

SMITHSONIAN MISCELLANEOUS COLLECTIONS
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Roebbling Fund

1946-1947 REPORT ON THE
27.0074-DAY CYCLE IN WASHINGTON
PRECIPITATION

BY

C. G. ABBOT

Research Associate, Smithsonian Institution



(PUBLICATION 3892)

CITY OF WASHINGTON
PUBLISHED BY THE SMITHSONIAN INSTITUTION
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In Smithsonian Miscellaneous Collections volume 104, No. 21, I reported on this cycle, and listed dates of 1946 when it was expected that greater average precipitation would occur than on other dates.

The following tabulation shows how the matter turned out. I give average precipitation per day on "preferred" and other days.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
"Preferred" ..	0.027	0.198	0.031	0.017	0.298	0.0023	0.186	0.169	0.156	0.168	0.074	0.025	0.113
Other	0.060	0.018	0.076	0.113	0.132	0.139	0.072	0.103	0.107	0.008	0.0012	0.114	0.0777
Ratio	0.45	11.0	0.41	0.15	2.26	0.016	2.58	1.64	1.46	21.	60.	0.22	1.45
Total, inches ..	1.54	2.84	1.84	1.88	6.74	2.38	3.82	4.18	3.95	2.50	1.05	2.02	34.74
Normal, inches.	3.55	3.27	3.76	3.27	3.70	4.13	4.71	4.01	3.24	2.84	2.37	3.32	42.16
Percent, normal.	44	87	49	58	182	58	81	104	122	88	44	61	82

"Preferred" days had higher average precipitation than other days in the months of February, May, July, August, September, October, and November. The contrary happened in January, March, April, June, and December. Of these unfavorable months all were exceptionally dry. But November, also very dry, turned out favorably.

For the complete year 1946, the ratio of average daily precipitations, "preferred" to other days, is 1.45. It is the thirteenth consecutive year in which this ratio has exceeded unity. The mathematical expectation for its value is 1.42.¹ The average ratio for 13 years is 1.50.

The following table gives the dates for 1947 when the average daily precipitation is expected to exceed that for all other days. In the first column are given in Roman numerals the date numbers within the 27 days of the cycle when higher average precipitation is expected. The remainder of the table gives the actual dates in the different months which correspond to these Roman numerals. These "preferred" dates should, on the average, give higher precipitation than other dates.

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

¹ See my original paper, Smithsonian Misc. Coll., vol. 104, No. 3, 1944. Also see vol. 104, No. 5, pp. 37-42, 1944.

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

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

² This paper was ready on January 16, but unavoidable delays occurred in the publication of it. In the meantime, reports for January and February, 1947, indicate that these months give a favorable ratio of precipitation for "preferred" days: