

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

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In cooperation with Maryland State Weather Service.

# CLIMATOLOGICAL DATA.

## MARYLAND AND DELAWARE SECTION.

JAMES H. SPENCER, Meteorologist and Section Director.

VOL. XXVIII. BALTIMORE, MD., JANUARY, 1923. No. 1.

### GENERAL SUMMARY.

January was characterized by mild weather, much cloudiness, and frequent precipitation. There was an absence of severe or prolonged cold weather. The monthly amount of sunshine, about 40 per cent, was nearly 10 per cent below normal.

The mean temperature of the month, 34.8°, or 2.2° above normal, is 4.5° higher than in January, 1922. Prevailing mild weather was interrupted by brief cold spells of moderate intensity on the 7th, 10-11th, 16-18th, 23d-24th, and 30th-31st. The 21st was a warm day, with maximum temperatures ranging between 50° and 54° in western Maryland to 68° at Cambridge. The coldest weather was experienced on the 17th and 18th, and minimum temperatures ranged from zero at Oakland to 22° at Crisfield.

The monthly precipitation averaged 4.18 inches, or 0.90 inch above normal. Precipitation was mostly in the form of rain and was unevenly distributed. Monthly amounts were between 5 and 6 inches in the Allegany Mountain region, central Delaware, southern Talbot, and northern Dorchester Counties. There were between 3 and 4 inches in Somerset County and over the area comprised by Anne Arundel, northern Prince Georges, Montgomery, Howard, Carroll, Frederick, Washington, and Allegany Counties, except extreme eastern Washington County where the total precipitation was between 2.5 and 3 inches. Over the remainder of the section the monthly precipitation was between 4 and 5 inches.

The snowfall of the month averaged 6.0 inches, or 1.7 inches below normal. Monthly snowfall averaged 15.5 inches in western Maryland, where it ranged from 24.0 inches in the northern Allegany highlands to 8.0 inches in the Blue Ridge Mountains; it averaged 6.3 inches in north-central Maryland and 2.5 inches in southern Maryland; on the Eastern Shore the monthly snowfall averaged 4.0 inches over the northern portion and only a "trace" over the southern portion. Snow fell in the northern-border counties on the 3d-4th, in western Maryland on the 5th, 8th, 9th, 10th, 15th, and 16th, in southern Maryland and the southern portion of north-central Maryland on the 22d, over the entire section with the exception of the southern portion of the Eastern Shore on the 24th, and over the northern portion of the section on the 28th; snow fell also in the Allegany Mountain region on the 1st, 6th, 7th, 12th, 22d, and 25th. Snowfalls were light, except on the 24th, when they were moderate in southern Baltimore County, the Piedmont Plateau, and western Maryland, except heavy on the eastern slope of the Allegany Mountains. Snow flurries occurred over the northern portion of the section to the eastward of the Blue Ridge Mountains on the 10th and 16th, and over the southern portion of the Eastern Shore on the 22d and 24th.

Winter grains were in fair to good condition, owing to the mild weather and frequent precipitation. Some heaving occurred in the northern counties, but no grains were winter-killed. Grains were snow-covered from the 3d to the 17th in the Allegany Mountain region and from the 24th to the 31st

in the northern-border counties. Stripping of tobacco made favorable progress, and some ice was cut during the first half of the third decade in the northern counties. The ground was well saturated at the close of the month.—*J. B., jr.*

### PRESSURE.

The monthly mean sea-level pressure at Washington, D. C., was 30.11 inches, and at Baltimore was 30.10 inches. The highest at Washington and at Baltimore was 30.85 inches on the 23d. The lowest at Washington was 29.53, and at Baltimore, 29.52 inches, both on the 9th.

### TEMPERATURE.

The monthly mean for the section, 34.8°, is 2.2° above the normal. The highest monthly mean, 39.4°, occurred at Crisfield, and the lowest, 28.6°, at Grantsville. The highest temperature recorded was 68° at Cambridge on the 21st, and the lowest, 0°, at Oakland on the 17th. The greatest local monthly range was 54° at Millsboro and Oakland, and the least, 37°, at Emmitsburg. The greatest daily range was 40° at Oakland on the 18th.

### PRECIPITATION.

The monthly average for the section, 4.18 inches, is 0.90 inch above normal. The greatest monthly amount was 6.14 inches at Grantsville, and the least, 2.49 inches, at Keedysville. The greatest amount in 24 hours was 2.19 inches at Cambridge on the 1st. The average snowfall for the section, 6.0 inches, is 1.7 inches below normal. The greatest monthly amount was 24.0 inches at Frostburg and Grantsville, and the least, a "trace", over the southern portion of the Eastern Shore. The average number of days with 0.01 inch or more of precipitation, 12, is 3 days above normal.

