

U. S. DEPARTMENT OF AGRICULTURE.

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REPORT FOR SEPTEMBER, 1897.

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MARYLAND AND DELAWARE SECTION

OF THE

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

IN COOPERATION WITH THE

MARYLAND STATE WEATHER SERVICE.

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PREPARED UNDER THE DIRECTION OF

WILLIS L. MOORE,

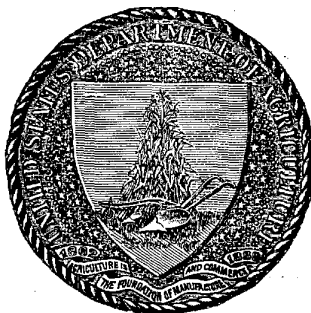
CHIEF OF BUREAU.

BY

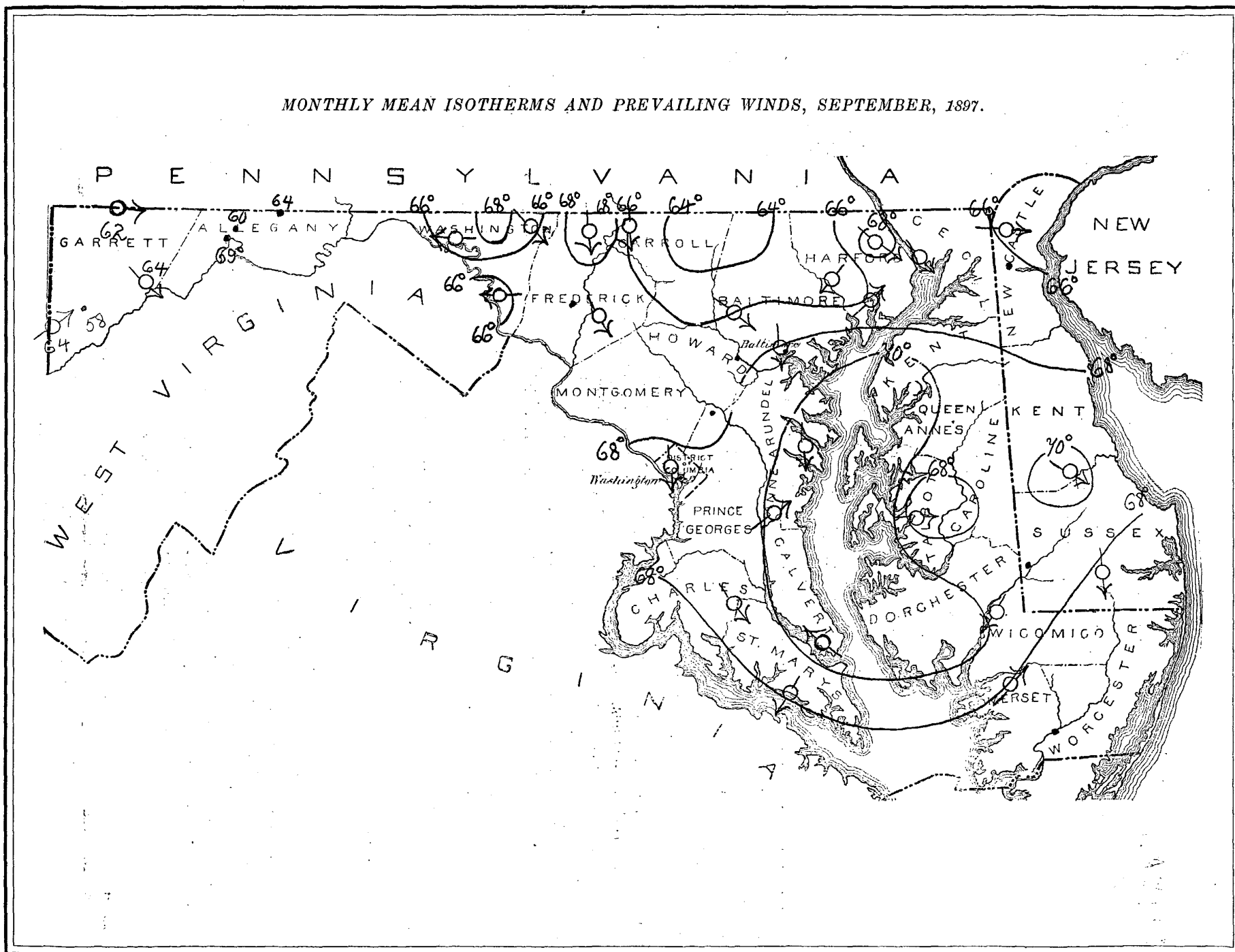
F. J. WALZ,

LOCAL FORECAST OFFICIAL AND SECTION DIRECTOR,

JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.



