U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR MARCH, 1899.

MARYLAND AND DELAWARE SECTION

OF THE

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

IN COOPERATION WITH THE

MARYLAND STATE WEATHER SERVICE.

(Prof. Wm. B. Clark, Director; Prof. Milton Whitney, Secretary and Treasurer.)

PREPARED UNDER DIRECTION OF

WILLIS L. MOORE,

CHIEF OF WEATHER BUREAU.

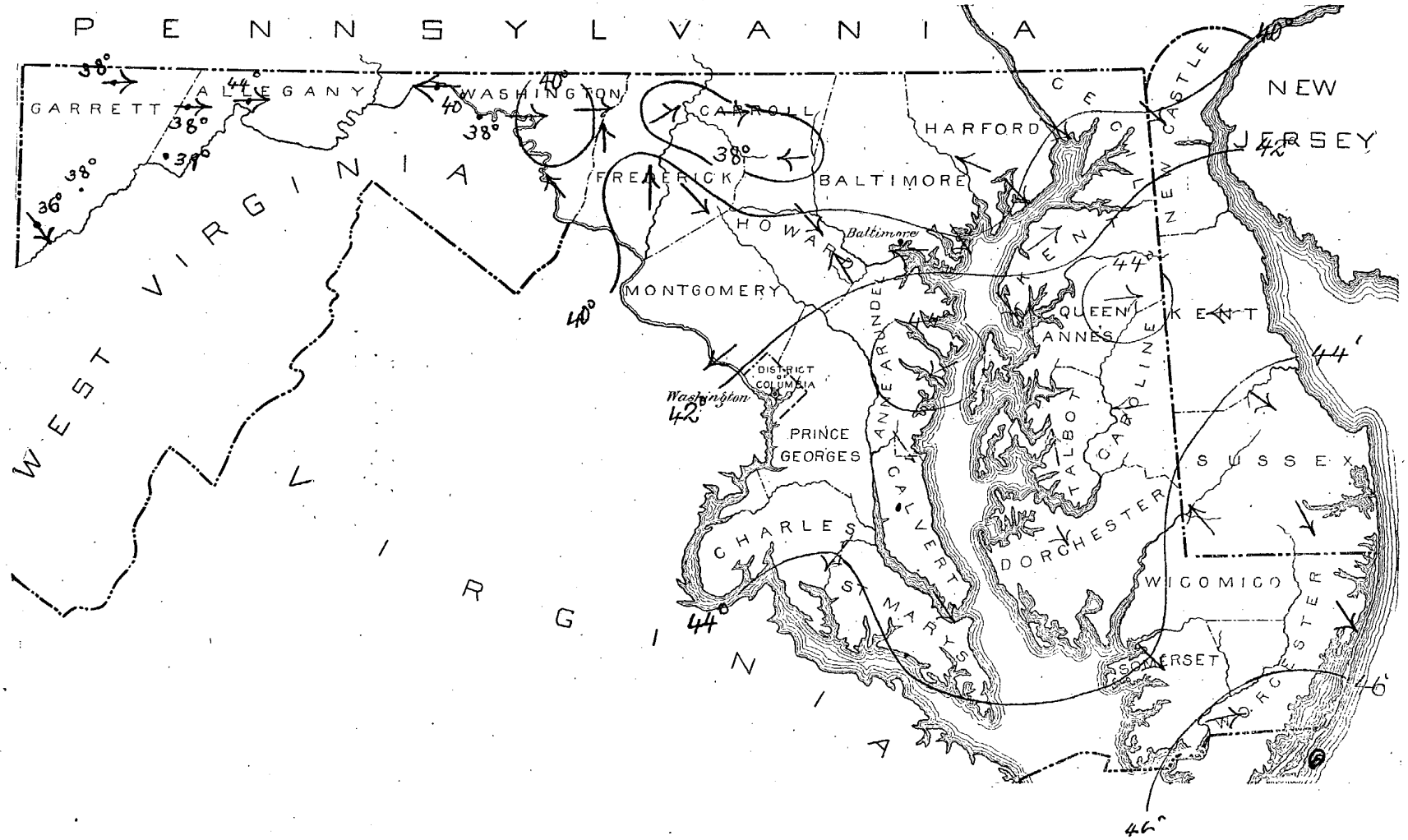
BY

F. J. WALZ,

SECTION DIRECTOR.

BALTIMORE, MD.:
WEATHER BUREAU OFFICE.
JOHNS HOPKINS UNIVERSITY.
1899.

MONTHLY MEAN ISOTHERMS AND PREVAILING WINDS, MARCH, 1899.



U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

CENTRAL OFFICE: WASHINGTON, D. C.

BALTIMORE, MD.

VOL. IV. BALTIMORE, MD. No. 3.

WEATHER BUREAU WORK AT BALTIMORE.

THE Baltimore Office began operations January 1, 1871, and was one among the first meteorological stations established by the U. S. Weather Service. It is a station of the first class, fully equipped with self-recording instruments for registering barometric pressure, wind velocity and direction, rainfall, sunshine, etc. It is also a local forecast station at which predictions are made and issued for the city and vicinity, and a distributing center for the dissemination of forecasts, storm warnings, cold wave and frost warnings, and other important weather information.

Baltimore is also a section center for climate and crop work, the gathering of information and the publishing of bulletins and summaries bearing upon climate and crops for the States of Maryland and Delaware. In the climate and crop work there are some seventy-five volunteer observers scattered through these two States, who report regularly to this office each month the record of daily temperatures, rainfall, and other weather data. There are also some one hundred and fifty correspondents, who report weekly, during the crop season, upon the growth and development of the various crops. A number of the correspondents also include rainfall reports for the week. * * *

WEATHER FORECASTING. In order to intelligently predict the coming weather for even a small section of the country, it is necessary to know the weather conditions that exist simultaneously over a large part of the country at the same time, especially over the sections to the west of the place for which the prediction is to be made, as the weather of a place depends upon the atmospheric conditions developed to the west of it.

To guide the forecaster at Baltimore in making predictions, telegraphic reports of weather elements are received at the station twice a day from about 110 stations scattered throughout the United States and Canada. These telegraphic reports are the results of simultaneous observations made at these various stations at 8 a. m. and 8 p. m., respectively. The information they give is: Pressure of the air for each station, reduced to a sea level and a standard temperature of 32°; temperature of the air; wet bulb temperature; the precipitation; wind movement and direction; clouds (the amount and direction); the maximum wind velocity and direction in the past twenty-four hours, and the time of beginning and ending of thunderstorms. These telegrams are all sent in cipher, for which purpose a condensed and comprehensive code has been arranged.

At 7.40 o'clock (75th meridian time) each morning and evening the observers at different stations begin taking their observations from accurately tested and standardized instruments, noting all the elementary conditions of the air, such as pressure, temperature, wind velocity and direction, rainfall, etc. By 8 o'clock the necessary mathematical corrections have been made, all observations reduced to the cipher, and each filed at the local telegraph office. During the next thirty or forty minutes these telegrams, with the right of way over all lines, are hurrying to their destinations, each station contributing its own observations and receiving in return, by systematic telegraphic circuits, such observations from other stations as it may require. As fast as the reports come over the wires, they are quickly delivered, and the cipher translated into figures and words of intelligible order.

The weather conditions given are then entered on a geographical map at the different places, respectively. The barometer, temperature, and other data, which are represented by figures, are written near the places so reporting; while by the use of symbols, with arrows to show the direction of the wind, the other weather elements, such as clear, cloudy, rain, wind direction, etc., are shown. Blue pencil lines are then drawn through points having the same atmospheric pressure, a separate line being drawn for each one-tenth of an inch of barometer, and are called isobars. Then lines connecting places having the same temperature are drawn in red for each ten degrees of thermometer. These lines are called isotherms. We now have a chart or picture showing the weather conditions throughout the country at the same instant of time.

On every map, after these systems of lines are drawn, we will find an area, as shown by the isobars, where the barometer is lower than anywhere else in the surrounding regions. This area is designated as a "Low." Likewise we will find an area or areas where the barometer is higher than anywhere else in the surrounding regions, which area is designated as a "High." In the great ocean of air that surrounds the earth, as in the ocean of water, there are constantly occurring waves and hollows—areas where the air is piled up and others where it is depressed. The hollows are the depressions which we call "Lows"; the crests of the waves, "Highs." The "Highs" are usually attended by fair and cool or cold weather. The "Lows," popularly known as storms, are usually preceded and accompanied by cloudiness, rain or snow, and more or less high winds; the influence of the disturbance often extends a distance of 500 to 600 miles from the center of the storm. The area of the storm disturbance may vary from 500 to 1,500 miles in diameter and maintains distinctive characteristics throughout its formation and movement. We may divide these areas into four quadrants, each of which shows distinctive features which are maintained as long as the identity of the storm lasts. These quadrants briefly described are as follows: The *northeast quadrant* is distinguished by great humidity, light winds, and cloud formation, especially in the southern portion, together with precipitation. The *southeast quadrant* contains the maximum of heat and moisture and is the origin of all severe local storms, especially the tornado. The *southwest quadrant* is marked by clearing weather, frequently with rain in the eastern portion, falling temperature and diminishing humidity. The *northwest quadrant* has the minimum of heat and moisture, an absence of clouds and brisk cold winds. From the nature then of storm formation, precipitation is confined to certain parts of the area of the "Lows"; the rain area extends to the south and east from 300 to 500 miles in advance of the storm center. In advance of the "Low" the winds are generally easterly or southerly, and bring higher temperature. When the center of a "Low" passes to the east of a place the wind at once shifts to the west or northwest, bringing lower temperature. The "Lows" are technically called cyclones on account of the spiral inward movement of the winds about them in the direction opposite to that in which the hands of a watch move. The "Highs" are called anticyclones on account of the wind flowing spirally outward from the center and in the direction the hands of a watch move. The formation, movement, and prevalence of these "Highs" and "Lows" across the United States practically control the current weather conditions and changes; and it is from charting

these daily and watching their movement, with a knowledge and study of the laws governing their formation, characteristics and movements, that weather forecasts are made.

The birthplace of nearly all of our storms is either in the Gulf Region, off the Pacific Coast or in the Far Northwest, and their final destination the Gulf of St. Lawrence.. Their rate of movement varies, the average drift eastward being at the rate of about 600 miles daily, and their periods average about three days each; that is, the time required for the storm condition to move across from the point from which it enters the United States to the point from which it leaves is about three days. "Lows" move faster than "Highs."

The high areas enter the United States from only two points. In the winter they usually originate in Alberta to the north of Montana, while in summer the larger number of "Highs" enter from the Pacific Ocean about the latitude of Oregon. The "Lows" have some nine places or districts of inception or entrance into the United States. The paths of both are from west to east, and the "Lows" all try sooner or later to leave the United States in the neighborhood of New England. The paths of both "Highs" and "Lows" usually follow well established tracks, and it is this fact, together with the more or less constant characteristics maintained by them, that is the basis of all predictions of future weather and weather changes.

* * *

FARMING OPERATIONS IN MARYLAND AND DELAWARE.

A wet and cloudy March has made the season very backward to date. Air temperatures have not been far from normal, but the soil has been continually damp, cold, and unfavorable to growth. Up to the close of the month very little ground had been broken. Timothy and clover sowing made fair progress, but no oats are in the ground yet. In the southern counties some peas and potatoes have been planted, and in the tobacco growing districts the beds have been prepared and some seeded. Wheat continues in poor condition in the saturated lowlands, and on high knobs where swept by the winter winds, but looks better on moderately elevated and well drained fields. Considerable wheat and old clover was thrown out by the frosts, and in many cases causing thin stands. Scarcely any peaches are expected, but present prospects point to half a crop of pears and probably a full crop of apples. Good yields of maple syrup have been secured in the western counties. All farm work is much behind.

* * *

CLIMATOLOGY OF THE MONTH.

ATMOSPHERIC PRESSURE—IN INCHES AND HUNDREDTHS.

Monthly mean at Washington, D. C., 29.99; at Baltimore, 29.96; average, 29.98; highest, 30.44 at Washington, D. C., on the 14th; lowest, 29.04 at Washington, D. C., on the 19th.

TEMPERATURE—IN DEGREES FAHRENHEIT.

The monthly mean (entire territory), 41.4, is 0.3 below the normal.

The highest monthly mean was 46.4, at Pocomoke City.

The lowest monthly mean was 34.9, at Grantsville.

The highest temperature recorded during the month was 77, at Hancock, on the 12th.

The lowest temperature recorded during the month was 1, at Sunnyside, on the 7th.

The greatest local monthly range was 67, at Deer Park and Sunnyside.

The least local monthly range was 35, at Annapolis.

The greatest daily range was 42, at Boettcherville, the 11th.

The least daily range was 1, at Cumberland, on the 3d, and at Wyoming, Del., on the 13th and 16th.

PRECIPITATION—IN INCHES AND HUNDREDTHS.

The monthly average (entire territory) 4.92, was 1.50 above the normal.

The greatest amount was 7.42, at Sunnyside.

The least amount was 2.44, at Boonsboro *b*.

The greatest amount in twenty-four hours was 2.02, at Bachman's Valley, on the 18th and 19th.

The average number of rainy days, 11.

WIND.

The prevailing direction was from the northwest.

The total movement was 5,040 miles, at Baltimore, and 7,328 miles, at Washington, D. C.

The maximum wind velocity was 40 miles per hour from the northwest, at Washington, D. C., on the 7th.

MISCELLANEOUS.

The following are dates on which various miscellaneous phenomena occurred:

Snow.—Annapolis, 6; Bachman's Valley, 7, 19, 25; Baltimore, 7, 19; Boetcherville, 6; Boonsboro, 7; Cambridge, 7; Charlotte Hall, 6; Chase, 7; Chestertown, 6, 7, 19; Chewsville, 7; Clear Spring, 7; Coleman, 7; Cumberland, 7; Deer Park, 8, 20, 29; Denton, 7; Easton, 7; Fallston, 7, 19, 25; Frederick, 7, 24; Frostburg, 7, 20, 29; Grantsville, 7, 8, 29; Great Falls, 7; Hagerstown, 6; Hancock, 7; Harney, 7, 25; Green Spring Furnace, 7, 25; Jewell, 4; Laurel, 7; Maryland Agricultural College, 7; Milford, Del., 7; Millsboro, Del., 7; Mt. St. Mary's, 6, 25; Newark, Del., 7, 19, 25; New Market, 7, 21, 24, 25; Pocomoke City, 7; Port Deposit, 7; Princes Anne, 7; Rock Hall *a*, 7; Rock Hall *b*, 6, 19; Sandy Point, 7; Sharpsburg, 7, 25, 29; Smithsburg *a*, 6; Smithsburg *b*, 7, 19, 24, 25, 29; Solomons, 7; Seaford, Del., 7; St. Charles College, 7; Sunnyside, 7, 8, 16, 19, 24, 25, 29; Taneytown, 8, 25; Van Bibber, 6, 19; Western Md. College, 7, 19; Westernport, 6, 19, 20, 28, 29; Woodstock, 7; Wyoming, Del., 7.

Sleet.—Bachman's Valley, 28; Boonsboro *b*, 15; Chewsville, 14, 18; Clear Spring *b*, 15, 22; Green Spring Furnace, 15; Mt. St. Mary's, 14; New Market, 25; Princess Anne, 14; Sharpsburg, 14; Smithsburg *a*, 22; Smithsburg *b*, 22; Taneytown, 22; Western Md. College, 14, 21; Woodstock, 28.

Hail.—Bachman's Valley, 19; Cambridge, 14; Frostburg, 19; New Earket, 5, 18; Princess Anne, 5; Sharpsburg, 15; Smithsburg *a*, 28; Smithsburg *b*, 15; Solomons, 28; St. Charles College, 12; Taneytown, 14, 29; Woodstock, 12.

Thunderstorms.—Annapolis, 4; Bachman's Valley, 5; Baltimore, 5, 12, 13, 19, 28; Boettcherville, 15, 28; Boonsboro *a*, 4, 15, 19, 28; Boonsboro *b*, 5, 12, 28; Cambridge, 19, 28; Charlotte Hall, 5; Chase, 4, 19; Chestertown, 4, 12, 19; Chewsville 26; Clear Spring *b*, 4, 15, 19, 28; Coleman, 5, 12, 19, 28; Denton, 5; Easton, 12, 28; Fallston, 4, 12, 19, 28; Frederick, 5; Grantsville, 4, 15, 28; Hancock, 12, 27; Harney, 5, 12, 28; Green Spring Furnace, 12, 19, 28; Jewell, 4, 12; Kirkwood, Del., 12; Laurel, 4, 12; Mardela Springs, 5, 10, 18, 25, 28; Md. Agricultural College, 4; Millsboro, Del., 19; Mt. St. Mary's, 5, 12, 28; Newark, Del., 5, 12; New Market, 4, 12, 18; Pocomoke City, 19, 28; Princess Anne, 5, 19, 28; Rock Hall *a*, 12, 19; Rock Hall *b*, 5, 19; Sharpsburg, 4, 19, 27; Smithsburg *a*, 4, 12, 19, 28; Smithsburg *b*, 5, 19, 28; Solomons, 4, 5, 12, 19, 22, 28; Seaford, Del., 5; St. Charles College, 4, 12; Sudlersville, 4, 12; Sunnyside, 4, 15, 19, 22, 28, 30; Taneytown, 5, 12, 28; Van Bibber, 4, 12, 28; Washington, 5, 12, 19; Western Md. College, 4, 12; Woodstock, 5, 12, 28; Wyoming, Del., 31.

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CORRECTION.

In the January number of Climate and Crops the observations for Clear Spring No. 1, should be credited to Clear Spring No. 2.

Climatological data for Maryland and Delaware, March, 1899.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.					Sky.			Prevailing direction of wind.	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).	Number rainy days.	Number clear days.	Number partly cloudy days.	Number cloudy days.		
WESTERN MARYLAND.																				
Boettcherville	Allegany	780	9	43.1	+3.3	76	12	12	7	42	3.62	+0.53	1.25	2.0	10	.....	.....	.....	.....	F. F. Brown.
Boonsboro 1	Washington	600	1	40.0	.....	75	12	18	7	30	3.31	.....	0.92	2.0	9	11	9	11	W	Huntzbery&Henneberger.
Boonsboro 2	Washington	800	1	39.0	.....	72	12	15	7	30	2.44	.....	0.86	3.0	8	8	9	14	E	Samuel L. Ford.
Chewsville	Washington	530	1	39.9	.....	74	12	18	7	34	3.86	.....	1.09	4.0	9	12	10	9	W	E. I. Oswald.
Clear Spring 1	Washington	500	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. E. Loose, Jr.
Clear Spring 2	Washington	650	1	38.1	.....	75	13	15	8	37	5.11	.....	1.00	4.0	14	13	9	9	.....	W. W. Frantz.
Cumberland	Allegany	722	40	43.9	+2.0	71	12	18	7	27	4.51	+1.48	1.00	0.8	10	2	0	29	W	Howard Shriver.
Deer Park	Garrett	2,457	8	37.9	+3.2	70	11	3	8	40	5.71	+2.39	1.25	9.0	15	.....	.....	.....	.....	S. P. Specht.
Frostburg	Allegany	2,200	4	37.9	.....	71	12	7	7	33	5.34	.....	1.42	6.8	13	14	0	17	W	Mrs. G. G. Townsend.
Grantsville	Garrett	2,400	6	34.9	−1.6	68	11	5	7	28	5.24	+0.56	1.60	10.0	13	1	6	24	W	J. S. Miller.
Green Spring Furnace	Washington	450	7	41.5	−2.3	75	12	19	7	33	4.11	+1.47	1.00	2.5	11	11	8	12	E	E. G. Kinsell.
Hagerstown	Washington	552	8	40.0	−1.7	75	13	18	8	39	3.52	−0.80	1.00	2.0	7	17	4	10	W	Prof. C. E. Carl.
Hancock	Washington	455	1	40.0	.....	77	12	12	7	38	3.81	.....	1.30	3.0	7	6	12	13	E	J. D. Stotlemeyer.
Sharpsburg	Washington	420	5	40.5	−0.6	74	12	19	7	29	3.31	+0.27	0.83	1.0	13	13	4	14	SE	R. L. Hiberger.
Smithsburg 1	Washington	750	2	39.4	.....	72	12	18	7	33	3.61	.....	0.95	3.0	11	14	2	15	S	Joseph L. Miller.
Smithsburg 2	Washington	900	1	39.1	.....	73	12	16	7	28	4.25	.....	1.18	4.5	10	11	3	17	SE	Dr. D. W. Crowther.
Sunnyside	Garrett	2,440	7	36.3	+0.2	68	12	1	7	39	7.42	+2.46	1.53	12.0	25	5	7	19	NW	J. G. Knauer.
Westernport	Allegany	1,000	5	39.2	+1.0	72	12	12	7	36	4.29	+1.40	1.22	2.2	12	.....	.....	.....	.....	Prof. O. H. Bruce.
Average		.....	.....	39.5	+0.4	.....	.....	.....	.....	.....	4.32	+1.08	.....	4.2	12	10	6	15	W	
NORTHERN-CENTRAL MD.																				
Bachman's Valley	Carroll	860	6	37.5	+2.3	68	12	18	9	28	6.78	+2.55	2.02	3.0	9	14	4	13	SE	J. M. Myers.
Baltimore	Baltimore	123	65	41.8	0.0	74	12	26	21	30	4.93	+0.89	1.10	1.6	12	7	10	14	E	U.S. Weather Bureau.
Baltimore, J. H. Hospital	Baltimore	112	5	40.0	.....	74	12	24	21	38	5.40	.....	1.10	3.5	14	11	2	18	N	W. L. Woods.
Chase	Baltimore	25	1	40.0	.....	70	12	21	25	32	5.54	.....	1.30	0.5	10	9	11	11	NW	J. W. Crouch.
Darlington Academy	Harford	300	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Prof. A. F. Galbreath.
Fallston School	Harford	450	31	40.9	+2.5	70	12	23	21	27	5.05	+1.76	1.18	2.5	13	2	19	10	SE	G. G. Curtiss, A. M.
Frederick	Frederick	275	27	41.2	−0.5	72	12	21	7	27	4.58	+1.56	1.28	1.2	10	8	10	13	S&W	McClintock Young.
Great Falls	Montgomery	200	11	40.6	−1.6	74	13	19	8	35	4.16	+1.14	1.30	0.5	12	17	0	14	NE	Washington Aqueduct.
Harney	Frederick	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.92	.....	1.07	4.0	12	14	9	8	.....	Warren Rill.
McDonogh	Baltimore	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. B. Wessels.
Mt. St. Mary's College	Frederick	720	39	38.3	−0.2	71	12	20	7	33	4.21	+0.15	1.09	2.8	13	9	6	16	SW	J. A. Mitchell, Ph. D.
New Market	Frederick	550	16	40.2	−0.5	73	12	19	7	31	4.67	+0.98	1.20	3.0	13	5	12	14	NW	H. H. Hopkins, M. D.
St. Charles College	Howard	500	5	40.6	−1.7	76	13	22	8	38	5.63	+2.56	1.25	1.8	12	7	11	13	SE	Rev. George L. Harig.
Taneytown	Carroll	490	7	39.9	.....	71	13	21	9	33	2.98	+0.58	0.94	5.0	15	10	1	20	W	Prof. H. Meier.
Van Bibber	Harford	22	4	39.7	−1.1	64	12	24	20	31	6.15	+2.52	1.53	3.0	16	8	7	16	NW	H. A. Wroth.
Western Maryland Coll.	Carroll	720	5	38.1	.....	71	12	20	8	31	4.95	+1.45	1.18	2.0	12	6	4	21	E	Dr. Cleveland Abbe, Jr.
Woodstock College	Baltimore	392	30	40.6	−1.6	73	12	21	9	34	4.87	+0.89	1.02	3.6	13	8	12	11	NW	T. J. A. Freeman, S. J.
Average		.....	.....	39.9	−0.2	.....	.....	.....	.....	.....	4.99	+1.42	.....	2.6	12	9	8	14	NW	
SOUTHERN MARYLAND.																				
Annapolis	Anne Arundel	45	26	44.4	+2.3	62	19	27	8	29	5.49	+1.22	1.43	.....	9	13	6	12	NE	J. E. Abbott.
Charlotte Hall School	St. Mary's	167	6	44.3	−1.1	75	11	18	9	36	4.61	+1.51	0.96	6.0	10	11	11	8	NE	J. F. Coad.
Cherryfields *	St. Mary's	7	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Col. J. E. Coad.
Distributing Reservoir †	Dist. of Columbia.	120	9	42.0	−1.2	68	12	20	7	.....	4.10	+1.01	1.33	.....	11	.....	.....	.....	.....	Washington Aqueduct.
Jewell	Anne Arundel	165	12	41.7	−0.3	74	12	20	7	39	4.46	−0.29	1.65	4.0	10	14	4	13	NW	J. Plummer.
Laurel	Prince George's	150	5	42.1	−1.2	74	12	19	9	34	5.29	+2.55	1.24	3.0	8	4	12	15	.....	Dr. T. M. Baldwin.
Md. Agricultural College	Prince George's	170	8	43.0	−1.3	71	12	22	9	29	5.90	+2.95	1.40	4.0	11	11	7	13	.....	Prof. J. H. Patterson.
Prince Fredericktown	Calvert	80	.....	43.0	.....	74	12	20	8	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	Alfred Presson.
Receiving Reservoir †	Dist. of Columbia.	160	9	42.3	−0.3	70	12	20	7	.....	4.50	+1.59	1.40	.....	12	.....	.....	.....	.....	Washington Aqueduct.
Solomon's	Calvert	20	8	42.3	−1.3	70	12	22	7	25	5.28	+2.13	1.19	6.0	13	4	6	21	NW	W. H. Marsh, M. D.
Washington	Dist. of Columbia.	112	29	42.2	+1.0	72	12	19	7	30	4.94	+0.86	1.24	.....	12	7	9	15	NW	U.S. Weather Bureau.
Average		.....	.....	42.7	−0.4	.....	.....	.....	.....	.....	4.95	+1.50	.....	4.6	11	9	8	14	NW	
EASTERN MARYLAND.																				
Cambridge	Dorchester	.....	.....	42.9	.....	71	22	26	7	29	5.74	.....	1.65	0.4	9	14	4	13	NW	J. A. Jordan.
Chestertown	Kent	80	15	41.2	−0.9	69	12	25	8	33	5.59	+2.27	1.70	4.0	11	8	12	11	NW	Hon. M. de K. Smith.
Coleman	Kent	80	1	40.7	.....	68	12	24	21	27	6.12	.....	1.22	3.0	12	14	4	13	SW	James S. Harris.
Denton	Caroline	42	10	40.9	−2.9	74	12	26	24	36	5.25	+1.18	1.36	8.0	6	5	13	5	E	F. C. Ramsdell.
Easton	Talbot	35	10	42.4	−1.2	70	12	24	9	32	4.70	+1.41	1.32	10.0	14	10	8	13	S	Henry Shreve.
Mardela Springs	Wicomico	25	12	43.7	−1.2	71	12	25	9	27	4.74	+0.36	1.46	.....	13	5	11	15	NW	A. E. Acworth.
Ocean City	Worcester	10	1	45.4	.....	60	23	.....	.....	.....	3.78	+1.62	1.58	.....	5	7	6	19	NW	E. M. Scott.
Pocomoke City	Worcester	37	6	46.4	−2.1	72	12	24	8	27	4.26	+0.70	1.20	4.0	13	13	8	10	W	R. M. Stevenson.
Port Deposit	Cecil	25	2	40.9	.....	74	12	23	21	40	5.50	.....	1.70	1.0	.....	17	1	13	NW	J. I. France.
Princess Anne	Somerset	20	25	44.3	−2.7	72	12	24	25	31	4.74	+1.32	1.85	3.0	12	5	17	9	NW	J. R. Stewart.
Queenstown	Queen Anne	20	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dr. W. K. Carroll.
Rock Hall 1	Kent	20	1	42.2	.....	65	12	26	21	33	5.07	.....	1.25	1.6	12	15	3	13	NW	Chas. N. Satterfield.
Rock Hall 2	Kent	25	1	41.9	.....	66	12	25	21	25	4.99	.....	1.35	2.0	11	9	9	13	S	Isaac L. Leary.
Sandy Point	Worcester	12	1	.....	.....	.....	.....	.....	.....	.....	4.77	.....	1.00	4.0	10	15	0	16	SE	J. B. Dirickson.
Suddlersville	Queen Anne	.....	1	44.2	.....	72	13	25	9	29	4.78	.....	1.69	6.0	14	12	7	12	W	J. S. Barwick.
Average		.....	.....	42.8	−1.8	.....	.....	.....	.....	.....	5.00	+1.27	.....	3.9	11	11	7	13	NW	
DELAWARE.																				
Milford	Kent	20	20	44.7	+1.6	72	12	25	9	31	5.47	+1.88	1.21	4.0	10	19	2	10	NW	J. Y. Foulk.
Millsboro	Sussex	23	7	43.4	−0.2	72	13	20	9	38	5.52	+2.42	1.59	.....	8	16	5	10	S	Rev. L. W. Wells.
Newark (Delaware Coll.)	Newcastle	136	6	39.5	−0.8	70	12	22	21	30	6.03	+2.96	1.31	2.5	15	10	8	13	NW	Prof. W. H. Bishop.
Seaford	Sussex	40	9	44.6	+1.3	72	12	23	9	32	5.34	+1.71	1.41	5.0	12	13	1	17	SE	W. T. Wallace.
Wyoming	Kent	.....	.....	37.9	.....	66	12	22	9	36	4.22	.....	1.25	2.0	9	14	4	12	E	J. A. Trope.
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Average	.....	.....	.....	42.0	+0.5	.....	.....	.....	.....	.....	5.32	+2.24	.....	3.4	11	14	4	12	NW	
General average	.....	.....	.....	41.4	−0.3	.....	.....	.....	.....	.....	4.92	+1.50	.....	+3.7	11	11	7	13	NW	

