		f	.26	.02		.23	.45	b .13			
12			f		.26		.29	.27	b	.56			
13			.03		2.45	1.20	.01	b .41	.18	.35		.05	
14	.03	.01			.08	.58	.14	.50				.39	
15	.56	.02		.10		.15	b .70	.04				.17	
16			.50		.70	b 1.58	.17	1.91				.11	
17		.04	.08	.05	1.25	.42	.04	.01				.13	
18	.16	b	.01	b .07	b .02	.48	.04	.03			n	n	
19	.03			.30		.15	.80	.04	n .88	n .20	.16	.43	
20	b .03		b			.54	.01	.03		.96	.04	.39	
21	.06					.05		n .75		.82	.38	1.65	
22	.05	.70			.02	.01	n .06	.35			.41	.04	
23			.01	.13	.12	n .03	.12	.09		.21			
24			.39	.04	n		.17	.36		.20			
25		n	.22	n .17			.38	.03		.20	.05	a .23	
26				.04	.04	.09	.50	.45	.37	.03	a		
27	n	.07	n	.11		.68	.04	.32		a .03			
28				.02	.29			.07	a .02	.21			
29					.05	.17		a	.28	.50		.52	
30	.77		.05		.10	.53	a	1.03	.05	3.25		1.41	
31	.02				.29		.10	.37		2.69		0.28	
Sum	2.94	1.44	1.37	2.08	7.77	9.08	6.05	9.80	3.33	16.42	5.52	6.20	

January 1st, to December 31st, 1866.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	f .21		f				.03	.03	.79	.06		.54	
2	.16	.03				.11	.70	b	.29	.14	.14	.91	
3	.20					.11	.07	b .38	.45	.14	.30	.39	
4			.04				.50	.04	.13	.15	.30	.95	
5		.04		.11		.03	b .01	.11	.01	.77		.10	
6	.03	.14			.03	b	.29	.04		.01		.09	
7		b			b .67			.01	2.30	.26	n	n .24	
8	b .09	1.00		b			.21	.03	.05	n .31	.06	.04	
9		.26	b				.41	.03	n .03				
10	.03	.11				.05	.05	n .76	.07		.20	.49	
11	.07	.10			.01	.02	.12	1.45		.60	.01	.76	
12		.30	.43			n	n 2.40	.43		.10	.04		
13		.34					.10	.01			1.84	.75	
14	.09	.01	.21		n		.30		.04			.15	
15	.39	n .02	.30	n .11	.30				.01		a .02	a .12	
16	n .03	.10	n	.37	1.03	.01	.33	.17	.03	a	.06	.08	
17	.54						.03	.07	a .02		.06	.19	
18					.13			a .05	.15	.18		.03	
19	.04		.07	.02		a .08	a .41	.01	.06	.82	.01		
20	.03	.01	.06	.13			.55	.43		.66			
21	.04	.02	.07	a .01	a		.01	1.25	.31		.10	f	
22	.38	a .02			.05		.16	.73	.01	.11	f .40		
23	a	.07	a .03	.18				.39		.06	.71		
24	.02				.05	.25	.01	.30	f	f .35	.01		
25			.04			.25	.14	2.10	.64				
26	.09		.06			.23	.06	f		.17			
27					.01	f	f .01	.49		.05			
28					.21						.07	b	
29			.01	f	f	.08			.15		b .63	.50	
30	f		.19	.05		1.55	.18	.55	.08	b	.31	.11	
31			f				.07		b	.40			
Sum	2.44	2.57	1.51	0.98	2.49	2.77	7.15	9.86	4.88	5.80	5.11	6.44	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1867.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1			.01	.02		.13	n .12	.21		.01		.02	
2	.40	.12	.17	.13	.43	n .18	.03	.11		.09		.10	
3	.16		.03	.05	.07	.05	.16	.18				1.67	
4	.03	n		n .10	n .22			.21	.06	.04	a .65	a .08	
5			.02	.10	.21	.08	.04	.03	.67	a .23	.01	.07	
6	n		n .03	.22	.01	.44	.14	.83	a .01	2.62			
7	.02			.20		.77	1.55	a .51	.50	.79			
8	.20			.03	.06	.67	a	.01	.45	.01		.93	
9						a	.12		.21	.12	.68	.09	
10		.08	.02	.04	a		.41	.02	.04	.48	.03	.05	
11	.03	.02		a		.03		.45		1.00		f .01	
12		a				.09	1.21		.17	.09	f .36		
13	a .08	.07	a			.53	2.01		.46	f	.03		
14	.16	1.20	.01	.01		.03		.13	f 1.04	.32	.97		
15	.01	.79		.08			.06	f .01	.01	2.90	.25		
16		.78	.01	.35		.05	f .12	.06	.27				
17		.01		.54	.10	f .10	.07		.06	.06		.02	
18		f .32	.07		f .03	.01	.41	.01		1.25	b	b .03	
19		.01		f .21		.06	.07	3.10	.80			.10	
20	f		f		.07	.10		.11	.01	b .16			
21	.20				.13				b .64		.08	.05	
22	.36		.14			1.94	.14	b .08	.13	.01		.34	
23	.29				.16	.01	.11		1.40			.06	
24	.01	.30				.15	b .07		1.68				
25	.38					b 1.69	.08	.59	.56			n .03	
26		.05			b .05	.67	.67	1.21	.15		n	.01	
27	b .01		.01	b .02	.01			.82	.36	n .25	.30	.06	
28	.01	b .07	b			1.20			n .04		.14	.02	
29			.01		.01	.48		n .06			.05		
30	.35				.15	1.17	.01	1.22				.03	
31	.43		.09		.09		n .28	1.24				.11	
Sum	3.13	3.82	0.62	2.10	1.80	10.63	7.88	11.20	9.72	10.43	3.55	3.88	