MONTHLY MEAN ISOTHERMS AND PREVAILING WINDS, SEPTEMBER, 1897.



U. S. DEPARTMENT OF AGRICULTURE,  
**CLIMATE AND CROP SERVICE**  
 OF THE  
**WEATHER BUREAU.**

Central Office,  
 WASHINGTON, D. C. }

WILLIS L. MOORE,  
 Chief. }

IN COOPERATION WITH THE  
 MARYLAND STATE WEATHER SERVICE.

**MARYLAND AND DELAWARE SECTION,**

F. J. WALZ, Section Director,  
 BALTIMORE, MD.

VOL. II.

BALTIMORE, MD.

No. 9.

**REVIEW OF THE CROP CONDITIONS.**

WEEK ENDING, *September 6, 1897.*

The weather during the past week throughout Maryland and Delaware, has been dry, with warm days and cool nights. The temperature has averaged about two degrees below the normal in the vicinity of Baltimore. Showers have fallen in a few scattered sections, but on the whole the rainfall has been deficient and some crops are beginning to feel the effects of a drought. Corn is maturing steadily and some will be ready to cut within a few days; the crop promises to be a good one in nearly all sections. Tomatoes, while of excellent quality, are reported a short yield in many sections. Unexpectedly large shipments of peaches are being received at Baltimore from some sections. The crop in Washington County is reported large; from orchards in Anne Arundel County adjoining the bay, peaches of fine quality are being shipped, but the crop is below the average in quantity. On Kent Island the crop is heavy. In other sections in southern and eastern Maryland the crop seems to be light or a total failure. Much tobacco has been cut and housed. Irish and sweet potatoes are being dug and the yield of both will be fair. Pastures were never better. The ground is being prepared for wheat sowing; a large acreage will be sown this fall.

\* \* \*

WEEK ENDING, *September 13, 1897.*

The weather during the past week has been unusually warm and dry. The temperature has averaged about eight degrees above normal daily, and practically no rain has fallen over the entire Section. Vegetation generally is suffering from drought, and rain is needed badly for pastures, potatoes, and tomatoes. Plowing is at a standstill, owing to the dry weather. Very little wheat has been sown, and only a small amount of barley. Corn is ripening fast, and the crop is exceedingly promising. Buckwheat is being cut, and heavy yields are reported. Tomatoes have been injured considerably by the hot, dry weather, and the yield will be light. Late potatoes are being dug, with fair yields. The clover seed is filling out well and in some sections nearly all har-

vested. Housing of the early crop of tobacco is nearly finished; the late crop is being damaged by the drought. Peach shipments are about over, although they are reported plentiful in Charles County. All crops are about made, and final yields will undoubtedly be improved by a few good showers.

\* \* \*

WEEK ENDING, *September 20, 1897.*

The weather during the past week has been unusually warm and dry. The temperature has averaged about five degrees daily above the normal. The excess was mainly received during the first five days of the week, afterward turning off cool. There was no rain except one moderately heavy shower in the north-central and western districts. Over the greater portion of the eastern and southern counties no rain has fallen in three weeks. Where moisture was received great good resulted, especially in reviving pastures and placing the soil in condition for planting. Corn cutting and tobacco housing are in progress, and the yield of both crops will be fair. April planting of corn turned out very well in some sections. The tomato and late potato crops have been greatly curtailed by the drought. Fodder has been saved in fine condition. Wheat seeding is practically suspended over a great part of the section until more rain falls. Winter apples are ripening prematurely and falling from the trees, although more favorable reports are received from Baltimore County, where they are plentiful.

\* \* \*

WEEK ENDING, *September 27, 1897.*

The weather during the past week has been cool, and light frosts have occurred over a greater portion of the State, with killing frost in the western and some of the central counties. Good rains on the 23d and 24th were general and beneficial, breaking a prolonged drought in many sections. Fall seeding is now well under way. Corn cutting is in progress, and the yield will be fair. Potatoes are mostly dug, and the yield will be slightly below the average. Tomatoes were improved by the rain. Tobacco is mostly housed. The buckwheat crop is being gathered, giving fairly good returns. Apples are falling badly; they are reported plentiful in some sections, scarce in others.