NOTE.—All records are used in determining State or district means, but State and district departures are determined by comparison of current data of only such stations as have normals.

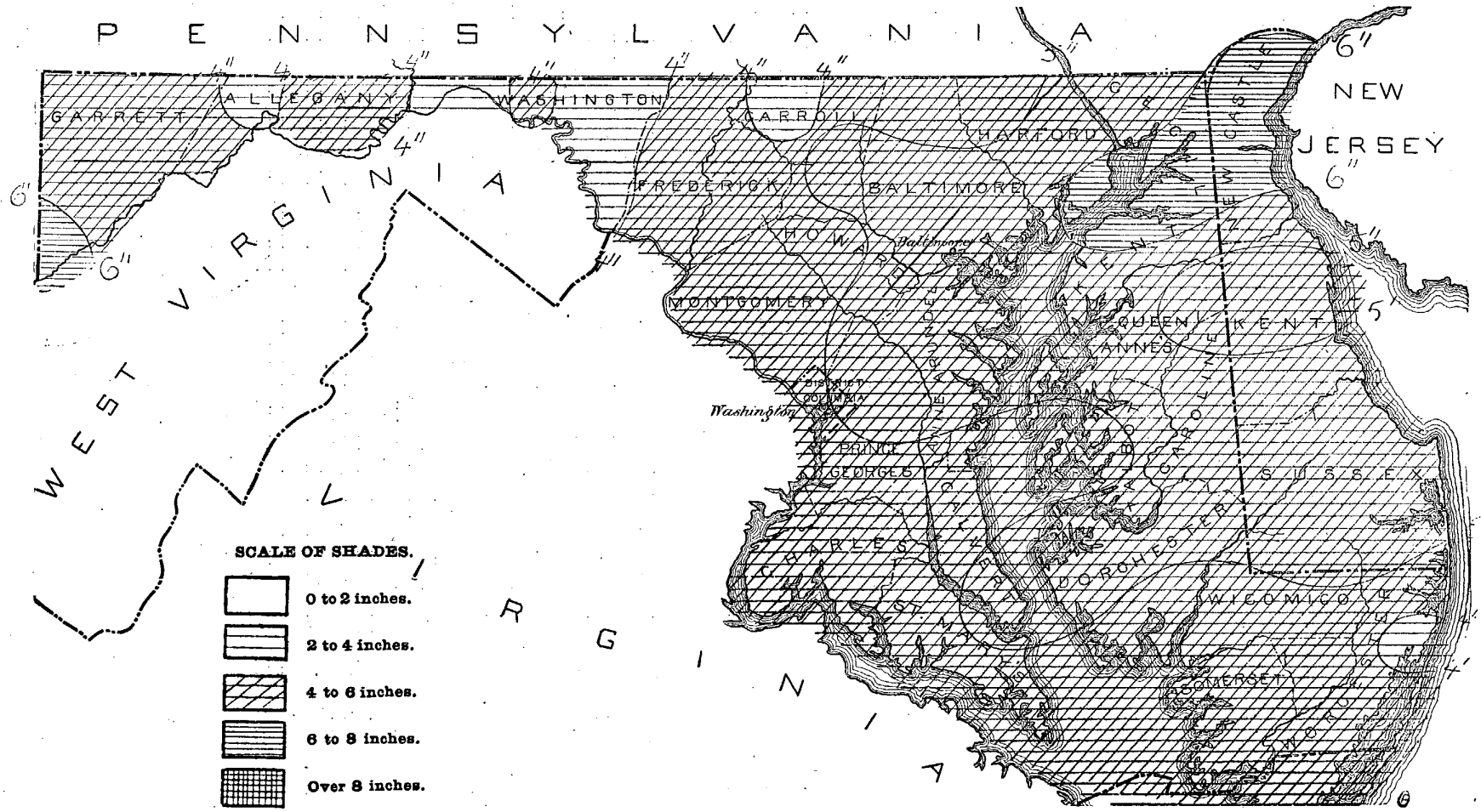
* Mean of 8 a. m. + 8 p. m. ÷ 2.

† Mean of 7 a. m. + 2 p. m. ÷ 2.

Maximum and minimum temperatures for Maryland and Delaware, March, 1899.

Stations.	1.		2.		3.		4.		5.		6.		7.		8.		9.		10.		11.		12.		13.		14.		15.		16.		17.		18.		19.		20.		21.		22.		23.		24.		25.		26.		27.		28.		29.		30.		31.		Monthly mean.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Annapolis	58	48	57	37	48	36	50	36	66	37	45	39	37	30	43	27	39	28	47	40	52	37	74	68	57	45	46	39	47	41	46	41	50	30	57	45	62	41	45	39	40	31	50	41	52	37	50	29	48	31	51	34	50	37	53	40	48	30	58	36	61	34	51.2	37.5
Bachman's Valley	50	28	43	33	40	32	44	36	50	35	43	23	37	22	33	21	34	18	45	24	53	32	68	42	58	36	42	32	42	30	46	33	46	25	52	30	58	30	40	28	36	21	46	30	46	33	39	27	38	22	45	34	47	29	40	31	40	26	56	32	60	35	45.7	29.4
Baltimore	56	36	48	38	40	36	44	36	65	38	44	33	35	27	35	26	38	28	46	34	55	36	74	44	56	40	40	37	44	34	50	35	44	33	56	38	64	35	44	31	38	26	50	33	52	36	44	32	43	30	51	39	43	34	43	34	43	30	60	35	67	48	48.8	34.6
Baltimore, J.H.Hp'l.	56	29	47	36	42	33	44	33	65	38	45	30	34	26	36	24	38	24	48	28	55	32	74	36	51	34	41	35	46	31	56	35	45	29	56	33	63	35	39	32	50	24	51	34	43	29	43	26	42	29	51	40	44	31	44	30	43	27	60	28	66	36	49.0	31.0
Blue Mtn. House	46	33	24	..	47	26	...	..	...	..	...	..	43	15	30	17	33	26	46	32	59	33	70	34	42	29	41	32	46	25	58	25	59	33	36	26	41	21	48	28	36	33	44	23	46	24	56	29	58	22	49	27	...	..	...	..	...	..	...	..	...	..	46.0	27.0
Boettcherville	57	31	58	38	48	37	48	37	54	39	45	26	47	12	36	21	50	20	59	31	70	28	76	35	70	37	53	31	47	33	52	34	55	25	57	32	61	31	42	28	43	21	47	33	51	35	46	25	40	21	51	33	47	34	52	36	44	24	61	35	62	40	55.8	30.4
Boonsboro 1	58	36	47	39	44	35	48	36	51	38	48	28	30	18	35	20	35	25	52	28	59	35	75	53	51	38	45	35	40	32	44	36	51	26	52	36	63	33	41	30	41	23	46	33	47	41	41	27	39	24	48	33	46	33	41	33	39	25	61	33	64	38	47.8	32.3
Boonsboro 2	56	36	46	36	42	34	42	34	51	37	42	28	28	15	33	19	35	25	50	39	58	32	72	50	66	36	43	34	42	32	44	34	48	26	52	34	61	31	41	29	36	24	43	31	46	36	40	26	37	25	46	34	43	31	40	32	44	24	58	32	63	37	46.7	31.3
Cambridge	53	36	49	39	43	37	46	37	53	35	42	37	37	26	34	28	42	28	50	31	57	35	71	47	49	45	45	38	46	37	47	41	46	38	55	35	61	32	45	41	42	30	54	37	47	42	42	35	45	30	48	34	45	35	47	35	47	33	62	36	68	49	49.0	36.7
Charlotte Hall	60	30	62	38	55	36	56	33	68	35	37	19	42	25	54	19	54	18	61	34	75	51	65	40	42	35	43	33	52	34	52	25	58	36	69	35	50	31	46	28	50	33	56	36	54	38	46	32	47	22	55	40	45	35	...	..	50	37	64	53	73	52	54.7	33.8
Chase	52	29	47	33	43	35	43	35	57	39	46	23	40	28	36	25	35	22	48	24	49	30	70	38	67	42	45	34	43	34	49	37	43	24	50	32	60	35	45	32	41	25	50	33	55	31	52	30	41	21	51	41	43	32	43	33	44	30	55	33	62	37	48.5	31.5
Chestertown	53	34	50	37	43	35	45	36	65	38	47	28	35	30	34	25	37	26	45	27	48	35	69	46	49	43	43	37	45	35	48	39	45	30	54	34	67	34	43	33	40	25	51	33	51	44	44	34	45	28	49	40	26	33	45	32	45	30	56	35	62	46	48.4	33.9
Chewsville	54	34	48	37	44	33	47	38	51	32	45	25	41	18	35	19	36	20	60	28	60	35	74	53	70	36	49	33	41	32	47	35	48	24	54	37	64	33	43	30	40	22	47	33	47	38	50	25	38	22	48	33	46	32	42	35	46	12	42	30	61	37	49.0	30.7
Clear Spring 1	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	....	....
Clear Spring 2	47	25	56	36	42	35	42	35	42	35	51	36	45	16	30	15	35	20	40	27	49	31	58	34	75	38	50	33	46	31	45	31	45	26	46	31	52	35	57	30	42	21	52	25	44	40	49	25	40	24	42	38	48	32	45	32	40	24	41	24	60	40	46.6	29.5
Coleman	55	34	48	36	42	34	44	35	65	38	48	30	36	29	37	26	35	25	49	29	55	32	68	41	66	41	43	36	43	34	49	39	48	30	55	33	63	35	45	32	30	24	50	31	51	42	50	32	44	28	50	38	48	35	45	35	44	29	57	35	65	46	48.9	32.4
Cumberland	54	46	47	43	46	45	50	42	51	39	49	35	33	18	40	25	50	28	59	40	64	38	71	48	56	41	52	38	48	39	45	37	60	33	52	49	55	34	40	30	48	28	51	37	47	27	46	26	42	30	45	35	51	49	45	43	50	39	62	48	58	42	50.7	37.2
Darlington	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	....	....
Deer Park	50	32	47	37	52	34	62	36	48	26	40	23	32	25	30	3	41	8	55	34	70	30	65	44	53	30	55	30	55	30	50	26	55	34	54	36	50	27	31	21	42	13	60	30	49	26	30	16	40	17	49	28	44	28	57	33	50	14	52	26	47	38	48.9	27.0
Denton	51	40	48	35	45	36	46	40	60	38	65	29	32	30	50	30	46	29	58	40	62	44	74	48	64	46	46	34	45	35	44	34	44	29	40	38	38	35	43	28	45	29	44	33	40	29	34	26	39	28	45	34	40	32	34	29	35	30	45	32	69	45	47.5	34.4
Easton	57	33	50	36	43	36	54	36	66	39	52	31	33	29	34	25	41	24	52	27	59	32	70	38	50	45	41	38	47	35	50	40	50	28	59	30	64	38	64	34	40	26	54	28	56	44	44	32	47	26	51	30	45	32	48	34	45	31	59	32	66	41	51.6	33.2
Fallston School	50	31	46	36	40	33	42	34	55	36	43	28	34	28	33	24	34	25	47	31	48	33	70	43	65	40	42	34	41	32	47	37	44	28	48	34	58	33	41	31	36	23	50	30	50	39	42	29	50	25	47	37	46	29	41	32	41	28	56	33	64	41	46.9	32.2
Frederick	55	33	47	39	44	35	44	36	54	38	47	30	31	21	38	24	37	25	52	30	60	36	72	46	53	41	45	36	44	34	45	38	51	31	55	37	60	33	42	32	42	26	47	33	47	42	43	30	42	26	49	36	49	35	43	35	42	28	60	34	63	42	48.5	33.9
Frostburg	60	35	47	37	40	35	50	34	44	30	50	24	35	7	36	15	44	18	55	35	66	33	71	48	67	32	42	30	38	28	46	28	56	26	55	35	54	25	39	22	40	19	45	30	45	30	39	19	35	23	50	31	42	29	41	32	39	15	56	29	53	41	47.7	28.2
Grantsville	46	31	47	34	52	38	62	35	36	27	40	19	19	5	27	13	41	13	55	33	68	37	65	41	47	29	41	28	51	29	32	26	49	25	56	31	45	22	30	19	37	13	58	30	33	26	30	16	36	31	38	26	42	28	45	32	30	14	49	26	46	32	43.6	26.1
Great Falls	52	24	55	36	47	35	42	36	46	37	59	25	48	19	34	19	37	21	48	26	55	30	71	36	74	43	52	37	43	33	46	33	48	27	51	30	58	39	62	34	44	27	45	29	47	36	49	31	43	23	49	30	50	36	46	36	42	29	44	29	63	37	50.0	31.1
Green Sp. Furnace	54	32	46	38	42	34	46	36	50	36	40	26	40	19	36	21	36	20	50	29	58	30	75	42	64	39	46	31	40	33	45	35	48	24	54	36	57	35	40	28	42	22	46	32	50	38	40	28	42	22	48	34	50	38	43	35	41	26	61	36	62	39	51.4	31.5
Hagerstown	54	31	56	36	45	34	46	36	50	35	47	27	43	21	45	18	34	24	48	30	54	34	71	47	75	37	49	34	45	32	45	35	47	28	53	35	63	34	40	29	40	23	43	31	46	38	45	22	40	25	45	30	48	32	49	34	41	24	59	33	63	39	49.2	30.8
Hancock	59	30	52	38	43	35	45	36	53	37	46	26	43	12	36	20	35	19	52	30	63	34	77	39	69	39	49	31	43	33	46	35	52	23	50	35	55	33	41	30	42	21	44	32	46	39	42	26	40	21	48	31	52	33	47	35	41	24	61	35	61	39	49.4	30.7
Jewell	55	35	39	36	46	34	41	34	66	28	48	30	39	20	35	23	42	26	47	25	58	33	74	35	68	39	42	36	44	33	50	39	45	27	58	35	66	36	47	32	44	26	51	34	53	41	44	30	43	24	53	38	49	36	48	38	45	29	60	35	68	46	50.6	32.7
Laurel	59	33	49	37	45	36	44	36	66	38	51	25	32	23	39	25	40	19	49	25	62	31	74	40	52	43	42	38	46	34	50	37	52	29	50	34	67	36	50	32	40	27	51	39	50	45	40	32	45	24	56	39	50	37	43	34	39	30	64	39	69	45	50.5	33.7
Mardela Springs	55	39	56	39	47	33	65	35	66	44	44	36	40	25	35	26	47	25	37	26	61	35	71	50	67	44	46	35	50	35	50	39	40	28	...	29	66	37	46	34	42	31	62	35	59	39	43	28	46	31	52	41	45	32	52	34	55	33	59	32	69	54	52.4	35.0
Maryland Ag. Coll.	57	34	49	40	43	39	45	38	64	39	49	28	32	24	37	27	38	22	51	28	58	33	71	52	55	46	43	39	44	36	50	42	54	30	54	38	63	38	49	35	45	30	49	37	51	40	47	34	44	28	52	40	48	38	42	37	48	32	63	34	67	46	50.4	35.6
McDonogh	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	....	....
Milford, Del	57	35	53	37	45	36	49	37	66	35	45	30	35	30	36	25	41	25	47	29	62	31	72	56	46	36	59	29	48	36	55	40	51	28	60	34	64	42	51	32	48	26	61	36	54	43	47	29	47	28	52	40	48	34	48	36	57	36	62	35	70	48	53.1	36.3
Millsboro, Del	46	32	56	36	57	34	46	35	56	35	66	28	45	28	38	25	35	20	45	27	45	31	59	48	72	47	54	35	43	36	54	40	52	29	45	33	60	57	66	33	48	26	52	28	65	51	62	29	43	25	48	35	52	32	47	37	51	33	51	32	59	46	52.5	34.2
Mt. St. Marys Coll	54	37	44	34	40	34	40	35	53	27	45	21	31	20	34	23	39	28	48	33	54	35	71	38	47	34	44	33	44	33	45	30	45	34	54	35	59	30	40	22	39	24	46	31	47	27	40	26	41	27	48	32	45	32	41	26	40	26	55	38	58	42	46.1	30.5
Newark, Del. Coll	51	32	44	35	43	34	43	35	64	37	46	28	35	28	35	26	36	25	46	30	50	32	70	40	46	39	43	34	42	34	46	37	45	26	52	32	62	33	42	30	38	22	49	30	49	36	43	30	40	24	46	38	48	28	47	30	42	29	56	35	62	40	47.1	31.9
New Market	54	34	53	37	42	34	45	34	51	37	46	28	33	19	34	21	35	22	50	27	59	33	73	50	51	39	44	34	45	32	52	29	53	35	58	35	42	30	43	34	42	34	45	32	48	40	42	27	42	24	51	35	49	32	41	35	41	25	62	31	63	43	48.0	32.3
Ocean City	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	45	35	51	35	53	40	58	40	45	35	50	38	51	32	41	35	52	38	56	40	43	30	44	30	52	42	60	40	45	32	50	30	53	43	46	34	48	36	45	35	52	36	59	43	54.5	36.3
Pocomoke City	61	38	63	41	58	37	59	37	64	41	49	35	41	29	38	24	55	30	50	31	62	35	72	52	65	50	50	35	54	35	51	41	50	30	62	37	58	40	51	33	48	28	66	39	63	43	48	34	46	28	53	44	48	34	58	38	59	35	60	40	70	49	55.9	36.9
Port Deposit	52	25	48	35	46	34	46	35	63	38	45	30	40	29	38	28	44	30	48	29	70	35	74	40	48	32	50	35	38	34	42	36	44	28	60	33	56	30	42	33	45	23	64	24	44	28	47	33	52	28	49	30	52	29	48	33	42	30	52	29	68	41	50.2	31.6
Princess Anne	59	34	60	38	45	36	57	36	66	41	48	28	41	25	36	20	52	25	53	27	61	31	72	51	63	41	42	35	54	35	52	35	51	29	62	34	66	35	51	33	43	27	66	40	61	37	45	29	44	24	54	41	46	34	58	36	58	31	60	30	70	47	54.7	33.9
Pr. Fredericktown	55	34	50	37	46	36	52	35	68	38	50	28	40	21	38	20	52	24	47	25	58	34	74	50	67	44	46	36	45	34	49	38	46	27	58	35	69	38	48	32	44	27	55	35	54	40	44	30	48	24	53	41	45	34	49	35	46	31	61	32	70	45	52.4	33.6
Queenstown	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	...	..	....	....
Rock Hall 1	58	34	51	37	46	36	57	37	53	36	63	30	42	28	35	27	36	26	51	27	55	35	65	45	60	43	48	37	45	35	50	39	49	31	53	35	62	38	45	34	43	26	50	34	52	43	44	33	44	27	52	40	45	32	44	33	...	32	...	36	...	43	49.9	34.5
Rock Hall 2	55	31	53	37	49	35	45	36	63	38	49	27	42	28	35	27	36	26	48	25	55	35	66	46	65	40	46	37	45	34	50	40	46	31	54	34	63	38	44	35	42	25	51	33	51	43	46	33	44	25	51	40	45	32	44	33	44	30	57	37	65	47	49.8	34.1
Seaford, Del	58	33	56	36	48	35	54	36	68	38	57	28	38	28	38	25	45	23	53	27	63	31	72	49	64	41	42	39	53	40	55	37	53	28	60	33	67	36	50	33	42	29	65	34	59	40	46	28	45	25	56	40	47	32	47	35	53	32	62	31	70	46	54.7	34.5
Sharpsburg	54	35	46	30	42	35	45	37	53	37	47	28	31	19	36	23	36	24	51	29	60	35	74	53	52	40	45	35	40	33	45	37	51	27	53	37	63	41	41	32	42	25	44	30	47	41	41	29	41	25	50	33	48	34	41	35	40	26	61	32	62	39	47.8	33.3
Smithsburg 1	54	35	47	36	42	32	45	35	50	37	45	27	39	18	34	19	34	24	49	31	52	35	72	50	63	36	45	33	40	32	45	37	48	27	55	35	65	32	40	28	40	21	45	32	46	32	39	25	37	25	47	33	47	32	42	34	41	24	58	31	60	38	47.3	31.5
Smithsburg 2	55	37	49	37	42	32	45	34	51	37	46	25	39	16	32	18	34	23	50	34	58	35	73	52	63	36	46	34	40	31	44	34	49	26	52	34	60	32	39	28	40	20	46	32	42	32	39	24	36	25	47	34	48	31	...	..	41	22	58	32	60	38	47.4	30.8
Solomons	47	35	43	37	40	36	44	36	60	38	46	30	37	22	38	24	50	28	51	28	51	28	70	47	58	42	42	35	44	34	49	37	47	31	54	37	61	36	51	34	43	29	51	39	55	41	45	34	44	34	53	43	43	36	48	37	48	33	59	36	69	46	49.7	34.9
St. Charles College	53	31	52	37	43	34	44	34	55	37	48	26	44	24	34	22	34	24	47	29	56	30	72	34	76	40	74	43	43	31	47	36	46	27	53	33	62	34	42	31	38	24	44	31	48	39	43	34	39	23	44	36	46	32	47	32	42	27	58	30	56	42	49.4	31.8
Suddlersville	56	34	50	37	53	35	50	35	67	38	65	37	55	29	39	25	38	25	50	29	58	34	71	50	72	52	45	37	46	35	52	40	50	30	56	34	65	42	47	32	47	26	50	32	55	37	46	31	45	29	52	39	50	31	48	34	49	33	60	35	64	47	53.3	35.0
Sunnyside	55	31	49	37	58	37	63	39	42	25	38	16	18	1	28	10	42	9	61	31	67	28	68	41	45	28	42	29	55	33	32	25	54	18	53	31	54	23	55	19	47	13	62	33	33	23	31	15	45	17	38	28	51	17	59	33	30	12	51	22	47	33	48.2	24.4
Taneytown	53	33	45	31	43	34	52	35	54	36	44	27	45	22	43	23	44	21	38	27	48	29	59	30	71	41	43	38	45	29	36	34	46	43	61	30	60	35	58	30	61	28	38	32	48	27	42	29	43	24	48	30	50	33	42	36	46	27	50	28	62	37	49.0	30.9
Van Bibber	47	34	47	35	43	35	44	37	60	29	45	29	35	26	35	25	37	28	50	34	58	35	64	42	48	36	42	34	44	37	48	28	45	30	53	37	58	33	42	24	39	25	52	37	50	31	42	26	46	29	49	31	46	32	44	31	42	30	55	35	63	35	47.5	31.9
Walbrook	54	32	46	38	43	36	45	35	62	38	44	28	41	26	35	24	36	25	47	31	56	34	73	43	66	42	48	36	43	33	49	39	47	29	55	35	64	35	42	32	39	25	50	32	49	38	42	30	41	25	50	38	48	33	43	33	43	28	59	33	66	46	52.4	33.3
Washington, D. C.	57	37	48	39	41	36	49	36	65	39	46	28	34	19	36	26	40	29	49	28	57	33	72	51	59	41	42	37	45	33	48	35	50	31	56	37	65	35	46	34	43	27	50	34	50	36	43	32	47	27	51	42	45	35	44	34	45	29	62	35	68	48	50.1	34.3
Western Md. Coll	54	30	49	35	40	32	...	31	40	..	45	37	38	21	31	20	33	22	43	29	54	32	71	42	67	36	42	32	41	29	45	34	48	27	52	32	58	30	38	22	38	21	46	29	46	36	38	26	..	..	49	23	...	..	43	31	40	21	58	30	60	39	46.6	29.6
Westernport	58	39	44	38	43	38	52	38	51	28	48	12	23	12	32	20	50	25	60	32	68	32	72	38	49	34	46	32	47	34	42	27	57	37	52	40	56	28	37	24	45	25	47	35	41	25	38	25	50	30	45	35	48	35	42	22	40	23	62	37	54	28	48.3	30.0
Woodstock Coll	56	34	47	34	43	35	47	35	58	33	48	28	33	24	35	23	39	21	51	30	56	35	73	39	51	40	44	36	46	34	46	37	51	31	58	33	62	39	42	32	41	27	50	28	49	34	41	29	45	24	51	30	50	32	45	33	43	28	61	27	65	40	49.3	31.8
Wyoming, Del	...	..	...	..	...	..	...	35	...	37	...	35	35	29	32	25	36	22	38	26	54	30	66	30	44	43	43	36	41	35	40	39	39	26	57	31	...	35	39	30	33	24	50	30	42	40	38	29	39	26	42	39	42	29	44	35	40	32	55	39	57	45	43.2	32.6

TOTAL PRECIPITATION, MARCH, 1899.



Daily precipitation for Maryland and Delaware, March, 1899.

Stations.	Day of month.																													Total.
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	
WESTERN MARYLAND.																																
Boettcherville	....	....	....	....	1.20	.10	....	....	....	....	....	....	....	....	.30	....	....	.23	....	....	....	.23	.10	....	.03	....	....	1.25	.18	....	†	3.62
Boonsboro 1	....	.08	....	....	.70	....	.17	....	....	....	....	....	....	....	.48	....	....	.57	.14	....	....	.20	....	....	.05	....	....	.92	....	....	....	3.31
Boonsboro 2	....	.06	....	....	.63	....	.30	....	....	....	....	....	....	....	....	....	....	.20	....	....	....	.21	.01	....	....	....	....	.86	.17	....	....	2.44
Chewsville	....	....	....	....	.54	....	.40	....	....	....	....	....	....	....	.53	....	....	.30	.40	....	.34	....	....	....	....	....	....	1.09	.23	....	.03	3.86
Clear Spring 1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Clear Spring 2	....	.13	....	.40	.65	.16	.40	....	....	....	....	....	....	....	.27	.59	....	.20	.48	....	....	.21	.07	....	....	....	....	1.00	.41	.14	....	5.11
Cumberland	....	.19	....	.10	.90	....	.18	....	....	....	....	....	....	....	.13	.32	....	.10	.38	.38	.13	.18	....	....	....	....	....	1.00	.52	....	....	4.51
Deer Park	.06	.29	....	....	1.08	....	....	.60	.04	....	....	....	....	....	.30	....	....	.27	.35	.10	....	.69	.16	....	.14	....	....	1.25	.20	....	.18	5.71
Frostburg	....	.30	....	.10	.95	....	.28	....	....	....	....	....	....	....	.43	....	....	.27	.42	†	....	.22	.15	....	.10	....	....	1.42	.30	....	.40	5.34
Grantsville	.20	.20	.05	.40	.40	....	.60	.20	....	....	....	.14	....	....	....	....	....	.70	.35	.10	....	†	....	....	....	....	....	1.60	.30	....	....	5.24
Green Spring Furnace	....	.13	....	....	.70	....	.25	....	....	....	....	....	....	....	.67	....	....	.57	.25	....	....	.17	.09	....	.03	....	....	1.00	.25	....	....	4.11
Hagerstown	....	.15	....	.60	....	.20	....	....	....	....	....	....	....	....	.45	....	....	....	....	.82	....	.30	....	....	....	....	....	1.00	....	....	....	3.52
Hancock	....	.14	....	....	.59	....	.22	....	....	....	....	....	....	....	.49	....	....	.83	....	....	....	....	.24	....	....	†	....	1.30	....	....	....	3.81
Sharpsburg	....	.07	†	....	.80	....	.14	....	....	....	....	....	....	....	.45	....	....	.24	.45	....	....	.15	†	....	....	†	....	.83	.18	....	†	3.31
Smithsburg 1	....	.13	....	.63	....	.30	....	....	....	....	....	....	....	....	.51	....	....	.33	.35	....	....	.32	.05	....	.04	....	....	....	.95	....	....	3.61
Smithsburg 2	....	.15	....	†	.68	....	.33	....	....	....	....	....	....	†	.58	....	....	.30	.54	....	....	.28	.05	....	.10	....	....	1.18	†	....	†	4.25
Sunnyside	....	.35	....	.77	.56	....	.25	.25	.29	....	....	†	....	....	.57	....	....	.33	.72	.20	....	.30	.35	.08	.22	....	....	1.53	.34	....	.31	7.42
Westernport	....	.23	†	.04	.86	....	.10	....	....	....	....	....	.25	....	....	....	....	.43	.07	†	.08	.30	....	....	....	....	1.22	.56	†	.15	....	4.29
NORTHERN-CENTRAL MARYLAND.																																
Bachman's Valley	....	.17	†	†	.90	....	.30	....	....	....	....	....	....	....	.80	....	....	1.12	.90	....	....	.64	....	....	.05	....	....	1.90	....	....	....	6.78
Baltimore	....	.11	†	.07	1.08	....	.16	....	†	....	....	†	.34	....	.74	....	..	.69	.31	....	....	.35	†	....	.09	†	....	.69	.30	....	....	4.93
Baltimore, Johns Hopkins Hospital	....	....	....	.40	1.10	.03	....	....	....	....	....	....	.33	....	.12	.68	....	.35	.28	.52	.45	.03	....	....	....	.08	....	.48	.55	....	....	5.40
Chase	....	.12	....	....	1.30	....	.20	....	....	....	....	....	....	....	.82	....	....	.68	.86	....	....	.33	....	....	....	.08	....	.64	.51	....	....	5.54
Darlington Academy	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fallston School	....	.15	†	.11	1.18	....	.20	....	....	....	....	†	†	....	.80	†	....	1.02	....	....	....	.48	†	....	†	.05	....	.71	.35	....	....	5.05
Frederick	....	.12	.04	....	1.15	....	.12	....	....	....	....	....	....	....	.52	....	....	.41	.58	....	....	.33	....	....	.03	....	....	1.28	....	....	....	4.58
Great Falls	....	....	....	.10	1.30	....	.04	....	....	....	....	....	....	....	.04	.55	....	.20	.55	.17	....	.28	.10	....	....	....	....	.58	.25	....	....	4.16
Harney	....	.50	....	....	.98	....	.30	....	....	....	....	†	....	....	.65	....	....	.50	.15	....	....	.50	....	....	.07	....	....	1.07	....	.20	....	4.92
Mt. St. Mary's College	....	.19	....	.04	.78	.20	....	....	....	....	....	.12	....	....	.58	....	....	.90	.08	....	....	.33	.05	....	.07	.05	....	1.09	....	....	....	4.21
New Market	....	.17	.10	....	1.20	....	.13	....	....	....	....	†	....	.58	....	....	.51	.46	....	....	†	.30	....	†	.06	....	....	1.16	....	....	†	4.67
St. Charles College	....	.63	....	.04	1.21	....	.17	....	....	....	....	.19	....	....	.76	....	....	.54	.43	....	....	.49	....	....	.04	....	....	.70	.43	....	....	5.63
Taneytown	....	.20	....	.08	.94	....	....	.13	....	....	....	.01	....	....	....	.65	....	.01	.02	....	....	.52	....	....	.09	....	....	.10	.23	....	....	2.98
Van Bibber	....	.13	.13	1.53	.10	.30	....	....	....	....	....	†	....	.12	.75	....	.21	1.00	.28	....	.37	.03	.01	....	.07	....	.36	.76	..	....	†	6.15