### WIND.

The prevailing direction of the wind was northwest. The total wind movement at Washington, D. C., was 6,052 miles; at Baltimore, 4,732 miles; and at Aberdeen, 5,237 miles. The maximum velocity at Washington, D. C., was 35 miles per hour from the northwest on the 1st and 12th; at Baltimore, 21 miles from the west on the 16th; and at Aberdeen, 31 miles from the northwest on the 1st.

### SUNSHINE AND CLOUDINESS.

At Washington, D. C., 38 per cent of the possible sunshine was recorded; at Baltimore, and at Aberdeen, 40 per cent. For the whole section the average number of clear days was 8; partly cloudy, 9; cloudy, 14.

### MISCELLANEOUS PHENOMENA (WITH DATES).

*Fogs, dense.*—Coastal plain, 2, 31.

*Sleet.*—North-central Maryland, 3, 7-8; Washington, D. C., 6; Harford County, 9; southern Baltimore County and Costen, 14; entire section, except western Maryland, 22, 24, 27-28.

*Thunder-storms.*—Somerset County and Seaford, 8; Millsboro and Public Landing, 20.

*Winds, high.*—1, 4, 9, 10, 12, 13, 15, 16, 17, 21, 25, 28.

### ERRATA.

*November, 1922.*—Page 44, Boyds, highest temperature and date, published 73 on 12, should be 71 on 3; Cambridge, date

(Continued on page 2.)