January 1st, to December 31st, 1868.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		a .17	a			.21	.01	.04	f 3.00	f			
2	a .13	.01				.01			.56	.18			
3	.02	.01					f .04			1.10	.04	.11	
4	.03			.05		.04	f	.03	.04				
5	.61			.01		f			.03		.37		
6		.13		.01	f		.22			.22	.10	b	
7		.01		f	.03		.03		.06	.10	b .20	.02	
8		f .11	f	.07	.08	.10	.05	.16	1.17	1.35	.02		
9	f	.16	.01	.03	.03	.04		.01	b	b	.13		
10	.10					.50	4.77	.13			1.75		
11	.14		.01				.06	b .03			.01		
12		.02					b .01				.01		
13	.01	.03	.31	.01	1.29	b	.04	.93			.01	n .22	
14	.18	.16		b	b	.05	1.24	.15		.04	n .03	.02	
15	.25	b	b				.01	.17	06	n .15			
16	.12		.03					.02	n	.09		.12	
17	b			.06			.07			.08		.04	
18	.07		.02	.01		.07		n .09	.07	.06			
19	.01			.13			n .10			.31			
20	.01					n .04	.30	.03	.15		.05	.20	
21	.17					.42			.64	.01		a .30	
22	.08	.19	.01	n .19	n	.02				.08	a		
23		n	.04		.04	.14	.20	.03	a .27	a .10			
24	n .05	.01	n .20	.15	.03	.17		a		.18		.02	
25						.17		.08	.21	.27		.04	
26						.01	a .01	.02	.22	.76			
27	.03		.02	.05		a .09	.06	.37	.72	.12			
28	.12				a	.11	.20		.02	.41	.01		
29	.13		.12	a		.63	.04	1.60	.31		f	f	
30	.12		.07		.04		.17	.01	.87			.01	
31	.71		a				.01			f		2.50	
Sum	3.09	0.96	0.89	0.77	1.54	2.82	7.60	3.94	8.40	5.61	2.73	3.60	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1869.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1		.10	.01	.28	.02	.09		.31	3.07	1.30	.01	2.45	
2		.52	.63		.03	b 1.20	b 1.05		.27	1.20			
3	.04	b .11	.01	b	b .04	.03	.08	.06			n	n	
4	.02	.11				.16	.06				.29		
5	b .03		b			.75		.24		n .22	.10		
6	.26					.02			n				
7	.07		.05		.19	.21		n					
8							.04				.01	.75	
9	.05				.09	.14	n .49	.03	.17			.34	
10			.01			n .09	.03	1.66	.02			a	
11	.06	n	.22		n	.03	.63	1.90		.18	a .01	1.23	
12	n			n	.01	.07	.11	.08	a	a .47			
13			n	.02		.02					.11	.15	
14		.17	.06			.37	.01	a .03	.07	2.60	.05	.29	
15			.04		.16	.09						.03	
16						.02	a .20			.04		.01	
17	.27					a .01			.01	.30	1.73		
18	.07			.04	a .04			.07		.01	.12	f	
19	.14	a		a	.06	.12	.01	.03			f .01	.03	
20	.06	.01			.02				f 1.45	f	.02	.03	
21	a .01		a		.24	.01				.84			
22	.01	.09		.02			.19	f .01	.04	.43		.08	
23			.03		.05	.01	f .32	.35	.22	.18	1.20		
24		.03				f		1.20		.01	.03		
25	.06	.02		.04	f .46	.11		.05	.40	.11	1.20		
26		f .01	.01	f 1.55	.19	.04	.10	.39		.35	b	b .02	
27	.15		f .02	.67		.06			4.56	.20		.37	
28	f .15				.08	.04			b	b 4.10		.02	
29					.16	.01	.26			.01	.01	.19	
30	.02				.20		.01	b .11		.03	.05	.01	
31					.19		b .01						
Sum	1.45	1.17	1.09	2.62	2.27	3.70	2.60	6.52	10.28	12.58	4.95	6.00	

