U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR JANUARY. 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

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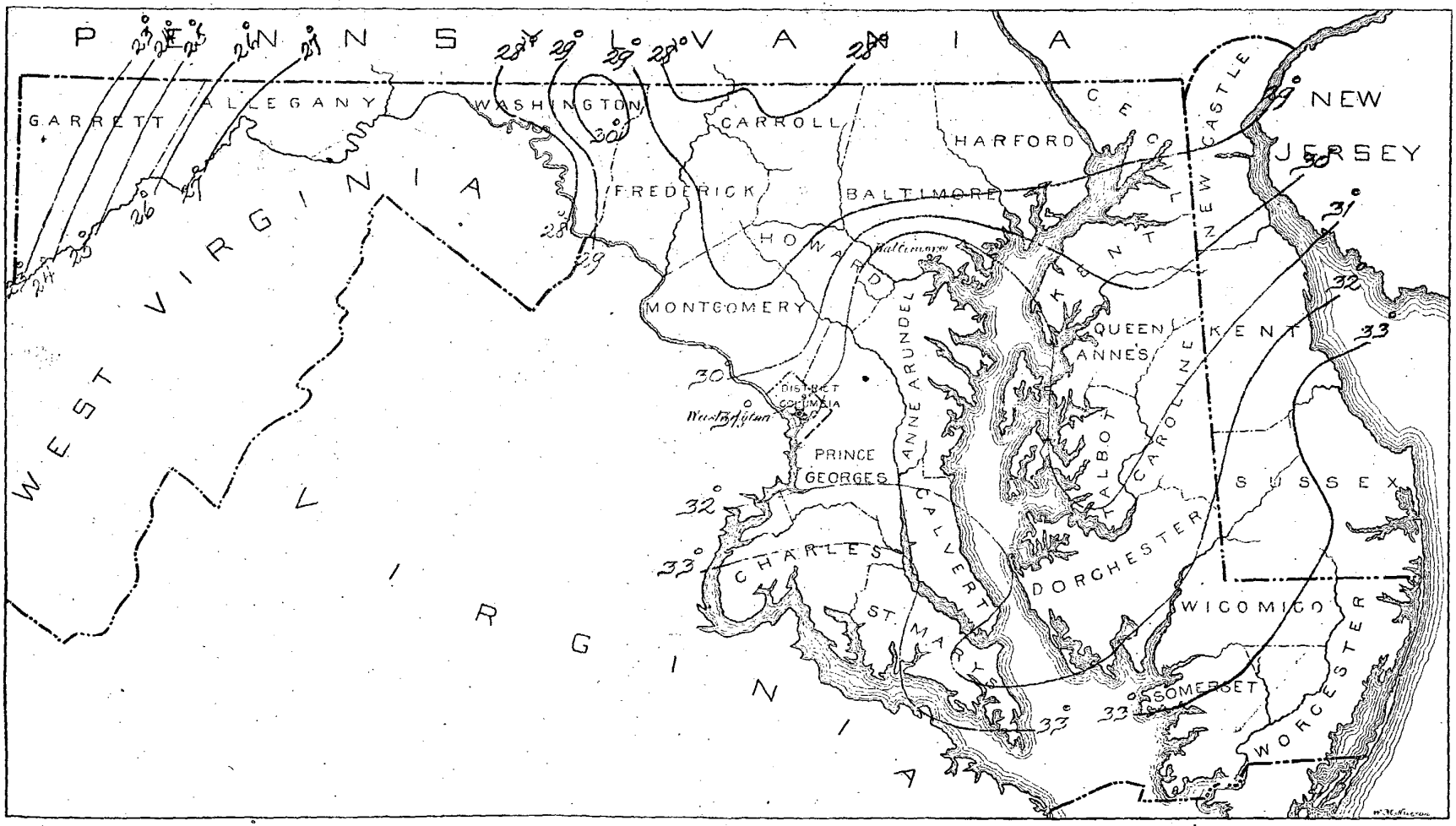
JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

MONTHLY MEAN ISOTHERMS, JANUARY, 1897.



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WEATHER BUREAU.

Central Office, WASHINGTON, D. C. } WILLIS L. MOORE, Chief.

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GEORGE E. HUNT, Section Director,

BALTIMORE, MD.

VOL. II. BALTIMORE, MD. No. 1.

IN THE OCEAN'S DEPTHS.

THE ENORMOUS PRESSURE EXERTED BY THE WATER IN THE DEEPEST PLACES.

The temperature at the bottom of the ocean is nearly down to freezing point, and sometimes actually below it. There is a total absence of light, as far as sunlight is concerned, and there is an enormous pressure, reckoned at about one ton to the square inch in every 1,000 fathoms, which is 160 times greater than that of the atmosphere we live in. At 2,500 fathoms the pressure is thirty times more powerful than the steam pressure of a locomotive when drawing a train. As late as 1880 a leading zoologist explained the existence of deep-sea animals at such depths by assuming that their bodies were composed of solids and liquids of great density, and contained no air. This, however, is not the case with deep-sea fish, which are provided with air-inflated swimming bladders. If one of these fish, in full chase after its prey, happens to ascend beyond a centain level, its bladder becomes distended with the decreased pressure, and carries it, in spite of all its efforts, still higher in its course. In fact, members of this unfortunate class are liable to become victims to the unusual accident of falling upward, and no doubt meet with a violent death soon after leaving their accustomed level, and long before their bodies reach the surface in a distorted and unnatural state. Even ground sharks, brought up from a depth of no more than 500 fathoms, expire before they gain the surface.

The fauna of the deep sea—with a few exceptions hitherto only known as fossils—are new and specially modified forms of families and genera habitating shallow waters in modern times, and have been driven down to the depths of the ocean by their more powerful rivals in the battle of life, much as the ancient Britons were compelled to withdraw to the barren and inaccessible fastnesses of Wales. Some of their organs have undergone considerable modification in correspondence to the changed conditions of their new habitats. Thus down to 900 fathoms their eyes have generally become enlarged, to make the best of the faint light which may possibly penetrate there. After 1,000 fathoms these organs are either still further enlarged, or so greatly reduced that in some species they disappear altogether and are replaced by enormously long feelers. The only light at great depths which would enable large eyes to be of any service is the phosphorescence of deep sea animals. We know that at the surface this light is often very powerful, and Sir Wyville Thomson has recorded one occasion on which the sea at night was a "perfect blaze of phosphorescence, so strong that lights and shadows were thrown on the sails and it was easy to read the smallest print." It is thought possible by several naturalists that certain portions of the sea bottom may be as brilliantly illumined by this sort of light as the streets of a European city after sunset. Some deep-sea fish have two parallel rows of small circular phosphorescent organs running along the whole length of their bodies, and as they glide through the dark waters of the profound abysses they must look like model mail ships with rows of shining portholes.—*From Nineteenth Century.*

* * *

WHAT FOGS ARE.

A convenient though not strictly scientific classification of fog types is, sea or coast fog, valley or hill fog, and town or dust fog. The last named has been given the euphonic designation nebula pulverea. It is an artificial rather than natural condition. The Rev. Clement Ley, who gave a large portion of his life to cloud study, says, in his book on "Cloudland," that in some parts of the the globe nebula pulverea is occasionally so thick as to obscure almost totally the sunlight, and in Abyssinia has led to the tradition that the plague of darkness in Egypt was in reality an unusual "dust fog." The amount of moisture varies so much in different fogs that the terms "dry" and "wet" are used, the scientific name of the latter being nebula stillans. In wet fog the particles are apt to be larger than in dry fog. A still further division, due, we believe, to Mr. Robert H. Scott, is anticyclonic fog, or fog in which no rain falls, while the temperature, generally low in the morning, continues to rise during the day; and cyclonic fog, in which rain does occur, while the temperature remains about stationary. Before leaving these town fogs we may notice the part played by them in affecting the health of the community. Mr. Scott has given figures showing the mortality from diseases of the respiratory system for some of the more memorable fogs of London. We have room for but one of the many periods he gives. From January 26 to February 6, 1880, London experienced eight days of fog. The average temperature at 8 o'clock in the morning was 26° Fahrenheit. The total death rate was 48.1 per thousand, a rate unequalled since the last cholera epidemic, and there were no less than 1,557 deaths from diseases of the respiratory organs. It is not always an easy matter to trace direct relationship even where the statistics are carefully gathered, but there can be little doubt that these town fogs are unwholesome. Indirectly they affect the health of the community in a way few would imagine. A town fog is an excellent trap for noxious gases, holding them close to the ground. Dr. R. Barnes, studying this question, found, by inspection of gas plants near London, that in foggy