Climatological Data for January, 1923.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.					Precipitation, in inches.				Number of days.				Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall (unmelted).	With precip. 0.01 inch or more.	Clear.		Partly cloudy.	Cloudy.	Prevailing direction of wind.
<i>Maryland.</i>																				
Aberdeen	Harford	80	5	33.3		60	21	17	17	25	3.99		1.24	4.2	12	1	13	17	nw.	U. S. Army.
Annapolis	Anne Arundel	45	55	37.0	+2.8	64	21	19	17	33	3.88	+0.47	1.20	4.1	11	5	11	15	nw.	Joseph Stein.
Baltimore*		115	53	36.6	+2.6	64	21	20	17	25	4.14	+0.92	1.10	5.0	13	4	13	14	nw.	U. S. Weather Bureau.
Bellii	Prince Georges	151	5	34.2		65	21	12	18	33	3.71		1.10	3.5	10	7	12	12	nw.	Bureau Plant Industry.
Boys	Montgomery	424	4	34.6		61	21	15	17	29	3.08		0.75	5.5	9	9	10	12	w.	James L. Higgins.
Cambridge	Dorchester	25	26	39.1	+2.7	68	21	19	18	31	5.61	+2.10	2.19	T.	12	16	7	8	nw.	Robert L. Hamill.
Cecil	Cecil	85	5	34.6		60	21	15	18	27	4.85		1.40	5.2	11	4	8	19	nw.	Wm. F. Coale.
Cheltenham	Prince Georges	280	23	36.4	+2.2	65	21	15	18	34	4.15	+0.62	1.08	3.7	12	6	8	17	nw.	Geo. Hartnell.
Chesapeake City	Cecil	17	4								5.08		1.53	5.2	10	10	8	13	nw.	Harold Steele.
Cheswille	Washington	580	26	31.9	+1.3	51	21	14	17	27	2.71	-0.31	0.86	7.5	11	10	4	17	nw.	D. Paul Oswald.
Clear Spring	do	500	24					14	17		3.11	-0.22	0.74	9.1	12	11	4	16		E. G. Kinsell.
Coleman II	Kent	80	24	34.9	+1.7	61	21	17	17	24	3.95	+0.56	1.17	4.5	9	9	11	11	nw.	Walter B. Harris.
College Park	Prince Georges	170	37	35.7	+2.4	63	21	16	18	31	3.92	+0.74	1.07	3.5	11	8	9	14	nw.	Prof. Thos. H. White
Costen II	Somerset	21	2								3.15		0.62	T.	12	7	11	13	nw.	Edward McD. Moore.
Crisfield	do	5	5	39.4		63	21	22	17	27	3.29		0.72	T.	10	5	13	13	nw.	A. B. Cochrane, P. M.
Cumberland	Allegany	623	50	32.4	+1.4	58	21	12	12	35	3.52	+1.02	0.88	16.4	18	6	8	17	nw.	Harvey H. Weiss.
Darlington	Harford	300	33	32.7	+1.2	59	21	13	31	25	4.68	+1.34	1.20	5.5	9	8	10	18	w.	Chester Holloway.
Easton	Talbot	35	33	37.9	+2.5	62	21	18	18	29	4.92	+2.05	1.80	1.5	12	9	10	12	nw.	Clement E. Bray.
Emmitsburg	Frederick	720	56	32.4	+1.8	51	21	14	17	23	4.31	+0.99	1.65	7.7	8	11	12	8	w.	Mt. St. Mary's College.
Fallston II	Harford	450	54	33.0	+2.1	60	21	14	18	29	4.57	+0.88	1.15	6.7	10	4	17	10	nw.	Miss Dora Curtiss.
Ferry Landing II	Calvert	45	7	36.8		65	21	19	17	31	4.13		1.15	2.2	9	5	11	15	nw.	Thos. J. Bourne.
Frederick	Frederick	275	49	34.0	+1.9	60	21	17	17	25	3.59	+0.59	1.14	7.2	14	12	4	15	nw.	Chas. S. Birely.
Freeland	Baltimore	681	4	30.4		55	21	10	16	30	4.25		1.20	5.6	10	12	7	12	w.	Isaac Shaver.
Friendsville	Garrett	1,501	5	32.3		57	21	4	17	39	4.95		1.10	15.0	20	4	4	23	w.	Jasper Guard.
Frostburg	Allegany	1,929	22	30.2	+0.3	54	21	6	17	32	5.09	+1.41	1.23	24.0	11	10	13	8	nw.	J. D. Snyder.
Grantsville	Garrett	2,351	29	28.6	+1.6	53	21	2	17	36	6.14	+2.48	1.22	24.0	17	3	5	23	w.	J. B. Miller.
Great Falls II	Montgomery	200	32	35.3	+2.8	64	21	18	11	31	3.41	+0.34	1.08	4.8	12	4	15	12	w.	Chas. E. Sullivan.
Hancock	Washington	455	13	32.3	+2.7	53	19	10	11	29	3.26	+0.53	0.76	12.2	15	13	9	9	w.	Theodore P. Jenkins.
Keedysville	do	400	20	33.1	+1.1	53	21	15	11	24	2.49	-0.73	0.88	5.5	14	8	4	19	nw.	J. A. Miller.
La Plata	Charles	190	7	37.8		63	21	18	18	33	4.32		1.21	1.8	10	7	12	12	nw.	John P. Burdette.
Laurel	Prince Georges	320	24	34.6	+2.3	63	21	15	18	31	3.84	+0.45	1.10	4.3	11	10	4	17	w.	Evan G. Chaney.
Millington	Kent	27	26	35.5	+1.8	62	21	15	18	29	4.22	+0.71	1.33	4.0	11	9	8	14	w.	Henry L. Higman.
Oakland	Garrett	2,461	24	29.2	+1.1	54	21	0	17	40	5.49	+1.29	0.92	16.6	22	2	7	22	w.	R. E. Weber.
Princess Anne	Somerset	17	48	37.8	+0.8	66	21	17	18	34	3.54	+0.45	0.82	T.	9	9	12	10	nw.	James R. Stewart.
Public Landing II	Worcester	10	8	38.8		59	21	15	18	27	4.56		0.91	T.	16	5	15	11	nw.	Louis C. de Guibert.
Riderwood	Baltimore	370	4	31.8		62	21	14	17	34	4.95		1.13	5.9	11	7	12	12	w.	Thomas D. Burnett.
Ridgely	Caroline	57	2	37.0	+2.8	63	21	16	18	31	4.88	+1.90	1.90	1.7	10	9	5	17	nw.	Albert White.
Rock Hall	Kent	25	8	36.3		62	21	16	18	29	4.10		1.17	3.5	9	12	9	10	nw.	Charles Judefind, P. M.
Salisbury	Wicomico	23	18	38.7	+1.5	61	21	14	18	31	4.01	+0.46	1.66	T.	9	11	11	9	nw.	W. F. Allen.
Solomons	Calvert	20	32	39.0	+3.6	64	21	21	17	29	4.88	+2.12	1.51	0.7	18	2	7	22	nw.	Dr. W. H. Marsh.
State Sanatorium	Frederick	1,460	15	31.2	+1.4	52	21	11	17	23	3.37	-0.37	0.92	7.7	9	14	3	14	nw.	Dr. V. F. Cullen.
Takoma	Montgomery	320	25	34.3	+2.4	63	21	18	17	29	3.47	-0.15	1.15	3.5	12	5	8	18		L. M. Mooers.
Western Port	Allegany	1,000	30	33.2	+2.7	53	19	11	17	23	3.20	+0.72	0.30	14.0	10					Norris Bruce.
Westminster	Carroll	770	14	32.3	+1.5	57	21	15	17	21	3.91	+1.08	0.85	8.7	13	9	3	19	nw.	Prof. S. P. Caltrider.
Woodstock	Baltimore	415	53	34.4	+2.5	62	21	12	17	31	3.80	+0.42	1.15	6.6	10	10	3	18	nw.	Rev. Henry M. Brock, S.J.
<i>Dist. of Columbia.</i>																				
Washington**		112	53	36.8	+3.5	65	21	19	17	25	4.24	+0.87	1.34	3.1	12	5	8	18	nw.	U. S. Weather Bureau.
<i>Delaware.</i>																				
Delaware City	Newcastle	10	37	34.6	+3.2	60	21	16	18	26	4.03	+1.25	1.24	4.5	9	7	16	8	nw.	H. C. Price.
Dover	Kent	34	34	35.3	+0.8	65	21	14	18	32	5.13	+1.88	2.10	4.0	11	9	12	10	nw.	Arthur G. Livingston.
Milford	do	20	41	37.4	+1.8	62	21	15	18	31	5.62	+2.18	1.97	T.	10	8	15	8	nw.	Chas. J. Holzmuller.
Millsboro	Sussex	20	31	37.3	+2.3	67	21	13	18	33	4.35	+1.01	1.80	T.	9	9	12	10	nw.	Rev. Lewis W. Wells.
Seaford	do	40	32	37.8	+3.1	65	21	13	18	32	4.22	+0.88	1.50	T.	9	14	7	10	nw.	E. B. Brown.
Wilmington	Newcastle	86	30	32.5	-0.3	56	21	14	18	25	4.51	+1.16	1.14	5.0	10	11	3	17	nw.	Frank W. Pierson.
For Maryland and District of Columbia.				34.7	+2.4	68	21	0	17	40	4.12	+0.84	2.19	6.5	12	8	9	14	nw.	
For Delaware.				35.9	+1.8	67	21	13	18	33	4.64	+1.38	2.10	2.2	10	10	11	10	nw.	
For entire section				34.8	+2.2	68	21	0	17	40	4.18	+0.90	2.19	6.0	12	8	9	14	nw.	