\* \* \*

**REVIEW OF THE CROP SEASON.**

At the close of the crop season of 1897 the correspondents of the Maryland and Delaware section were requested to give a brief summary of the weather and crop conditions during the season, and of the results of the harvest, in their respective sections. The replies received, as well as a review of the crop reports published from week to week, and of the weather reports published from month to month, mark the past season as, on the whole, one of the most prosperous in the past decade for the farmer. The general features of the weather in Maryland and Delaware may be described in a few words.

The season opened in March with the temperature considerably above the normal, sufficiently above in fact to keep the season temperature (reckoned from March 1) above the normal until the middle of June in spite of the fact that April was a little below and May and June much below the average temperature. From the middle of June to the middle of September the season temperature was steadily below normal, though there were some warm periods in July and some excessively hot days in the early part of September. The hottest day of the year occurred on the 10th of September, the thermometer recording 100° at Taneytown, and above 95° at several stations. The latter part of the summer was characterized by warm days with plenty of sunshine, and by cool nights. In March and April there was a deficiency of rainfall; in May an excess; in June a deficiency; in July the fall was more than double the normal for the month. The rains of July 26 and 27 were phenomenally large. At Jewell probably the heaviest rainfall on record in Maryland occurred at this time—14.75 inches in eighteen hours. In August the rainfall was slightly below the normal. A drought prevailed in most sections of the State from the middle of August to the 23d of September, when rain fell in considerable quantities throughout the two States. On the whole the rains were well distributed through the season, the only drought of consequence occurring after the most important crops had been harvested or were too far matured to be seriously damaged. Most staple crops were abundant in quantity and excellent in quality. The wheat, oats, and rye crops were exceptionally fine. The peach crop was on the whole below the average, though in some sections the yield was good, notably in Washington county and in the immediate vicinity of the Bay; these sections seemed to have escaped the killing frosts which occurred in the latter part of April. Corn has turned out fair. The hay crop was about normal, and pastures were unusually fine. The tobacco crop is excellent. Apples yielded a variable crop, abundant in some and scarce in other sections. The yield of potatoes and tomatoes was below normal. Grapes are abundant.

\* \* \*

**CLIMATOLOGY OF THE MONTH.****ATMOSPHERIC PRESSURE—IN INCHES AND HUNDREDTHS.**

Monthly mean at Washington, D. C., 30.17; at Baltimore, 30.15; average, 30.16; highest, 30.43 at Washington, on the 28th; lowest, 29.83 at Baltimore, on the 23d.

**TEMPERATURE—IN DEGREES FAHRENHEIT.**

The monthly mean (entire territory), 66.8, is 0.4 below the normal.

The highest monthly mean was 72.5, at Solomon's.

The lowest monthly mean was 57.6, at Deer Park.

The highest temperature recorded during the month was 100, at Taneytown, on the 11th.

The lowest temperature recorded during the month was 22, at Deer Park, on the 21st.

The greatest local monthly range was 70, at Flintstone.

The least local monthly range was 47, at Chestertown.

The greatest daily range was 48, at Flintstone, on the 5th and 6th.

The least daily range was 3, at Annapolis, on the 18th; at Cumberland, on the 17th, and at Frederick, on the 23d.

**PRECIPITATION—IN INCHES AND HUNDREDTHS.**

The monthly average (entire territory) 1.88, was 1.72 below the normal.

The greatest amount was 3.37, at Sunnyside.

The least amount was 0.50, at Solomon's.

The greatest amount in twenty-four hours was 2.17, at Sunnyside, on the 23d and 24th.

The average number of rainy days, 3.

**WIND.**

The prevailing direction was from the northwest.

The total movement was 2,908 miles, at Baltimore, and 3,894 miles, at Washington, D. C.

The maximum wind velocity was 28 miles per hour from the northwest, at Washington, D. C., on the 16th.

**MISCELLANEOUS.**

*Thunderstorms.*—Bachman's Valley, 16; Baltimore, 16, 17; Fallston, 2, 16; Frederick, 16; Green Spring Furnace, 2, 16; Jewell, 16; Millsboro, Del., 8; Mt. St. Mary's College, 16, 17; New Market, 16; Port Deposit, 2, 16; Sunnyside, 1, 16; Taneytown, 16.

