U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR FEBRUARY, 1897.

MARYLAND AND DELAWARE SECTION

OF THE

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

IN COOPERATION WITH THE

MARYLAND STATE WEATHER SERVICE.

PREPARED UNDER THE DIRECTION OF

WILLIS L. MOORE,

CHIEF OF BUREAU.

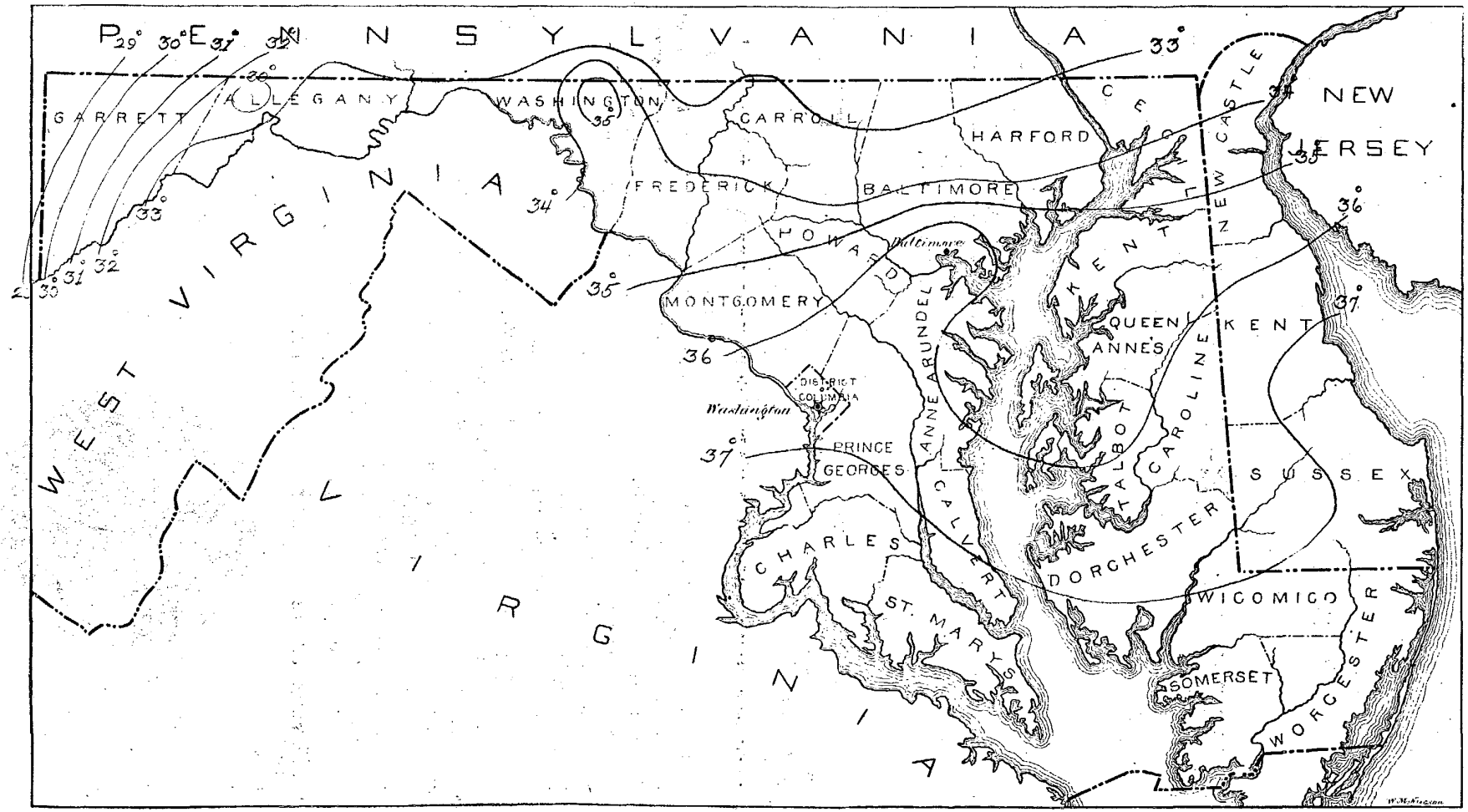
BY

GEORGE E. HUNT,

LOCAL FORECAST OFFICIAL AND SECTION DIRECTOR,

JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

MONTHLY MEAN ISOTHERMS, FEBRUARY, 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.

GEORGE E. HUNT, Section Director,

BALTIMORE, MD.

VOL. II. BALTIMORE, MD. No. 2.

POSSIBILITIES IN COTTON.

The February number of the "Southern States Magazine," published at Baltimore, contains two conspicuously able and noteworthy articles from the authoritative pen of Dr. Charles W. Dabney, jr., Assistant Secretary of Agriculture. They deal with practical questions, the utilization of cottonseed and the prospects and possibilities of the crop for the next twenty-five years. The extent to which the seed might be used is manifest in the statement, based upon scientific calculations, that, properly handled, the seed of the crop of 1896 ought to yield in round numbers $100,000,000, instead of $53,000,000, which may be expected. At present the seed are used as feed, fertilizer, and fuel, in addition to oil producers, and a secondary product of feed and fuel is a fertilizer. There may not be at present a sufficient number of mills and of cattle to turn all the seed into cash, but there should be an impetus to greater efforts in that direction in a consideration of the potential value of the cottonseed crop. This is reckoned at $94,239,392 after deducting 10 per cent. for loss and seeding. The total is derived from $41,750,000 in oil, $3,100,000 in linters, $36,056,765 in hulls and meal made into live weight of cattle, and $13,332,627 in manurial value of hulls. An increase of $40,000,000 and more in the total value of the cotton crop without increasing the size of that crop is a possibility worth considering by the farmer. Its importance during the next twenty-five years will become greater and greater as the demand for cotton naturally expands. This will amount to 20,000,000 bales by 1920, Dr. Dabney reckons. And he shows that the South ought to be able to produce it if the force of laborers is developed proportionally. Of the 550,000 square miles in the cotton regions, but 50 per cent. is in farms, but 20 per cent. is improved, and only 5 per cent. in cotton. There is room, therefore, for expansion to meet the demand without trenching upon the land that ought to make each planter practically independent of his cotton for a living, and without reference to the economy arising from a steady advance in the improvements in methods of cultivation. In the last 100 years the total production of cotton was worth $15,000,000,000, exceeded only by that of corn. Its value in the next century will reach figures that hardly may be realized. These two articles are comprehensive in treatment, and form a storehouse of information of practical value to the Southern agriculturist and the student of Southern conditions. The facts are startling, the suggestions novel, and their publication will attract wide attention. Supplementary to Dr. Dabney's articles, and appealing with the logic of accurate figures to the Western farmers casting about for a competency, is the article on "Cotton-Growing vs. Wheat-Growing." In it are compared the costs of raising an acre of wheat and one of cotton, and the results of the sales of the products in 1894, a minimum year for both wheat and cotton. The conclusions derived from official reports of the Department of Agriculture are most suggestive. The average loss per acre on wheat was $5.53, and in Kansas, where it was grown cheaper than any other place in the country, $2.88. On the other hand, the average profit per acre in cotton in the worst years we have had was $2.48, and in 1895 it was $5.23. This particular advantage, when considered in connection with the cheaper land, the cheaper labor, and the more genial climate, ought to leave no doubt in the Westerner's mind about the place where his profit lieth.

* * *

CLIMATOLOGY OF THE MONTH.

The temperature record in Maryland and Delaware Section for February, 1897, was two degrees above normal figures, thereby restoring the deficiency for the preceding month and giving just about the normal degree of heat for the year, to to date. The transitions from hot to cold, and the converse, were gradual, and not at all severe at any time. The warmest period was the 17th to 21st, while the 1st, and from the 26th to 28th, were the dates on which the lowest temperatures were generally recorded.

The average precipitation for the month was over two inches in excess of the usual fall recorded for February, and more than made up for the January shortage. The 4th was the only date on which no precipitation was reported within the sectional limits, although the amounts were generally very light on the 1st, 9th to 11th, 13th to 19th, 25th, and 28th. Heavy falls occurred on the 2d, 6th, and 21st to 23d; some local damage was caused by washouts on the 6th and 23d, and high water stages were reported in all streams on the latter date.

The average depth of snowfall for the month, in Delaware and Eastern Maryland, was between two and three inches, while at stations in the extreme western districts the total of the monthly measurements ranged from ten to thirty-one inches, the last named depth being reported from Grantsville, where the voluntary observer states that sledding was good during the greater portion of the month.

Hail fell in various portions of the Section on the 2d, 5th, 6th, 7th, 11th, and 12th, and sleet on the 2d, 3d, 5th, 11th, 12th, and 20th.

Light local thunderstorms were reported at a few stations on the 15th and 21st, and thunderstorms were general over the entire Section on the 22d.

ATMOSPHERIC PRESSURE—IN INCHES AND HUNDREDTHS.

Monthly mean at Washington, D. C., 30.10; at Baltimore, 30.11; average, 30.10; highest, 30.69 at Washington on the 28th; lowest, 29.55 at Washington on the 2d.

TEMPERATURE—IN DEGREES FAHRENHEIT.

The monthly mean (entire territory), 34°.8, was 2°.0 above the normal.

The highest monthly mean was 37°.5, at Cumberland (1).

The lowest monthly mean was 29°.0, at Grantsville.

The highest temperature recorded during the month was 63°, at Charlotte Hall and Washington, on the 17th.

The lowest temperature recorded during the month was 0°, at Flintstone, on the 1st.

The greatest local monthly range was 58°, at Flintstone.

The least local monthly range was 34°, at St. Charles College.

The greatest daily range was 46°, at Bachman's Valley, on the 5th.

The least daily range was 0°, at Sunnyside, on the 23d.

PRECIPITATION—IN INCHES AND HUNDREDTHS.

The monthly average (entire territory) 5.43, was 2.32 above the normal.

The greatest amount was 9.17, at Sunnyside.

The least amount was 3.53, at Mt. St. Mary's College.

The greatest amount in twenty-four hours was 2.70, at Cumberland, on the 22d–23d.

The average number of rainy days, 10.

WIND.

The prevailing direction was from the northwest.

The total movement was 3,840 miles, at Baltimore, and 5,002 miles, at Washington, D. C.

The maximum wind velocity was 36 miles per hour from the north, at Washington, D. C., on the 3d.

MISCELLANEOUS PHENOMENA.

Thunderstorms.—At Grantsville, on the 22d; at Sharpsburg, on the 22d; at Sunnyside, on the 15th and 21st; at Bachman's Valley, on the 22d; at Baltimore, on 22d; at Fallston, on the 22d; at Frederick, on the 22d; at New Market, on the 22d; at St. Charles College, on the 22d; at Taneytown, on the 21st; at Van Bibber, on the 22d; at Western Maryland College, on the 22d; at Woodstock College, on the 22d; at Charlotte Hall, on the 22d; at Cherryfields, on the 15th and 22d; at Jewell, on the 22d; at Laurel, on the 22d; at Maryland Agricultural College, on the 22d; at Solomon's, on the 22d; at Mardela Springs, on the 21st and 22d; at Princess Anne, on the 22d; at Milford, on the 22d; at Newark, on the 22d; at Seaford, on the 22d.

Hail.—At Grantsville, on the 7th and 12th; at Bachman's Valley, on the 2d and 5th; at Johns Hopkins Hospital, on the 12th; at Mt. St. Mary's College, on 12th; at New Market, on the 2d; at St. Charles College, on the 12th; at Taneytown, on the 2d and 5th; at Woodstock College, on the 2d, 6th, and 12th; at Annapolis, on the 2d; at Chestertown, on the 2d and 11th.

Sleet.—At Green Spring Furnace, an the 2d and 5th; at Sharpsburg, on the 2d, 12th, and 20th; at Sunnyside, on the 12th; at Baltimore, on the 5th, 6th, and 12th; at Mt. St. Mary's College, on the 12th and 20th; at St. Charles College, on the 12th; at Taneytown, on the 2d; at Western Maryland College, on the 2d and 20th; at Woodstock College, on the 2d and 12th; at Annapolis, on the 2d, 3d, 12th, and 20th; at Charlotte Hall, on the 12th; at Jewell, on the 12th; at Laurel, on the 12th; at Chestertown, on the 2d and 11th.

Frosts, light.—At Woodstock College, on the 10th, 11th, 13th, 17th, 19th, and 25th; at Cherryfields, on the 8th and 17th; at Princess Anne, on the 15th, 24th, and 26th.

Frosts, heavy.—At Mt. St. Mary's College, on the 1st; at Cherryfields, on the 10th and 14th.

Frosts, killing.—At Sharpsburg, on the 1st, and 10th; at Woodstock College, on the 1st, 4th, 5th, 27th, and 28th; at Mardela Springs, on the 1st, 5th, 7th, 10th, 13th, 14th, and 26th; at Princess Anne, on the 8th, 9th, 10th, 14th, 17th, and 20th.

Fogs.—At Bachman's Valley, on the 6th and 14th; at Baltimore, on the 6th; at Cherryfields, on the 14th and 15th; at Jewell, on the 6th, 8th, and 14th.

Halos, solar.—At Green Spring Furnace, on the 5th, at 11 a. m., and on the 15th, in the afternoon.

* * *

REMARKS BY OBSERVERS.

Cumberland, Mr. Howard Shriver.—Heavy rains on the 22d and 23d; canal bank immediately below the canal dam badly eaten away by the whirl of water, which at one time menaced the lower part of the city. Railroad badly damaged east and west of here, trains being unable to pass the submerged tracks.

Grantsville, Mr. J. S. Miller.—Good sledding greater part of the month. Grain well protected.

Green Spring Furnace, Prof. E. G. Kinsell.—Potomac rose rapidly on the 22d, and was out of banks on the 23d.

New Market, Dr. H. H. Hopkins.—Purple Grackle, or crow blackbird—*quiscalus*—appeared on the 20th.

Van Bibber, Mr. H. A. Wroth.—Thunderstorm on the 22d, first of the season; did not last long, but was severe.

Cherryfields, Col. J. Edwin Coad.—Strong northeast wind on the 2d; high tides on the 2d, 4th, and 5th; stormy on the 6th.

Laurel, Dr. T. M. Baldwin.—Strong winds on the 2d and 6th.

* * *

LECTURE BY PROF. WILLIS L. MOORE.

The last of the recent series of lectures on scientific subjects at the Peabody Institute, was one on Weather Forecasting, by Prof. Willis L. Moore, Chief of the United States Weather Bureau. His address was illustrated with stereopticon views of noted storms, hurricanes, tornadoes, and the various meteorological appliances used by the Service in taking observations, recording data, etc. It was a matter of pride to the representative of the Service here and his assistants that the lecture was not only one of the most interesting, but by far the best attended of the course.

Climatological data for Maryland and Delaware, February, 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.		
WESTERN MARYLAND.																				
Boettcherville*2	Allegany	900	7	29.8	—0.5	40	18	4	1	.....	4.50	+1.47	2.30	13.0	7	.....	.....	.....	.....	F. F. Brown.
Cumberland No. 1	do	650	38	37.5	.....	61	21	13	1	30	5.81	+2.95	2.70	15.0	9	.....	.....	.....	.....	Shriver & Rizer.
Cumberland No. 2	do	650	27	33.8	+1.0	56	21	7	1	28	5.82	+3.16	1.80	.....	6	6	8	14	.....	Webster Bruce.
Deer Park	Garrett	2,457	6	.....	.....	.....	.....	3	27	.....	4.20	.....	1.63	4.0	7	.....	.....	.....	.....	S. P. Specht.
Flintstone	Allegany	.....	2	33.1	.....	58	17	0	1	38	5.63	.....	1.88	6.5	7	5	8	15	.....	N. T. Downs.
Grantsville	Garrett	2,100	4	29.0	.....	57	21	3	27	34	7.53	.....	1.60	31.0	12	3	7	18	s.	J. S. Miller.
Green Spring Furnace	Washington	500	5	33.2	+2.6	53	21	4	1	28	4.78	.....	1.30	9.6	8	10	8	10	e.	E. G. Kinsell.
Hagerstown	do	550	6	35.6	.....	55	22	13	27	24	6.17	.....	1.50	9.5	8	12	0	16	.....	Prof. C. E. Carl.
Sharpsburg	do	420	3	33.7	.....	54	17	9	1	27	5.17	.....	1.42	4.4	9	14	4	10	.....	R. L. Hiberger.
Sunnyside	Garrett	2,440	5	29.4	+7.4	59	21	4	27	36	9.17	+5.27	1.93	23.5	17	6	0	22	sw.	J. G. Knauer.
Westernport	Allegany	1,000	3	33.0	.....	60	17	9	1	35	4.86	.....	1.63	9.2	9	.....	.....	.....	.....	Prof. O. H. Bruce.
Average		.....	.....	32.8	+2.6	.....	.....	.....	.....	.....	5.79	+3.21	.....	12.6	9	8	5	15	s.	
NORTHERN-CENTRAL MD.																				
Bachman's Valley	Carroll	.....	4	31.8	.....	53	5	2	27	46	7.18	.....	2.60	15.2	9	12	4	12	nw.	J. M. Myers.
Baltimore	Baltimore	123	63	36.8	—0.2	56	17	18	11	22	5.13	+1.63	1.70	0.7	13	7	5	16	w.	U.S. Weather Bureau.
Darlington Academy	Harford	300	8	33.4	+5.4	53	18	11	1	25	4.20	+1.48	1.28	3.5	7	11	6	11	nw.	Prof. A. F. Galbreath.
Fallston School*1	do	450	29	33.6	+1.3	51	21	17	5	.....	5.64	+2.04	1.80	7.0	11	4	15	9	n.	G. G. Curtis, A. M.
Frederick	Frederick	250	25	34.3	+1.6	51	18	9	27	31	4.77	+1.99	2.00	9.2	7	7	11	10	.....	McClintock Young.
Great Falls*3	Montgomery	150	9	36.0	+3.3	55	17	17	1	.....	5.71	+3.37	1.50	.....	11	.....	.....	.....	.....	Capt. D. D. Gaillard.
Johns Hopkins Hospital	.....	124	3	35.2	.....	56	17	15	1	28	5.38	.....	1.20	.....	13	9	2	17	n.	W. L. Woods.
McDonogh School	Baltimore	545	22	33.7	+0.3	51	17	15	5	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	S. H. Moore.
Mt. St. Mary's College	Frederick	720	37	32.9	.....	52	18	13	28	25	3.53	+0.47	1.09	5.5	11	.....	.....	.....	nw.	J. A. Mitchell, Ph. D.
New Market	do	550	14	34.2	+1.5	54	17	10	1	29	5.99	+3.67	1.76	8.8	9	7	7	14	w.	H. H. Hopkins, M. D.
St. Charles College	Howard	300	3	35.8	.....	54	14	20	1	26	5.84	.....	1.94	7.0	7	13	5	10	nw.	H. M. Chapuis, S. S.
Taneytown	Carroll	.....	5	33.3	.....	55	21	7	27	32	4.47	.....	1.30	13.7	8	8	5	15	nw.	Prof. H. Meier.
Van Bibber	Harford	.....	2	33.5	.....	53	18	16	27	21	5.57	.....	1.40	.....	9	9	7	12	sw.	H. A. Wroth.
Western Maryland Coll.	Carroll	.....	3	34.4	.....	57	21	15	26	25	5.16	.....	1.76	9.5	7	12	7	9	.....	Prof. Roland Watts.
Woodstock College	Baltimore	392	28	34.4	+1.6	61	17	5	1	38	5.51	+2.19	1.20	1.2	11	11	6	11	nw.	T. J. A. Freeman, S. J.
Average		.....	.....	34.2	+1.8	.....	.....	.....	.....	.....	5.29	+2.10	.....	7.4	10	9	7	12	nw.	
SOUTHERN MARYLAND.																				
Annapolis	Anne Arundel	20	24	39.4	.....	59	7	24	1	23	4.68	+1.19	1.15	7.0	10	12	3	13	nw.	J. E. Abbott.
Charlotte Hall School	St. Mary's	167	4	37.4	.....	63	17	16	1	32	5.03	.....	1.60	7.0	9	12	9	7	ne.	J. F. Coad.
Cherryfields*2	do	20	4	36.4	.....	50	18	24	27	.....	5.59	.....	1.65	3.0	13	7	14	7	ne.	Col. J. E. Coad.
Distributing Reservoir*3	Dist. of Columbia	120	7	37.0	+4.0	55	17	18	1	.....	5.84	+3.41	1.50	.....	12	.....	.....	.....	.....	Captain Gaillard.
Jewell	Anne Arundel	165	10	35.2	+1.0	61	17	12	1	31	5.25	+1.98	1.73	2.0	8	10	6	12	nw.	J. Plummer.
Laurel	Prince George's	.....	3	36.2	.....	58	17	14	28	31	5.51	.....	1.50	5.5	8	10	8	10	.....	Dr. T. M. Baldwin.
Md. Agricultural College	do	170	6	34.2	+0.1	60	17	10	1	34	6.11	+2.35	1.65	1.0	9	.....	.....	.....	.....	Prof. J. H. Patterson.
Receiving Reservoir*3	Dist. of Columbia	160	7	36.3	+4.1	53	17	17	1	.....	5.89	+3.63	1.38	.....	12	.....	.....	.....	.....	Captain Gaillard.
Solomon's	Calvert	20	6	37.4	+1.2	59	17	19	1	28	5.51	+2.04	1.93	6.0	14	7	3	18	nw.	W. H. Marsh, M. D.
Washington	Dist. of Columbia	112	27	36.4	+0.3	63	17	12	1	32	6.47	+3.10	2.11	.....	14	9	2	17	n.	U.S. Weather Bureau.
Average		.....	.....	36.7	+1.8	.....	.....	.....	.....	.....	5.59	+2.53	.....	4.5	11	10	6	12	nw.	
EASTERN MARYLAND.																				
Chestertown	Kent	80	13	35.6	+3.5	56	19	11	27	26	4.22	+2.41	0.82	4.5	11	11	9	8	n.	Hon. M. de K. Smith.
Denton	Caroline	42	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	F. C. Ramsdell.
Easton	Talbot	35	8	35.4	+0.9	56	18	15	1	33	5.47	+2.24	1.92	4.0	9	11	6	11	n.	Henry Shreve.
Mardela Springs	Wicomico	25	10	36.8	+0.6	57	17	13	1	31	5.14	+1.31	1.69	4.2	12	7	13	8	nw.	A. E. Acworth.
Pocomoke City	Worcester	37	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. M. Stevenson.
Princess Anne	Somerset	20	23	37.2	—1.8	62	18	16	1	33	4.72	.....	1.10	2.5	12	9	6	13	nw.	J. R. Stewart.
Average		.....	.....	36.2	+1.0	.....	.....	.....	.....	.....	4.89	+1.99	.....	3.8	11	10	8	10	nw.	
DELAWARE.																				
Dover	Kent	40	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. S. Jester.
Kirkwood*1	Newcastle	.....	1	.....	.....	50	14	16	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	nw.	William Carnagy.
Milford	Kent	.....	18	37.2	+3.0	58	14	11	1	33	5.56	+1.15	2.12	0.8	9	18	1	9	ne.	J. Y. Foulk.
Millsboro	Sussex	.....	5	37.0	+4.9	59	19	13	1	28	5.82	+2.05	1.78	4.0	12	12	5	11	n.	Rev. L. W. Wells.
Newark (Delaware Coll.)	Newcastle	.....	4	33.2	.....	51	18	10	1	28	4.30	.....	1.54	3.5	9	7	11	10	nw.	Prof. W. H. Bishop.
Seaford	Sussex	.....	7	36.6	+3.0	57	18	14	1	28	4.79	+1.51	1.59	2.5	10	.....	.....	.....	.....	H. L. Wallace.
Average		.....	.....	36.0	+3.6	.....	.....	.....	.....	.....	5.12	+1.57	.....	2.7	10	12	6	10	nw.	
General average		.....	.....	34.8	+2.0	.....	.....	.....	.....	.....	5.43	+2.32	.....	7.3	10	9	7	12	nw.	

* Extremes of temperature from observed readings of dry thermometer.

1 Mean of 7 a. m. + 2 p. m. + 9 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.

Maximum and minimum temperatures for Maryland and Delaware, February, 1897.

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.
WESTERN MARYLAND.																																																																	
Boettcherville *2	30	4	34	30	32	30	24	24	28	18	38	38	36	36	38	35	30	30	30	26	31	24	35	30	32	32	32	20	36	30	30	28	36	24	40	38	30	30	38	28	34	32	38	38	36	32	28	25	36	26	24	24	18	12	31	15	..	..	..	..	..	..	.....	.....
Cumberland (1)	38	13	42	34	44	35	45	30	42	36	48	38	46	43	44	39	41	35	38	29	35	25	39	31	45	29	53	24	45	32	41	30	56	26	47	34	40	30	41	29	61	39	44	43	44	39	47	29	50	30	39	29	31	18	44	22	..	..	..	..	..	..	43.9	31.1
Cumberland (2)	32	7	32	10	39	32	38	26	35	22	44	25	42	31	42	30	37	32	38	28	35	28	38	28	42	28	54	20	44	27	42	34	48	29	49	36	41	32	38	30	56	32	46	38	40	38	40	26	45	25	33	25	26	15	38	15	..	..	..	..	..	..	40.5	27.0
Deer Park	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Flintstone	32	0	37	27	40	30	36	12	34	10	44	28	44	34	40	32	40	30	36	26	34	20	40	26	44	30	55	17	53	27	43	31	58	20	50	30	42	28	44	22	58	28	47	35	42	32	39	21	44	28	40	22	30	14	39	9	..	..	..	..	..	..	42.3	23.9
Grantsville	38	4	35	25	33	22	34	20	30	16	41	23	35	30	38	28	28	22	39	21	28	11	38	22	47	22	51	28	40	25	35	25	53	23	37	25	46	22	32	19	57	31	40	34	35	25	35	14	40	17	24	18	21	3	35	4	..	..	..	..	..	..	37.3	20.7
Green Spring Furnace	32	4	35	29	40	30	37	18	36	16	46	36	46	37	40	31	38	31	36	18	36	25	39	27	41	29	44	19	48	25	43	33	52	25	51	30	43	27	34	27	53	32	45	34	43	33	40	25	42	25	44	25	27	11	35	14	..	..	..	..	..	..	40.9	25.6
Hagerstown	34	14	34	30	40	30	39	25	37	20	48	32	47	39	40	35	40	34	36	27	37	29	31	28	40	31	48	24	48	31	43	35	53	31	50	40	41	29	50	28	52	38	55	40	43	34	42	26	46	29	44	24	28	13	36	17	..	..	..	..	..	..	42.2	29.0
Sharpsburg	32	9	34	29	39	30	38	22	34	23	48	29	45	37	37	32	37	32	37	25	33	29	36	29	39	30	51	24	45	30	42	32	54	29	47	34	42	29	34	27	54	31	38	35	45	33	40	26	43	28	29	25	28	13	36	17	..	..	..	..	..	..	39.9	27.5
Sunnyside	42	6	32	22	31	24	32	22	31	18	39	23	33	30	37	27	28	22	40	18	34	11	37	18	40	29	50	21	49	24	34	27	54	23	41	32	33	20	42	21	59	42	57	35	29	29	34	14	38	16	27	19	17	4	29	4	..	..	..	..	..	..	37.5	21.4
Westernport	33	9	37	25	35	29	37	16	37	19	42	34	41	33	40	30	36	26	38	21	35	24	39	31	42	21	55	28	45	31	41	24	60	25	51	29	41	26	39	32	56	37	41	35	40	21	39	22	45	26	35	13	24	14	40	22	..	..	..	..	..	..	40.9	25.1
NORTHERN-CENTRAL MARYLAND.																																																																
Bachman's Valley	32	5	34	28	35	27	34	16	53	7	45	28	45	34	38	31	35	28	35	22	32	25	34	19	46	19	42	28	40	30	49	25	50	35	40	28	44	38	39	23	52	31	44	34	43	33	36	25	42	26	33	21	24	2	32	8	..	..	..	..	..	..	39.6	24.0
Baltimore	37	18	38	33	40	32	37	27	35	21	50	32	50	40	41	34	40	31	39	30	35	30	35	29	43	29	51	30	47	36	46	34	56	34	56	41	45	34	38	29	54	33	43	36	49	37	41	31	45	33	36	27	29	21	37	22	..	..	..	..	..	..	42.6	30.9
Darlington Academy	34	11	36	29	38	31	34	25	35	14	49	30	48	35	36	30	37	31	38	26	35	25	30	25	40	21	45	21	45	30	44	31	50	29	53	38	43	31	35	23	53	33	43	35	48	34	38	28	41	27	35	23	31	15	36	11	..	..	..	..	..	..	40.4	26.5
Fallston School *1	36	31	35	32	35	29	32	23	36	17	47	38	45	34	37	33	36	31	37	28	35	27	33	27	36	27	46	30	46	36	41	31	48	32	46	39	39	31	36	30	51	34	39	35	46	34	37	28	39	29	32	26	27	18	35	25	..	..	..	..	..	..	.....	.....
Frederick	35	11	34	28	42	32	38	25	35	20	49	31	46	40	37	34	37	34	39	27	35	31	35	28	41	30	47	20	45	30	44	35	50	31	51	35	42	32	37	28	54	23	40	36	45	34	42	28	46	28	31	29	28	9	29	19	..	..	..	..	..	..	40.5	28.1
Great Falls *3	36	17	37	37	38	33	36	29	36	20	49	40	46	42	37	32	38	35	38	26	35	31	32	32	40	33	52	30	49	32	43	40	55	32	49	38	41	33	33	29	46	36	40	38	46	37	38	32	41	30	36	30	25	20	34	24	..	..	..	..	..	..	31.7	40.2
Johns Hopkins Hospital	36	15	39	32	42	21	37	25	39	21	50	23	50	37	38	32	38	32	38	26	31	26	36	27	43	25	52	25	48	30	46	31	56	31	56	32	44	31	54	26	52	33	41	28	50	35	41	29	45	29	36	30	28	18	37	19	..	..	..	..	..	..	43.0	27.5
McDonogh School	35	16	36	31	36	29	36	23	35	15	47	31	46	39	38	34	36	30	37	26	36	27	35	28	..	..	43	24	46	33	43	34	51	33	48	41	..	..	36	27	48	33	..	..	38	35	37	30	40	30	32	25	26	18	34	18	..	..	..	..	..	..	39.0	28.4
Mt. St. Mary's College	36	15	44	31	40	28	40	21	30	15	45	28	47	31	40	32	39	31	35	24	33	24	33	24	37	25	44	19	43	33	42	31	49	28	52	38	44	27	36	25	47	31	42	33	43	32	38	24	42	25	40	20	25	14	33	13	..	..	..	..	..	..	40.0	25.8
New Market	35	10	33	30	38	29	35	20	36	15	47	30	44	39	42	33	36	32	36	25	35	29	34	27	39	29	50	21	46	30	44	34	54	29	50	41	42	29	35	26	53	32	38	35	43	33	46	40	44	28	42	26	27	11	35	15	..	..	..	..	..	..	40.7	27.8
St. Charles College	34	20	36	34	42	31	41	27	34	22	48	38	48	38	41	31	38	31	42	30	33	25	34	30	43	30	54	28	43	34	45	35	53	30	48	42	46	31	38	30	50	30	38	34	46	34	41	30	42	30	38	30	30	21	32	22	..	..	..	..	..	..	41.4	30.3
Taneytown (Milton Academy)	35	9	33	28	41	28	40	19	38	10	45	29	46	36	36	33	39	31	42	25	36	24	35	25	43	24	49	17	45	28	44	32	50	28	47	41	45	28	35	25	55	30	43	33	46	32	41	25	46	26	29	26	32	7	36	14	..	..	..	..	..	..	41.1	25.5
Van Bibber	35	17	37	31	38	26	34	17	37	17	49	35	47	29	37	30	38	26	38	26	36	28	35	21	41	21	43	32	47	35	43	28	49	31	53	32	41	24	36	26	50	35	39	35	48	30	38	27	42	28	36	19	29	16	35	24	..	..	..	..	..	..	40.4	26.6
Western Maryland College	38	31	40	27	36	22	37	18	40	22	45	37	43	34	37	31	35	27	36	26	37	27	36	26	50	25	50	32	48	35	52	32	55	44	50	29	40	28	37	31	57	35	40	32	40	25	37	25	43	25	30	15	24	15	34	19	..	..	..	..	..	..	41.0	27.7
Woodstock College	39	5	37	14	37	30	35	23	43	14	52	14	47	38	38	30	41	31	42	23	39	25	43	26	39	29	57	22	48	29	46	32	61	29	55	33	44	31	38	23	57	25	43	34	50	35	41	28	45	26	36	27	28	14	39	16	..	..	..	..	..	..	43.6	25.2
SOUTHERN MARYLAND.																																																																
Annapolis	47	24	42	38	44	34	41	30	39	24	54	35	59	47	46	33	49	35	42	37	37	30	40	35	45	29	53	31	49	40	51	37	51	32	56	40	53	35	41	30	50	31	47	39	45	37	44	36	45	33	39	30	31	24	34	26	..	..	..	..	..	..	45.5	33.3
Charlotte Hall School	33	16	37	32	47	32	41	25	36	21	50	32	51	35	42	30	42	31	38	25	34	29	35	31	47	29	60	29	49	36	50	32	63	31	56	39	47	32	37	25	50	33	53	38	54	38	46	32	42	31	49	30	33	22	39	19	..	..	..	..	..	..	45.0	29.8
Cherryfields *2	37	26	40	36	36	32	31	30	36	30	44	43	39	38	38	34	36	32	33	30	36	36	36	32	35	29	41	30	44	40	41	36	47	38	50	44	36	34	36	35	44	36	43	42	45	41	38	35	39	38	36	32	27	24	33	26	..	..	..	..	..	..	.....	.....
Distributing Reservoir, D. C.*3	38	18	37	36	40	34	38	25	35	26	50	40	45	42	35	34	37	35	37	26	35	32	34	32	43	31	54	31	52	35	45	41	55	35	50	42	41	32	35	30	50	35	43	39	47	38	40	32	42	32	42	31	27	20	38	23	..	..	..	..	..	..	41.6	32.4
Jewell	38	12	36	31	30	30	35	23	36	22	50	32	50	37	41	31	40	30	37	25	37	27	35	30	40	30	59	29	49	31	45	35	61	31	55	39	44	31	39	28	50	32	45	33	50	36	50	30	42	31	45	27	27	17	48	17	..	..	..	..	..	..	43.7	28.8
Laurel	37	28	38	30	38	31	40	24	40	18	52	31	51	36	40	28	41	30	40	23	36	28	37	29	44	27	54	24	48	36	49	39	58	27	57	33	47	29	48	22	54	33	48	37	50	36	41	30	47	25	37	27	30	15	38	14	..	..	..	..	..	..	44.3	28.2
Maryland Agricultural College	37	10	..	..	..	..	38	27	36	21	47	32	48	37	35	28	38	30	37	22	34	30	32	30	41	27	56	25	..	..	45	31	60	26	53	34	43	30	36	23	50	31	..	..	..	..	44	32	42	26	42	28	30	15	38	15	..	..	..	..	..	..	41.8	26.5
Receiving Reservoir, D. C.*3	35	17	38	37	37	34	36	25	36	24	50	40	46	41	36	32	37	35	36	25	35	31	34	22	41	31	50	30	50	35	42	41	53	34	50	43	42	32	34	29	48	34	42	39	46	37	39	32	41	32	40	31	30	20	35	20	..	..	..	..	..	..	31.9	40.7
Solomon's	42	19	41	34	39	35	30	28	38	24	45	34	51	35	40	29	41	31	39	25	36	30	36	32	44	29	56	28	45	33	47	37	59	32	58	39	45	32	38	28	46	34	44	39	53	38	45	32	41	35	47	32	31	23	42	21	..	..	..	..	..	..	43.9	30.9
Washington, D. C.	38	12	38	32	40	32	38	27	36	22	53	34	50	38	41	32	39	29	38	23	36	29	35	32	44	30	59	28	53	35	45	33	63	31	55	38	44	31	38	26	50	32	44	37	49	32	44	32	44	30	44	23	28	20	37	18	..	..	..	..	..	..	43.7	29.1
EASTERN MARYLAND.																																																																	
Chestertown	37	14	38	33	39	30	39	29	43	21	52	34	48	36	37	29	38	32	38	25	36	27	32	28	33	25	50	24	54	32	44	34	56	29	55	34	56	44	39	25	50	32	43	36	48	35	37	30	40	28	40	30	28	11	34	19	..	..	..	..	..	..	42.3	28.8
Denton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Easton	40	15	40	21	40	30	38	28	45	22	54	21	51	39	37	29	39	32	38	25	35	20	37	30	39	28	54	25	53	30	45	35	55	29	56	35	43	30	38	24	39	29	44	36	51	32	41	32	41	30	48	30	30	16	35	19	..	..	..	..	..	..	43.1	27.6
Mardela Springs	43	13	44	32	43	29	37	29	38	21	53	35	53	34	42	29	41	29	40	22	37	29	40	34	40	26	55	24	55	33	45	34	57	28	57	40	42	31	39	22	48	33	45	40	53	38	41	31	43	32	48	30	30	18	36	15	..	..	..	..	..	..	44.5	29.0
Pocomoke City	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Princess Anne	46	16	46	36	40	28	38	26	39	22	52	35	54	36	41	27	42	26	41	21	38	27	41	31	44	27	56	23	56	30	44	36	59	26	62	34	45	29	39	21	47	36	53	41	55	39	44	28	44	34	49	27	33	20	37	17	..	..	..	..	..	..	45.9	28.5
DELAWARE.																																																																
Dover	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Kirkwood *1	34	17	36	33	38	34	34	28	36	25	46	38	48	40	45	32	40	33	36	30	34	27	26	22	31	26	50	21	46	32	46	35	50	32	48	36	43	33	36	26	48	35	40	37	48	36	38	30	41	30	38	22	34	16	..	..	..	..	..	..	..	..	.....	.....
Milford	42	11	39	33	38	30	44	19	35	24	51	34	50	38	40	29	42	33	39	26	37	28	38	30	41	29	58	25	52	33	47	36	55	31	57	41	48	33	38	23	57	30	48	38	55	39	48	32	41	31	44	31	39	18	41	19	..	..	..	..	..	..	45.1	29.4
Millsboro	34	13	41	37	41	28	39	28	35	15	46	36	52	37	52	28	42	33	42	23	41	28	37	34	39	28	41	23	57	33	52	40	52	27	57	44	59	31	43	21	39	34	51	39	45	38	53	32	42	32	42	30	41	18	34	16	..	..	..	..	..	..	44.6	29.5
Newark (Delaware College)	34	10	36	29	40	30	39	25	34	18	48	31	48	37	39	30	37	32	36	27	35	26	31	25	33	21	44	16	44	29	43	34	50	28	51	39	40	26	38	22	51	31	43	35	46	34	37	29	43	26	35	27	29	12	34	17	..	..	..	..	..	..	39.9	26.6
Seaford	41	14	42	34	39	28	35	26	37	22	56	33	51	38	41	29	40	30	40	24	37	28	38	31	44	28	53	25	53	33	53	34	56	29	57	36	43	31	38	23	49	33	46	39	53	37	41	32	41	31	45	30	34	17	35	19	..	..	..	..	..	..	44.2	29.1