weather the escaping gas was held in concentrated form in and near the works. There are other sources of contamination in foul emanations from the ground, sewers, etc. On clear, bright days, even if no wind is blowing, the law of diffusion of gases acts more effectively, and helps disperse the gases.—*Harper's Magazine.*

* * *

CLIMATOLOGY OF THE MONTH.

The State records of temperature and moisture were both short of the normal figures for January. The precipitation was pretty well distributed throughout the month, although the greater portion fell during the second decade.

The precipitation for November, 1896, was about normal, as will be remembered, but the light falls of December and the deficiency of the present month, have resulted in a shortage of the water supply in a few sections of the State.

No snowfall of consequence occurred prior to the 13th, but since that date the measured amounts have sufficed to give total monthly depths ranging from four inches and upwards in the eastern sections to twenty and twenty-eight inches in the mountain districts of Western Maryland.

Temperatures were for the most part above the normal until the 24th, when a cold wave period began and continued to the close of the month. The low temperatures of this period gave such marked departures as to overcome the excess of heat previously accumulated, and a monthly average temperature of less than normal was the result.

Winter grain was protected from damage by an ample covering of snow on the ground during the extreme cold weather.

ATMOSPHERIC PRESSURE—IN INCHES AND HUNDREDTHS.

Monthly mean at Washington, D. C., 30.20; at Baltimore, 30.17; average, 30.18; highest, 30.75 at Washington on the 31st; lowest, 29.66 at Baltimore, on the 22d.

TEMPERATURE—IN DEGREES FAHRENHEIT.

The monthly mean (entire territory), 29°.5, was 2°.5 below the normal.

The highest monthly mean was 37°.0, at Annapolis.

The lowest monthly mean was 22°.6, at Boettcherville.

The highest temperature recorded during the month was 66°, at Jewell, on the 4th.

The lowest temperature recorded during the month was —12°, at Deer Park, on the 13th.

The greatest local monthly range was 71°, at Sunnyside.

The least local monthly range was 44°, at Annapolis.

The greatest daily range was 64°, at Sunnyside, on the 18th.

The least daily range was 0°, at Cumberland, on the 12th and 19th, and at Sunnyside, on the 24th.

PRECIPITATION—IN INCHES AND HUNDREDTHS.

The monthly average (entire territory) 1.95, was 1.33 below the normal.

The greatest amount was 3.97, at Grantsville.

The least amount was 0.81, at Milford, Del.

The greatest amount in twenty-four hours was 1.40, at Jewell, on the 20th, and at Newark, Del., on the 20th–21st.

The average number of rainy days, 7.

WIND.

The prevailing direction was from the northwest.

The total movement was 4,559 miles, at Baltimore, and 6,316 miles, at Washington, D. C.

The maximum wind velocity was 40 miles per hour from the northwest, at Washington, D. C., on the 28th.

MISCELLANEOUS PHENOMENA.

Thunderstorms.—None reported during the month.

Hail.—At Bachman's Valley, on the 17th and 20th; at New Market, on the 17th; at Seaford, Del., on the 14th and 15th; at Solomon's, on the 15th; at Taneytown, on the 17th, fram 9 a. m. to 10 a. m.; at Woodstock College, on the 17th and 20th.

Sleet.—At Annapolis, on the 28th, 29th, 30th, and 31st; at Green Spring Furnace, on the 20th; at Mt. St. Mary's College, on the 17th and 20th; at Sharpsburg, on the 17th and 20th; at Sunnyside, on the 14th and 15th; at Woodstock College, on the 20th.

Frosts, light.—At Annapolis, on the 1st, 8th, and 9th; at Taneytown, on the 1st, 8th, and 9th; at Woodstock College, on the 1st, 6th, 7th, and 20th.

Frosts, killing.—At Cherryfields, on the 1st and 11th; at Mardela Springs, on the 1st, 8th, 9th, 10th, 11th, 13th, 20th, and 31st; at Mt. St. Mary's College, on the 7th, 8th, 9th, 10th, 11th, and 12th; at Princess Anne, on the 7th, 8th, 9th, 11th, and 31st; at Sharpsburg, on the 8th, 9th, 11th, and 31st; at Solomon's, on the 1st, 9th, and 10th; at Woodstock College, on the 8th, 9th, 10th, and 30th.

Fogs.—At Baltimore, on the 3d; at Bachman's Valley, on the 2d; at Jewell, on the 2d, 3d, 4th, 15th, and 16th; at Milford, Del., on the 15th; at Millsboro, Del., on the 2d and 15th; at New Market, on the 16th and 17th; at Princess Anne, on the 2d, 15th, and 16th.

Auroras.—At Baltimore, on the 23d, at 7 p. m.; at Solomon's, on the 23d.

Halos, lunar.—At Cumberland, on the 16th; at Green Spring Furnace, on the 8th.

Coronas, lunar.—At Millsboro, Del., on the 7th, and 9th.

* * *

REMARKS BY OBSERVERS.

Charlotte Hall, Prof. J. F. Coad.—Blizzard on the 27th and 28th; snow drifted very much.

Cherryfields, Col. J. Edwin Coad.—St. Marys River, two miles wide, frozen over on the morning of the 31st.

Frederick, Mr. McClintock Young.—The high winds of the 28th evaperated nearly all the snowfall of the day before, 4.5 inches.