Western Maryland College	....	.16	....	1.18	....	....	.35	....	....	....	.43	†	....	....	.55	....	....	.41	.45	....	....	.41	....	....	†	....	....	.76	.25	....	....	4.95
Woodstock College	....	.11	.07	....	.99	....	.14	....	....	....	.33	....	....	....	.71	....	....	....	1.02	....	....	.43	....	....	.06	....	....	1.01	....	....	....	4.87
SOUTHERN MARYLAND.																																
Annapolis	....	.05	....	†	.85	....	†	....	†	....	....	....	....	....	.82	....	....	.37	1.43	....	....	.17	....	....	.11	....	....	1.00	.69	....	†	5.49
Charlotte Hall School	....	†	.03	†	.57	.60	....	....	....	....	....	....	.08	.54	....	....	.45	.40	....	....	....	....	....	....	.53	....	.45	.96	....	....	....	4.61
Cherryfields	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Distributing Reservoir, D. C.	....	....	....	.08	1.33	....	....	....	....	....	....	....	....	....	.02	.50	....	.18	.61	.16	....	.25	.01	....	....	....	....	.59	.37	....	....	4.16
Jewell	....	.05	....	.75	....	....	.37	....	....	....	....	....	....	†	.75	....	....	....	.64	....	....	.10	....	....	.15	....	....	1.65	....	....	....	4.46
Laurel	....	.08	....	.10	1.17	....	.30	....	....	....	....	....	....	....	1.00	....	....	....	1.24	....	....	.40	....	....	....	....	....	1.00	....	....	....	5.29
Maryland Agricultural College	....	.10	.08	1.40	....	....	.40	....	....	....	....	....	....	....	.70	....	....	1.30	.25	....	.27	†	....	....	.20	....	.80	.40	....	....	....	5.90
Receiving Reservoir, D. C.	....	....	....	.11	1.40	....	.06	....	....	....	....	....	....	....	.06	.51	....	.21	.58	.25	....	.31	.03	....	....	....	....	.60	.38	....	....	4.50
Solomon's	....	.02	.07	.11	.22	....	1.05	....	....	....	....	....	....	.15	.76	....	....	.29	1.19	....	....	.01	†	....	.07	....	†	1.00	.34	....	†	5.28
Washington, D. C	....	.02	.05	.10	1.24	....	.52	....	....	....	....	†	....	†	.60	....	....	.45	.48	....	....	.28	†	†	.10	....	....	.83	.27	....	†	4.94
EASTERN MARYLAND.																																
Cambridge	....	†	....	....	.30	.65	....	....	....	....	....	....	....	....	1.65	....	....	1.20	.25	....	....	.10	....	....	....	....	....	.85	.70	....	....	5.70
Chestertown	....	.26	....	.57	....	.30	.10	....	....	....	†	....	....	....	.73	....	.23	1.70	.12	....	....	.17	....	....	....	....	.51	.90	....	....	†	5.59
Coleman	....	.09	....	.18	1.15	....	.27	....	....	....	....	.11	....	....	.86	....	....	.54	1.17	....	....	.35	....	....	.08	....	.10	1.22	....	....	....	6.12
Denton	....	....	....	.29	....	....	.80	....	....	....	....	....	....	....	1.36	....	....	....	1.29	....	....	....	....	....	....	....	1.00	.51	....	....	....	5.25
Easton	....	.09	....	....	.17	....	1.06	....	....	....	....	....	....	....	.76	....	....	....	1.19	....	....	....	.10	....	.01	....	....	....	1.32	....	....	....	4.70
Mardela Springs	....	.04	.07	.01	.33	.50	.03	....	....	....	....	....	....	....	.87	....	....	....	1.33	....	....	.08	....	....	....	....	....	....	1.46	....	.02	4.74
Ocean City	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.87	....	....	....	1.58	....	.33	....	....	....	....	....	....	1.00	....	....	....	*3.78
Pocomoke City	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Port Deposit	....	....	....	....	1.70	....	.10	....	....	....	....	....	....	....	1.00	....	....	....	1.00	....	....	?	?	....	....	....	....	1.70	....	....	....	5.50
Princess Anne	....	.04	.02	....	.61	....	.36	....	....	....	....	....	....	.22	.79	....	....	.10	1.85	....	....	.15	....	....	.04	....	....	.56	....	....	†	4.74
Queenstown	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Rock Hall 1	....	.23	.22	.38	.17	....	.16	....	....	....	....	....	....	....	.81	....	....	.40	1.25	....	....	.20	....	....	.02	....	....	.62	.61	....	†	5.07
Rock Hall 2	....	.05	....	.14	.68	....	.20	....	....	....	....	†	....	....	.75	....	....	.34	1.35	....	....	.21	....	....	.02	†	....	.59	.66	....	....	4.99
Sandy Point	....	....	.40	....	.90	....	.40	....	....	....	....	....	....	.10	.80	....	....	....	1.00	.30	....	....	....	....	....	....	.65	.22	....	....	....	4.77
Sudlersville	....	.10	....	.12	.12	....	.55	....	....	....	....	....	....	....	.80	....	....	....	1.69	....	....	.09	....	....	.05	....	....	1.26	..	....	....	4.78
DELAWARE.																																
Milford	....	....	....	.52	.50	....	1.21	....	....	....	....	....	....	....	.92	....	....	....	1.02	....	....	.16	....	....	.02	....	....	....	1.12	....	....	5.47
Millsboro	....	....	....	....	.31	....	1.00	....	....	....	....	....	....	....	1.09	....	....	.18	1.59	....	....	.20	....	....	....	....	....	1.00	.15	....	....	5.52
Newark (Delaware College)	....	.10	....	.11	1.31	....	.24	....	....	....	....	.12	....	....	.71	....	....	.57	.82	....	....	.54	.02	....	.16	....	....	.82	.51	....	....	6.03
Seaford	....	.06	....	....	.58	....	1.02	....	....	....	....	....	....	....	.92	....	....	....	P.28	....	....	.07	....	....	†	....	....	1.41	....	....	....	5.34
Wyoming	....	.07	....	.03	.10	....	.52	....	†	....	....	....	....	....	1.20	....	....	†	1.25	....	....	.20	....	....	....	....	....	.85	....	....	....	4.22

† Trace, when precipitation is less than 0.01 inch. * For 22 days only.