January 1st, to December 31st, 1870.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1	.25	.03		n			.01		.12	a		.45	
2	n		n			.87			a 1.50	.69	.01	.05	
3	.14						.05	.01			.04		
4	.17	.01		.02	.22		.68	a .34		.02	.49		
5	.05	.23						.35	.88	.02		.13	
6						a .09	a .01	.02	2.30			.10	
7			.01			.07		.02		1.81		.01	
8	.05	a .10	.15		a	.14	.01	.24	.17		f	f	
9	a .01			a .04		.16	.07	.05	f	f .71	.45		
10	1.30	.02	a	.01		.05	1.61	.83					
11	.30		.02				.02	f				.02	
12	.39						f				.45	.32	
13	.40					f .14	.06	.25					
14	.01	.37		.19	1.20	1.58	.25	.32		.31	.09	.06	
15	.60		.09	f	f	.04	.26	.13	.11	.12		b .04	
16		f .09			.17	.27	.68			.70	b .21		
17	f .25	.01	f .04		.35		.15		.55	b .66			
18	.05	.03	.01	.18		.01		1.80	b	.60			
19	.15	.05						b .19	.15	.45		.01	
20		.16		.01	.10	b	b .16		.09	.26		.10	
21	.03	.05		.06	.31	.12			.05	.39	.12	.25	
22		b		b	b .01	.10		.70		.13	.12	n .18	
23	.11	.03			.16	.90	.19			3.00	n .27	.23	
24	b		b		.09	9.00	.28	.14		n 1.30	.59		
25	.26			.01	.07	.02	.18	3.32	n		.95		
26	.11		.01			.06	.01	n	.06		1.05		
27	.13					.01			.13		.54		
28	.01				n	.06	n		.03	.03	.10		
29	.01				1.49	.10	.05	.28	.04		a .03	a .72	
30				n	n .23		.30		.01	.08	.25	.15	
31	n .02							.05		a 1.64		.74	
Sum	4.78	1.18	0.53	0.52	4.50	13.59	5.03	9.04	6.19	12.92	5.76	3.56	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1871.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1	.21	.67	.01			.17	.02		.36				
2		.03			.01		f .99	.20			.04		
3		.05		.01	.03	f .06	.05	.01	.09		.30	.06	
4		.01	.02	.07	f		.18	.84				.40	
5	.01	f		f	.09		.07	.18			b	b	
6	f					.01	.09		b	b .02			
7			f	.01		.16	.26	.13		.17	1.28	1.11	
8						.20		b .12			.19		
9						.39	b	3.15	.05		.20	.16	
10		.11	.51			b			.10	.02	.05		
11	.15	.05			b		.02	.07	.72	.64	1.12	.85	
12	.49	b .06		b		.03	.02		.67	.22	n .03	n .24	
13	.03	.04	b			.16		1.54	1.20	.16	.24		
14	b .50						.20	.31	n	n .48		.01	
15	.19	.05					.20	.05		.05			
16	.60	.10	.09			.12		n	.33	.68	.03		
17	.20	.09					n			.50		.05	
18		.03	.71			n .11		.03	.15	.06		a .04	
19	.05	n	.01	n	n	.29	.17	.03	.40	.03	a .03		
20	.03					.02	.01	.17	.10	a .09	.01	.09	
21	n .40	.01	n				.08	.10	a	.01	.15	.20	
22	.08			.05		.16					.08	21	
23	.02	.09				.01		a .09		.83			
24	.12	.05	.35		.78	.20		.05		.15	.16		
25	.04	.01	.05		.02	a	a	.11		.21	.02		
26	.69		.02		.02	.11	.02	.03	.11		.24	f	
27	.05	a		a	a		.65	1.47			f		
28	a .32	.06			.35	.01	.02		f .07	f			
29			a					.41	.17			.01	
30	.11					.15		f .45	.17	.18	.38		
31	.05				.03		f .01	.21		.03			
Sum	4.34	1.51	1.77	0.14	1.33	2.36	3.09	9.60	4.81	4.53	4.53	3.43	

January 1st, to December 31st, 1872.