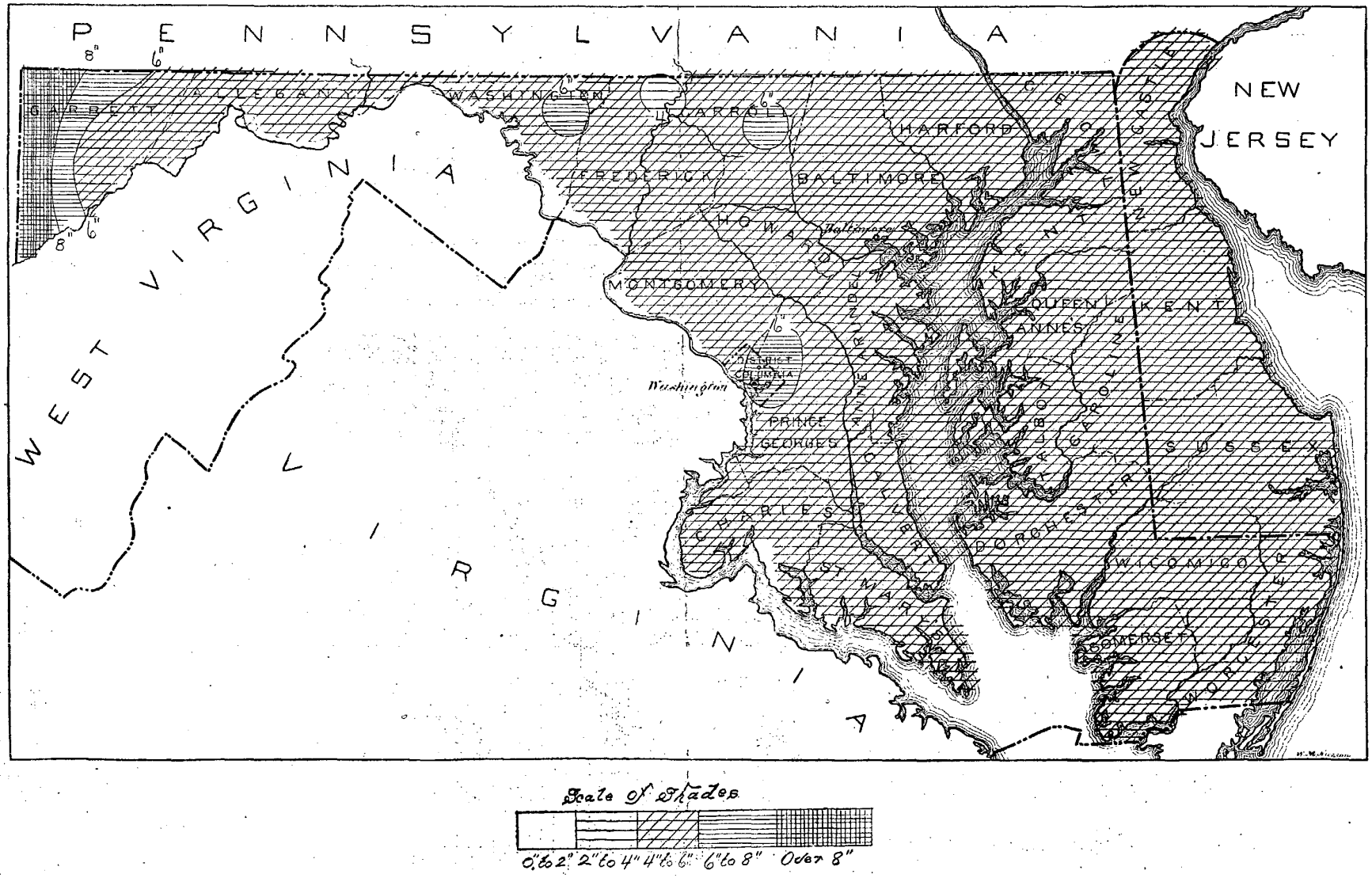
* Extremes of temperature from observed readings of dry thermometer.