*Lightning, distant.*—Cherryfields, 2, 16; Fallston, 19; Laurel, 16; Mardela Springs, 16, 20, 23; Smithsburg, 16; Solomon's, 17, 19.

*Frosts, light.*—Annapolis, 20; Bachman's Valley, 18, 21, 22, 29; Baltimore, 21, 28; Boeticherville, 21, 22; Charlotte Hall, 27; Chestertown, 21, 28; Easton, 28, 29; Green Spring Furnace, 21, 29; Laurel, 28, 29; Mardela Springs, 21, 28, 30; Maryland Agricultural College, 18, 19, 22, 29, 30; Millsboro, Del., 21, 28; New Market, 21, 28, 29; Princess Anne, 21; Smithsburg, 21, 28; Sunnyside, 18, 29; Van Bibber, 21, 28; Washington, 21, 28.

*Frosts, killing.*—Bachman's Valley, 28; Boeticherville, 28, 29; Flintstone, 21, 28; Grantsville, 21, 22, 28; Mardela Springs, 29; Sharpsburg, 21, 28; Sunnyside, 21, 22, 28.

*Fogs.*—Easton, 6, 7, 8, 9, 10, 11, 25; Green Spring Furnace, 4, 5; Laurel, 28; Mardela Springs, 6 to 15; Millsboro, Del., 8; Princess Anne, 6, 7, 8, 10, 11, 13; Taneytown, 9.

*Halo, solar.*—Jewell, 21.

*Halo lunar.*—Millsboro, Del., 12.

*Aurora.*—Millsboro, Del., 28.

\* \* \*

**REMARKS BY OBSERVERS.**

Rev. George L. Harig will take the place of Rev. H. M. Chapius as voluntary observer at St. Charles College.

Observations are to be resumed at Dover, Del.; under the direction of Prof. James Carrol, superintendent of public schools.

High tides prevailed at Cherryfields, on the 3d, 4th, 8th, 9th, 10th, 19th, 20th, 23d, 24th.—COL. J. E. COAD.

Heavy northwest winds prevailed at Annapolis on the 20th and northeast winds on the 22d and 23d.—J. E. ABBOTT.

Ice formed at Mardela Springs on the 18th. The past September has been the driest since 1891 in this section.—A. E. ACKWORTH.