Days.	Jan.	Feb.	Mar	Apl.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1				b	.02	.09					n .05		
2		b	b					.02		n	.15	.05	
3	b							.14	n	.32		.32	
4	.16	.62					.27	n	.06	.10		.02	
5	.04	.18			.05	.01	n				.73	.08	
6	.11	.32				n .35	.18		.03	.11	.40		
7		.04			n .35	.24			.04			a .02	
8		.07		n			.07	.42	.39	.51	a .14		
9		n	n				.16		2.08	a		.05	
10	n .36	.70				.01		.01	a	.27	.63		
11		.02							.01	.68	.25		
12	.05	.01		.02		.01		a .30	.01	.03	1.50		
13		1.05	.05	.01			a	.09			1.10	.01	
14		.15			.27	a .14		.09			.14	f	
15			.05	a	a .02			.04		.15	f		
16		a					.03	.24	.01	f			
17	a		a .03			.32		.12	f	.01	.05		
18	.18						.38	f .16	.07		.40		
19	.02		.02			.05	.11	.08			1.74	.03	
20	.02		.07			.06	f .05		.02		.14		
21	.02			.07	f	1.60		.03	.07		.05	.31	
22			.17		f	.05		.13	.02		.05	.04	
23	.05		.22	f						b	.15	b .14	
24		f	.15						b	b	.36	.05	
25	f		f .01					b	.20	.35	.10	.26	
26			.01		.37	1.20		.05	.01	1.05	.15	.16	
27					.05	b	b .01	.05	.16		.17	.11	
28	.03					.10			.07		.01	.16	
29					b			.05				.41	
30				b	.47					.20	n	n 2.63	
31					.23		.19	.01		.13		.13	
Sum	1.04	3.16	0.78	0.10	1.88	4.23	1.45	2.03	3.25	3.91	8.46	4.98	

RAINFALL AT "HUSBAND'S," BARBADOES.

January 1st, to December 31st, 1873.

Days.	Jan.	Feb.	Mar.	Apl.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1					.72		.11 a				.61		
2	.01	.01		.03	.06		a		.05	1.20	.65		
3	.05	.01				a .03	.03	1.26					
4	.12	a .31		a .07	a			.52	.01	.62	f	f .07	
5	a .01	.03					.26		.06	.59	.08	.06	
6	.71	.09	a .07				2.73		f	f		.54	
7	.11	.10	.15			.02		.91				.25	
8	.05	.05					.10	f	.05	.54		.14	
9	.80		.03				.15		1.28			.12	
10	.09					f .05	f	.68	3.09	.20		.04	
11				.13	.06			.75	4.80	.27		b	
12		f		f 1.00	f	.05	.07			1.20	b	.04	
13	f	.54					.22		b	b			
14	.06	.16	f								.05		
15	.14					.05		b	.18	6.30			
16		.02			.14	.05	.15	.02	1.11			.01	
17	.01					b	b .50	.08	.02			.37	
18	.11		.03				.11		.03				
19	.16		.02		b .07	.15	.03		.07		.10	n .06	
20		b		b					.17	.09	n		
21	b		b					.11	n .03	n			
22						.27	.08	.46	2.20	.13	.02	.05	
23	.73			.01		.04	.50	n .32		.76			
24	.03					n	.14		.02	.33			
25	.04		.01		.20		n	.11		.21		.11	
26	.20			n	n .07			.30		.23	.10	a .06	
27	.03	n	.06		.25		.15				a .03		
28	n		n		.25			.01		.28			
29						.08		.10	a .05	a .02	.03	.17	
30					.06	.01		1.20		.24		.01	
31	.10						a .20		.13	1.08		.05	
Sum	3.55	1.32	0.37	1.24	1.88	0.08	5.41	7.03	13.35	14.29	1.67	2.15	