

SMITHSONIAN MISCELLANEOUS COLLECTIONS  
VOLUME 122, NUMBER 13

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**Roebling Fund**

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WASHINGTON, D. C., PRECIPITATION  
OF 1953 AND 1954

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(PUBLICATION 4170)

CITY OF WASHINGTON  
PUBLISHED BY THE SMITHSONIAN INSTITUTION  
APRIL 20, 1954

The Lord Baltimore Press  
BALTIMORE, MD., U. S. A.

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# WASHINGTON, D. C., PRECIPITATION OF 1953 AND 1954

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This is the tenth year of these publications regarding precipitation on individual days at Washington, D. C. The distribution of precipitation at Washington in 1952 and 1953 was very different from that of averages which appeared representative of 18 years preceding 1952.

In the year 1953 only the months January, April, September, October, and December followed the distribution of precipitation, as regards "preferred" days, that prevailed in the majority of months for all the 18 years preceding 1952. For the year 1953, the average precipitation falling on "preferred" days was but 75 percent of the average precipitation on all other days. During the 18 years preceding 1952, that ratio averaged 146 percent, as against 142 percent expected. It is true, however, that if the months of March and May were omitted altogether from 1953 the ratio would be above unity, at about 110 percent. In March it rained 3.42 inches from the 24th to the 26th, and in May 5.49 inches from the 4th to the 6th. These floods upset those months.

Last year I published a chart purporting to show the distribution of Washington precipitation through the average 27-day cycle of 1952. In some way, which I cannot now trace, I got the phases of that graph completely wrong. I have now redrawn it (fig. 1, curve *b*) and also one to represent the distribution that occurred in 1953 (curve *c*). Along with them, I include a graph (curve *a*, heavy line) of the average distribution which prevailed from 1924 to 1941, when the basis for these forecasts was recorded. All three graphs are on the same scale of ordinates, representing the average inches of precipitation per day of the individual days of the 27-day cycle.

*It is surprising to see that in both 1952 and 1953 (graphs b and c) a high peak of precipitation occurs on the eleventh day of the cycle. No such feature occurs in the graph a representing the years 1924 to 1941. That this high peak occurs on the identical day of the cycle for*

1952 and 1953 is the strongest proof yet appearing of the veridity of the cycle, as an actual cosmic phenomenon. At the same time it shows that a remarkable change of conditions of some sort occurred after 1951, as compared with the years 1924 to 1951 inclusive. And yet a trifling decrease of the decimal .0074 would bring the highest peak of curve *a* on the *eleventh* day in 1952 and 1953, as actually found in curves *b* and *c*.

TABLE I.—*Washington precipitation 1954*

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

It is difficult to decide whether to cling to the old "preferred cycle days," based on the data of 1924 to 1941, or to use a new set based on consideration of the distribution of 1952 and 1953. Two reasons incline me to use the old basis this year. First: In 1953, as stated above, the precipitation came near giving good results on the old basis. So it may be that conditions have returned to the old normal. Indeed the high peak on the eleventh day of the cycle is but 0.6 as



FIG. 1.—Observed distribution of precipitation in Washington on cycles of 27.0074 days. *a*, January 1, 1924, to December 31, 1941. *b*, January 1 to December 31, 1952. *c*, January 1 to December 31, 1953.

high in 1953 as in 1952, which may indicate a gradual return toward normal. Second: Advices from E. Fraselle of Etterbeck, Brussels, Belgium, who has used the 27.0074-day cycle in Equatorial Africa and in Belgium, state that since 1949 there has been no failure or change of phase in the cycle.

So I give in the accompanying table the 175 dates when higher average precipitation in Washington may perhaps be expected in 1954 than the average precipitation of all other dates of 1954. The first column, in Roman figures, gives the "preferred days" of the 27-day cycle. The remaining columns give the actual dates in the 12 months of 1954 when these preferred cycle days recur, and when higher than average daily precipitation in Washington may be expected.

The basic tabulation, on which the table rests, began with January 1, 1924, and ended with December 1941. The "cycle" deduced from those records is of 27.0074 days, which corresponds nearly with the average period of the rotation of the sun.<sup>1</sup>

### TEMPERATURE AT WASHINGTON

In previous papers on Washington weather, I have shown that it has a regular period of 6.6485 days, and also of  $\frac{6.6485}{2}$  days. In previous years I have made predictions, based on these periods, when days would be warmer than the days immediately before and after. But the periods are so short that, with local and temporary atmospheric influences displacing phases of the periods frequently by one day, and sometimes by two days, such forecasts are of doubtful interest. I therefore discontinue them.

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<sup>1</sup> See A 27-day period in Washington precipitation, Smithsonian Misc. Coll., vol. 104, No. 3, 1944. (Publ. 3765.)