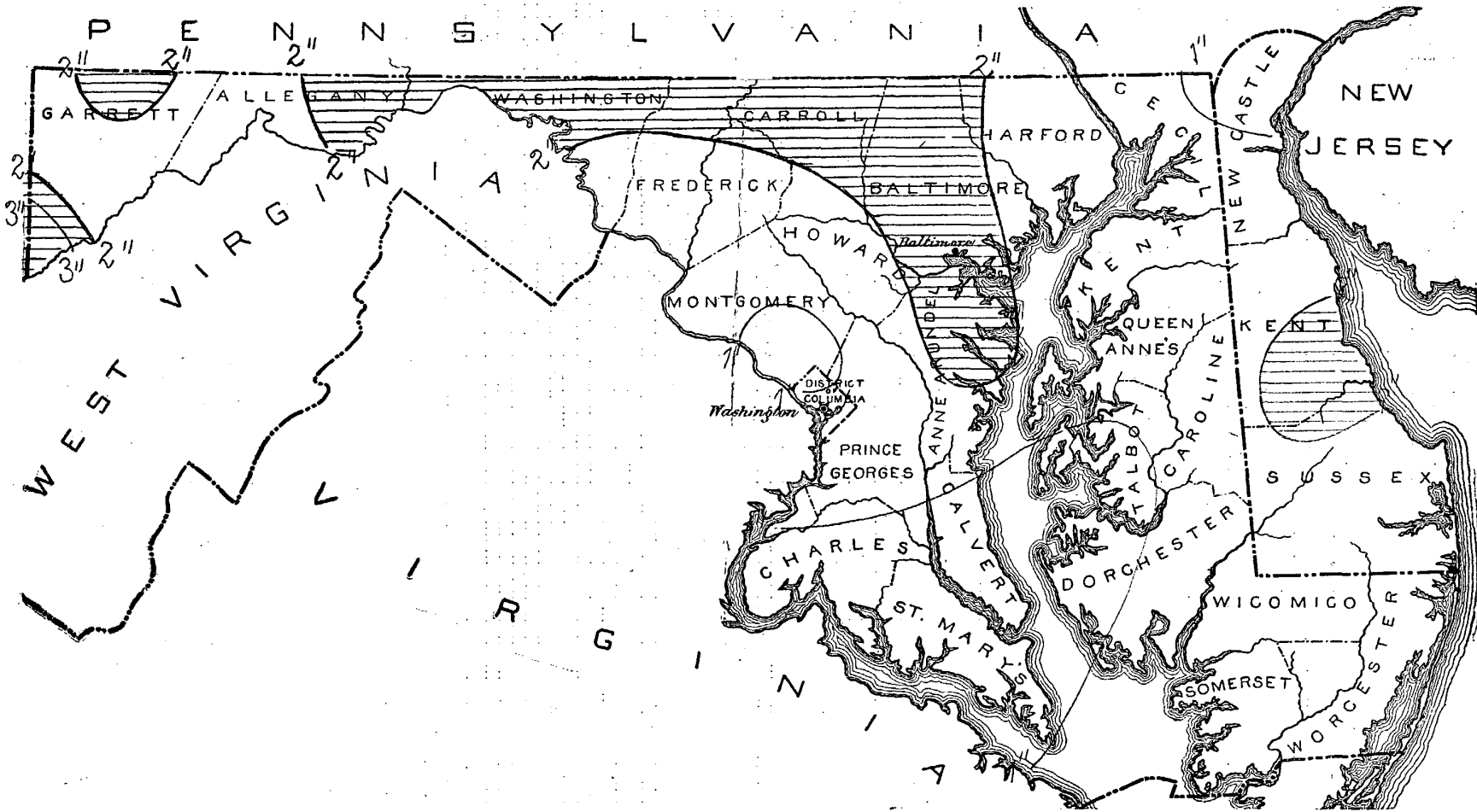
Climatological data for Maryland and Delaware, September, 1897.