1 Observations taken at 7 a.m., 2 p.m., and 9 p.m.

2 Observations taken at 8 a.m. and 8 p.m.

3 Observations taken at 7 a.m. and 2 p.m.

TOTAL PRECIPITATION, FEBRUARY, 1897.



Daily precipitation for Maryland and Delaware, February, 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		.70				.80		.10				.40			.10					.10		2.30	†									4.50
Cumberland (1)		.62			1.13	.03		†			1.10						.02				.10	2.05	.71			.05						5.81
Cumberland (2)							2.00					.90			†				.20	.20	1.80	.72										5.82
Deer Park						.40	.20												.10	.88	1.63	.79				.20						4.20
Flintstone		.70				1.10	.25					.90								.10		1.88	.70									5.63
Grantsville			.80			.40	1.10	.40				1.00						.10		.70	.05	1.60	1.00	.08		.30						7.53
Green Spring Furnace			1.00				.92	.22				.69								.30		1.30	.25			.10						4.78
Hagerstown			1.50		.30	.95							.40								.75	1.50	.52			.25						6.17
Sharpsburg			1.05			1.33	.09	.17				.56								.35		.86	.70			.06						5.17
Sunnyside		.42	.68		.10	.50	.38	.57	.01			1.20			.58			.23		.34	.80	1.93	1.09	.05		.12	.17	†			9.17
Westernport		.60				.80		.20			†	.40								.43			1.63	.70		.05		.05				4.86
NORTHERN-CENTRAL MARYLAND.																																
Bachman's Valley		1.50	.20			1.98		.07			.30			.08				†		.15	†	†	2.60			.30						7.18
Baltimore		1.40	.32		†	.56	.03	.14	†			.53				.01		.01		.16	.51	.71	.73			.02						5.13
Darlington Academy		1.02				.64						.67			.09					.45		1.28				.05						4.20
Fallston School		1.80				.85		.14				.67			.01		†	†				1.11	1.02	†		.04						5.64
Frederick		2.00				.58		.15				.65									.43	.84				.12						4.77
Great Falls		.40	1.50			.10	.85		.04			.35	.07								.45	.85	1.00				.10					5.71
Johns Hopkins Hospital		.59	1.20			.16	.40		.15			.10	.47			.01			.01		.46	.87	.95				.01					5.38
McDonogh School																																
Mt. St. Mary's College		.20	.15			.50	.02	.15				.66			†					.21	.23	1.09	.15			.17						3.53
New Market		1.68				.90		.18			†	.72			†					.60		1.76				.15						5.99
St. Charles College		1.94				.97		.20				.59						†		.51		1.58				.05						5.84
Taneytown		1.16				.25	.35	.09				.73			†						.33	1.30	†			.26						4.47
Van Bibber	.28	1.40				.40		.49				.79						†		.50	.51	1.03				.17						5.57
Western Maryland College		1.76				.85		.18			.30									.43		1.34				.30						5.16
Woodstock College		.50	1.20		.15	.70	†	.12		†	.20	.60								.50	.75	.70				.09						5.51
SOUTHERN MARYLAND.																																
Annapolis	†	1.15	.25			.68		.09	†		.07	.48			†			†		.10	.62	.89				.35						4.68
Charlotte Hall School		1.50	.45			.30		†			†	.70				.08		.10		.20	†	1.60				.10						5.03
Cherryfields	.20	1.65	.10			.21	†					.33				.22		.31		.46	.50	.67	.80		.04	.10						5.59
Distributing Reservoir, D. C.		.80	1.50			.10	.40		.09			.50	.16						.02		.40	1.02	.80				.05					5.84
Jewell			1.65		†	.30		.15			†	.70						.12		.50		1.73				.10						5.25
Laurel		.60	.94			.65		.10				.70									1.50	.92				.10						5.51
Maryland Agricultural College		1.60	.50			.71						.82							.05		.20	1.65	.53			.05						6.11
Receiving Reservoir, D. C.		.59	1.38			.10	.50		.13			.45	.17						.07		.64	1.03	.80				.03					5.89
Solomon's	†	1.93	.20		.01	.21		.03			†	.44				.12		.15		.20	.32	.78	.92		.01	.19						5.51
Washington, D. C		2.11	.32		.01	.59	†	.10			.02	.83				†		.04	.08	.30	.27	1.20	.53	†		.07						6.47
EASTERN MARYLAND.																																
Chestertown	.45	.67			.20	.10		.15			.41	.21								.30	.81	.82				.10						4.22
Denton																																
Easton			1.40			.33		.16				.77				.18		.20		.33		1.92				.18						5.47
Mardela Springs			1.50			.45						.66				.31		.31		.09			.58	1.11	.07		.06					5.14
Pocomoke City																																
Princess Anne	†	1.06	.23			.24		†			†	.48				.33		.16	.12	.12		1.10	.69		.11		.08					4.72
DELAWARE.																																
Dover																																
Kirkwood																																
Milford			2.12			.40		.06								.08		.44			.64	.78	.98			.06						5.56
Millsboro		1.78	.87			.45						.62				.17			.18	.10	.18	.77	.52		.05		.13					5.82
Newark (Delaware College)			.68			.60		.09				.50			.07						.44	.32	1.54				.06					4.30
Seaford			1.30			.46		.04				.72				.12		.15			.22		1.59		.06	.13						4.79

† Trace, when precipitation is less than 0.01 inch.