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1947-1948 REPORT ON THE 27.0074-DAY CYCLE IN WASHINGTON PRECIPITATION

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In Smithsonian Miscellaneous Collections [1] I have set forth an apparent cycle of precipitation at Washington, and the outcome from year to year of yearly predictions based thereon. In 1947, for the fourteenth consecutive year, the average precipitation for the predicted favorable days has exceeded the average precipitation on all other days of the year. The results for 1947 precipitation are given in table 1.

TABLE 1.—*Statistics of Washington precipitation, 1947*

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
referred" days ..	0.171	0.100	0.030	0.128	0.136	0.284	0.084	0.035	0.150	0.000	0.216	0.058	0.1166
her days	0.072	0.023	0.048	0.101	0.126	0.112	0.245	0.220	0.097	0.076	0.123	0.037	0.1058
tio	2.38	4.29	0.62	1.22	1.08	2.54	0.34	0.16	1.55	0.00	1.75	1.57	1.10
tal inches ...	3.72	1.65	1.24	3.37	4.05	5.76	5.35	3.68	3.70	1.31	5.09	1.47	40.39
rmal inches ..	3.55	3.27	3.75	3.27	3.70	4.13	4.71	4.01	3.24	2.84	2.37	3.32	42.16
rcent normal .	105	50	33	103	109	139	114	92	114	46	215	44	96

Lines 1 and 2 give the average precipitation in inches per day for "preferred" and all other days. Line 3 gives the ratio: $\dfrac{\text{preferred}}{\text{other}}$.
Lines 4 and 5 give the total precipitation and normal precipitation in inches, and line 6 the percentage of observed to normal for the months and year.

"Preferred" days had a higher average precipitation than all other days in the months January, February, April, May, June, September, November, and December, and also for the year 1947 as a whole. Other days had a higher average precipitation than "preferred" days in the months March, July, August, and October. Of these four exceptional months, March and October had very low rainfall. The average ratio, "perferred"/all other, of precipitation per day for 14 consecutive years has exceeded unity. The expectation is 1.42. The value for 1947 is 1.10, and for the 14 years it is 1.47.

The following table 2 gives the dates for 1948 when the average daily precipitation is expected to exceed the average for all other days. In the first column are given in Roman numerals the day numbers

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[1] See Smithsonian Misc. Coll., vol. 104, Nos. 3 and 5, 1944; and vol. 107, No. 3, 1947.

within the 27 days of the cycle when higher precipitation is expected. The remainder of the table gives the actual dates in the different months which correspond to these Roman numerals, in other words the "preferred" days for the year 1948. These "preferred" days should give, on the average, higher precipitation than all other days.

TABLE 2.—*Predicted dates when average precipitation should exceed average precipitation for all other dates, Washington, 1948*

"Preferred" cycle places	Jan.	Feb.	Mar.	Apr.	May	June
I	12	8	6	2, 29	26	22
II	13	9	7	3, 30	27	23
III	14	10	8	4	1, 28	24
IV	15	11	9	5	2, 29	25
V	16	12	10	6	3, 30	26
XII	23	19	17	13	10	6
XIII	24	20	18	14	11	7
XV	26	22	20	16	13	9
XVII	.... 1, 28	24	22	18	15	11
XVIII	.... 2, 29	25	23	19	16	12
XXII	 6	2, 29	27	23	20	16
XXVI	10	6	4, 31	27	24	20
XXVIII	11	7	5	1, 28	25	21

"Preferred" cycle places	July	Aug.	Sept.	Oct.	Nov.	Dec.
I	19	15	11	8	4	1, 28
II	20	16	12	9	5	2, 29
III	21	17	13	10	6	3, 30
IV	22	18	14	11	7	4, 31
V	23	19	15	12	8	5
XII	.... 3, 30	26	22	19	15	12
XIII	.... 4, 31	27	23	20	16	13
XV	 6	2, 29	25	22	18	15
XVII	 8	4, 31	27	24	20	17
XVIII	 9	5	1, 28	25	21	18
XXII	13	9	5	2, 29	25	21
XXVI	17	13	9	6	2, 29	26
XXVII	18	14	10	7	3, 30	27

The tabulation on which the cycle of 27.0074 days is based began January 1, 1924. In the 24 years, 1924 to 1947, there were 8,766 days. To complete 325 cycles of 27.0074 days requires 8,777.4 days. Hence 11 days of January 1948 are required additional to the 24 years ending December 31, 1947. Thus I begin table 2 which follows with January 12, 1948, corresponding to Roman numeral I.

It should be emphasized that this prediction relates only to Washington, D. C.[2]

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[2] This paper was finished on January 16, 1948.