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.		
<b>WESTERN MARYLAND.</b>																				
Boettcherville 2	Allegany	900	7	59.5	-6.7					1.50	-0.72	1.30		3						F. F. Brown.
Cumberland	do	650	38	69.0	-4.3	95	10	43	21	32	1.50	-1.21	1.12	0						Howard Shriver.
Deer Park	Garrett	2,457	6	57.6		87	16	22	21	45	1.67		1.00	2						S. P. Specht.
Flintstone	Allegany		2	63.5		98	16	28	21	43	2.24		1.50	3	23	6	1			N. T. Downs.
Grantsville	Garrett	2,100	4	61.9		92	16	29	28	43	2.27		1.54	4	23	7	1	w.		J. S. Miller.
Green Spring Furnace	Washington	500	5	66.5	-2.6	98	13	34	21	42	2.68		1.62	4	25	3	3	e.		E. G. Kinsell.
Hagerstown	do	550	6	67.9		95	11	38	28	40	2.48		1.75	2	23	2	2			Prof. C. E. Carl.
Sharpsburg	do	420	3	65.4		94	13	35	22	35	1.54		1.23	2	26	2	2			R. L. Hiberger.
Smithsburg	do			65.5		90	11	38	28	35	2.41		1.60	2	18	11	1	nw.		L. J. Bell.
Sunnyside	Garrett	2,440	5	60.4	-1.7	89	16	24	21	45	3.37		2.17	7	25	0	5	sw.		J. G. Knauer.
Westernport	Allegany	1,000	3	64.4		97	16	32	20	45	1.84		1.25	5						Prof. O. H. Bruce.
Average				63.8	-0.3					2.08	-0.73			4	23	5	2	var.		
<b>NORTHERN-CENTRAL MD.</b>																				
Bachman's Valley	Carroll		4	64.4		94	11	35	28	36	2.68		1.24	2	28	0	2	nw.		J. M. Myers.
Baltimore	Baltimore	123	63	68.8	+0.8	97	11	45	21	31	2.17	-1.66	1.42	4	22	6	2	n.		U.S. Weather Bureau.
Darlington Academy	Harford	300	3	67.5	+0.9	91	11	42	21	31	1.94	-1.85	1.09	2	24	4	2	nw.		Prof. A. F. Galbreath.
Fallston School	do	450	29	64.8	-0.4	91	11	40	21	29	1.40	-2.34	1.19	4	14	14	2	ne.		G. G. Curtiss, A. M.
Frederick	Frederick	250	25	66.9	+0.5	95	11	38	28	37	1.63	-2.09	1.37	2	21	6	3			McClintock Young.
Great Falls 3	Montgomery	150	9	68.2	-0.3	93	12	40	22	32	0.91	-2.94	0.47	2	2					Capt. D. D. Galliard.
Johns Hopkins Hospital	do	124	3	68.2		97	11	42	21	35	2.22		0.90	6	20	4	6	n. ne.		W. L. Woods.
McDonogh School	Baltimore	545	22	67.2	+2.0	91	11	42	21	30										S. H. Moore.
Mt. St. Mary's College	Frederick	720	37	68.0		95	11	40	21	37	2.65	-1.11	1.44	5	19	8	3	nw.		J. A. Mitchell, Ph. D.
New Market	do	550	14	67.0	+1.4	93	11	39	28	34	1.61	-2.60	1.32	2	23	4	3	nw.		H. H. Hopkins, M. D.
St. Charles College	Howard	300	3																	H. M. Chapuis, S. S.
Taneytown	Carroll		5			100	11				2.59		1.44	2	13	12	5	s.		Prof. H. Meier.
Van Bibber	Harford		2	66.1		92	11	41	27	33	1.22		0.90	4	25	2	3	sw.		H. A. Wroth.
Western Maryland Coll.	Carroll		2																	Prof. Roland Watts.
Woodstock College	Baltimore	392	28	65.5	+0.6	90	11	39	28	35	1.88	-1.91	1.15	4	24	4	2	nw.		T. J. A. Freeman, S. J.
Average				66.9	+0.8					1.86	-1.97			3	21	6	3	nw.		
<b>SOUTHERN MARYLAND.</b>																				
Annapolis	Anne Arundel	20	24	69.8		91	10	42	29	27	2.17	-1.78	1.90	3	24	4	2	n.		J. E. Abbott.
Charlotte Hall School	St. Mary's	167	4	69.4		92	11	43	21	32	0.95		0.95	1	22	6	2	nw.		J. F. Coad.
Cherryfields 2	do	20	4	69.4							0.58		0.48	4	19	7	4	ne.		Col. J. E. Coad.
Distributing Reservoir 3	Dist. of Columbia	120	7	68.6	0						0.92	-1.72	0.58	2	24	4	2	sw.		Captain Gaillard.
Jewell	Anne Arundel	168	16								1.37	-2.83	1.17	2	22					J. Plummer.
Laurel	Prince George's		3	67.0		95	11	35	28	42	1.55		1.55	1	20	8	2			Dr. T. M. Baldwin.
Md. Agricultural College	do	170	6	67.0	-2.8	97	10	36	29	46	1.78	-0.86	1.59							Prof. J. H. Patterson.
Receiving Reservoir 3	Dist. of Columbia	160	7	68.3	+1.3						0.98	-1.66	0.53	2						Captain Gaillard.
Solomon's	Calvert	20	6	72.5	+0.3	94	13	47	21	30	0.50	-1.25	0.50	1	20	4	6	se.		W. H. Marsh, M. D.
Washington	Dist. of Columbia	112	27	68.2	+0.5	97	11	42	28	38	1.54	-2.15	1.26	3	19	8	3	n.		U.S. Weather Bureau.
Average				68.9	-0.1					1.23	-2.46			2	21	6	3	n.		
<b>EASTERN MARYLAND.</b>																				
Chestertown	Kent	80	13	69.9	+1.7	90	11	43	28	24	1.28	-2.28	0.45	4	21	6	3	s.		Hon. M. de K. Smith.
Denton	Caroline	42	8																	F. C. Ramsdell.
Easton	Talbot	35	8	67.8	-1.3	93	11	39	28	34	0.73	-1.87	0.62	4	23	5	2	w.		Henry Shreve.
Mardela Springs	Wicomico	25	10	69.7	+1.4	95	11	42	29	37	1.17	-2.11	0.68	2	22	4	4	ne.		A. E. Acworth.
Pocomoke City	Worcester	37	4																	R. M. Stevenson.
Port Deposit	Cecil			67.4		93	10	43	28	30	1.45		0.80	5	19	2	9	nw.		A. L. Lamb.
Princess Anne	Somerset	20	23	66.9	-3.1	91	11	38	29	36	1.25		1.25	1	12	17	1	sw.		J. R. Stewart.
Average				68.3	-0.1					1.18	-2.10			3	19	7	4	var.		
<b>DELAWARE.</b>																				
Dover	Kent	40	21																	J. S. Jester.
Kirkwood 1	Newcastle		1	65.6																J. S. Carnagy.
Milford	Kent		18	71.4		97	11	45	28	33	2.55		2.15	2	27	0	3	nw.		J. Y. Foulk.
Millsboro	Sussex		5	67.4	-2.0	94	12	42	21	28	1.51	-2.78	1.30	3	24	2	4	n. ne.		Rev. L. W. Wells.
Newark (Delaware Coll.)	Newcastle		4	66.0		94	11	40	28	37	0.99		0.37	3	22	3	5	w. sw.		Prof. W. H. Bishop.
Seaford	Sussex		7	69.0		95	10	42	21	35	1.16		0.84							H. L. Wallace.
Average				67.9	-0.7					1.55	-2.26			3	24	2	4	var.		
General average				66.8	-0.4					1.88	-1.72			3	21	6	3	nw.		