The departures from normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.  
 Reference letters, "a", "b", "c", appearing in the table indicate number of days missing; for example, "b" represents two days, etc.  
 † Also on other dates. †† Received too late to be included in means and summaries.  
 ‡ Post-office addresses of these stations are as follows: Of Bell, Glendale; of Coleman, Worton; of Costen, Westover; of Fallston, Bagley; of Ferry Landing, Owings; of Great Falls, Bethesda; of Public Landing, Snow Hill.  
 T. Precipitation is less than 0.01 inch rain or melted snow. \* Custom House Building, Gay and Water Streets. \*\* Weather Bureau Building, 24th and M Streets.

(Continued from page 1.)

of lowest temperature, published 31, should be 30; Friendsville, mean temperature, published 46.5, should be 41.5; Woodstock, mean temperature and departure from normal, published 45.0 and +0.7, should be 45.5 and +1.2.

December, 1922.—Page 48, Dover and For Delaware, num-

ber of days with precipitation 0.01 inch or more, published 11 and 10, should be 12 and 11, respectively. Page 50, Takoma, maximum temperature 11th, published 36, should be 37; Millsboro, maximum temperature 14th, published 39, should be 40.

Daily Precipitation for January, 1923.

Table with columns for Stations, Watersheds, Day of month (1-31), and Total. Rows list various stations in Maryland and Delaware with their respective precipitation values for each day and a total for the month.

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation.

\*\*\* Regular Weather Bureau station; precipitation is for the 24-hour period, midnight to midnight. \* Precipitation is for 24-hour period, midnight to midnight.

|| Precipitation measured in the morning; amount then recorded is for the preceding 24 hours. \* Precipitation included in the next following measurement.

T, Trace, or less than 0.01 inch. Data in italics determined from surrounding stations.

COMPARATIVE DATA FOR MARYLAND AND DELAWARE FOR JANUARY.

Table comparing climatic data for Maryland and Delaware from 1895 to 1924. Columns include Year, Temperature (Mean, Departure from normal, Highest, Lowest, Average), Precipitation (Departure from normal, Greatest local, Least local, Greatest in 24 hours, Snowfall, Number of days with 0.01 inch or more), and similar metrics for the other region.

Daily Temperatures for January, 1923.

Table with columns for Stations, days 1-31, and Mean. Rows include Maryland (Aberdeen, Annapolis, Baltimore, etc.), District of Columbia (Washington), and Delaware (Delaware City, Dover, etc.). Each station entry shows maximum and minimum temperatures for each day.

\* 1, 2, 3, etc., indicate respectively 1, 2, 3, etc., days missing from the record. § Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs. Data in italics determined from surrounding stations.