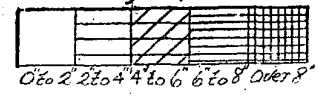
1 Mean of 7 a.m. + 2 p.m. + 9 p.m. + 4.  
 2 Mean of 8 a.m. + 8 p.m. + 2.  
 3 Mean of 7 a.m. + 2 p.m. + 2.



TOTAL PRECIPITATION, SEPTEMBER, 1897.



Scale of Shades.



Daily precipitation for Maryland and Delaware, September, 1897.

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.....	.10															.10		†					1.30											
Cumberland.....		.17														.05							.10	.90	.22									
Deer Park.....															.67									1.00										
Flintstone.....																	.74		†					1.25	.25									
Grantsville.....		.28														.40								1.54										
Green Spring Furnace.....		.10															.36							1.62										
Hagerstown.....																	.73							1.75										
Sharpsburg.....																	.26							1.28										
Smithsburg.....	.04										.01						.76							1.60										
Sunnyside.....		.32															.76							2.05	.12									
Westernport.....	.12															.42			.03					1.25	.02									
NORTHERN-CENTRAL MARYLAND.																																		
Bachman's Valley.....																.84								1.24										
Baltimore.....		.04									†						.71						†	1.40	.02									
Darlington Academy.....																1.09								.85										
Fallston School.....		.01									†						.20							1.19										
Frederick.....																	.26							1.37										
Great Falls.....																								.44	.47									
Johns Hopkins Hospital.....		.05	.11														.76	.02						.38	.90									
McDonogh School.....																	.40	.65																
Mt. St. Mary's College.....			.03														.29							1.44	.13									
New Market.....											†													1.32										
St. Charles College.....																																		
Taneytown.....																	1.15																	
Van Bibber.....		.02															.30							.90										
Western Maryland College.....																																		
Woodstock College.....		.03															.15								.55	1.15								
SOUTHERN MARYLAND.																																		
Annapolis.....		.07						†																1.90										
Charlotte Hall School.....											†													.95										
Cherryfields.....		.02	†															.03						.05	.48									
Distributing Reservoir, D. C.....																									.34	.58								
Jewell.....			†																						1.17									
Laurel.....																									1.55									
Maryland Agricultural College.....																																		
Receiving Reservoir, D. C.....																									.45	.53								
Solomon's.....			†																						.50									
Washington, D. C.....																	.26								1.26	.02								
EASTERN MARYLAND.																																		
Chestertown.....	.11															.42								.30	.45									
Denton.....																																		
Easton.....																	.08	.03								.62								
Mardela Springs.....																									1.17									
Pocomoke City.....																																		
Port Deposit.....		.05															.80								.25	.35								
Princess Anne.....																									1.25									
DELAWARE.																																		
Dover.....																																		
Kirkwood.....																																		
Milford.....																	.41								2.15									
Millsboro.....							.04										.11								1.26									
Newark (Delaware College).....																	.17								.45	.37								
Seaford.....																									.84	.32								

† Trace, when precipitation is less than 0.01 inch.