Climatological data for Maryland and Delaware, January, 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	22.6	−5.5	56	4	− 6	31	24	1.90	−0.95	0.50	10.0	7					F. F. Brown.
Cumberland No. 1	do	650	38	31.6		64	4	3	25	43	1.80	−0.57	0.80	7.5	6					Shriver & Rizer.
Cumberland No. 2	do	650	27	27.2	−3.2	60	4	3	25	28	1.76	−0.26	1.00	8.0	3	11	6	14		Webster Bruce.
Deer Park	Garrett	2,457	6					−12	13		2.80		0.80	20.0	5					S. P. Specht.
Flintstone	Allegany		2	27.4		60	5	− 6	31	38	2.02		0.64	9.0	4	11	9	11		N. T. Downs.
Grantsville	Garrett	2,100	4	22.7		56	3	− 9	25	45	3.97		1.00	28.5	12	4	7	20	nw.	J. S. Miller.
Green Spring Furnace	Washington	500	5	28.2	−1.5	63	4	4	25	27	1.96		0.82	5.0	7	15	10	6	w.	E. G. Kinsell.
Hagerstown	do	550	6	30.4		62	4	4	26	23	0.87		0.32	5.5	5	10	11	10		Prof. C. E. Carl.
Sharpsburg	do	420	3	27.7		62	4	3	31	30	1.31		0.49	4.7	5	13	8	10		R. L. Hiberger.
Sunnyside	Garrett	2,440	5	22.8	+0.5	60	3	−11	25	64	3.07	−0.92	0.63	19.0	15	11	3	17	sw.	J. G. Knauer.
Westernport	Allegany	1,000	3	25.9		59	4	− 1	24	30	1.88		0.70	7.5	7					Prof. O. H. Bruce.
Average				26.6	−2.4						2.12	−0.68		11.3	7	11	8	12	nw.	
NORTHERN-CENTRAL MD.																				
Bachman's Valley	Carroll		4	27.0		60	4	1	31	26	2.20		1.00	6.0	6	18	3	10	nw.	J. M. Myers.
Baltimore	Baltimore	123	63	31.4	−2.9	60	4	6	29	21	2.05	−1.15	0.94	4.7	13	10	8	13	w.	U. S. Weather Bureau.
Darlington Academy	Harford	300	8	29.4	+0.9	65	4	5	26	29	1.93	−1.75	1.06	6.0	5	11	3	17	nw.	Prof. A. F. Galbreath.
Fallston School*1	do	450	29	28.6	−1.7	60	4	6	25		2.19	−1.23	1.15	5.5	8	7	18	6	nw.	G. G. Curtis, A. M.
Frederick	Frederick	250	25	29.6	−2.0	64	4	5	26	30	1.39	−1.86	0.79	6.8	6	6	17	8		McClintock Young.
Great Falls*3	Montgomery	150	9	29.6	−0.5	63	4	6	29		1.22	−2.09	1.00		2					Capt. D. D. Gaillard.
Johns Hopkins Hospital		124	3	29.6		61	4	5	26	40	1.81		1.00		5				nw.	W. L. Woods.
McDonogh School	Baltimore	545	22	28.8	−2.4	61	4	4	26	28										S. H. Moore.
Mt. St. Mary's College	Frederick	720	37	28.0		60	4	3	26	24	2.26	−0.96	0.72	7.1	10	15	5	11	nw.	J. A. Mitchell, Ph. D.
New Market	do	550	14	28.3	−2.8	62	4	4	26	23	1.66	−0.99	0.84	5.0	6	9	9	13	nw.	H. H. Hopkins, M. D.
St. Charles College	Howard	300	3	31.4		59	4	8	26	23	1.93		0.72	7.0	5	13	11	7	nw.	H. M. Chapuis, S. S.
Taneytown	Carroll		5	28.0		63	4	4	25	30	1.84		1.03	7.0	8	12	2	17	w.	Prof. H. Meier.
Van Bibber	Harford		2	28.6		63	4	7	25	24	2.08		1.38		6	15	3	13	nw.	H. A. Wroth.
Western Maryland Coll.	Carroll		3	28.3		60	3	2	25	28	2.06		0.60	7.2	7	18	5	8		Prof. Roland Watts.
Woodstock College	Baltimore	392	28	29.2	−1.6	61	4	4	31	39	1.78	−1.91	0.75	5.5	5	15	10	6	nw.	T. J. A. Freeman, S. J.
Average				29.0	−1.6						1.89	−1.49		6.2	7	12	8	11	nw.	
SOUTHERN MARYLAND.																				
Annapolis	Anne Arundel	20	24	37.0		54	4	10	26	32				5.0		17	1	13	nw.	J. E. Abbott.
Charlotte Hall School	St. Mary's	167	4	33.2		64	4	5	29	30	1.75		1.04	6.5	4	13	11	7	nw.	J. F. Coad.
Cherryfields*2	do	20	4	31.8		51	3	14	25		1.92		0.60	8.8	6	13	10	8	nw.	Col. J. E. Coad.
Distributing Reservoir*3	Dist. of Columbia.	120	7	30.3	−2.7	63	4	9	25		1.11	−1.83	0.87		3					Captain Gaillard.
Jewell	Anne Arundel	165	10	31.2	−4.0	66	4	6	26	26	2.19	−1.03	1.40	4.0	7	18	4	9	nw.	J. Plummer.
Laurel	Prince George's		3			64	4	0	30		2.05		1.25	5.0	3					Dr. T. M. Baldwin.
Md. Agricultural College	do	170	6	27.5	−7.0	54	10	− 2	30	35	1.76	−2.23	0.94	5.0	6					Prof. J. H. Patterson.
Receiving Reservoir*3	Dist. of Columbia.	160	7	30.0	−2.2	63	4	8	25		1.16	−2.26	0.90		3					Captain Gaillard.
Solomon's	Calvert	20	6	33.2	−3.0	56	10	10	26	23	1.68	−1.43	0.83	8.2	8	12	6	13	nw.	W. H. Marsh, M. D.
Washington	Dist. of Columbia.	112	27	31.0	−5.1	64	4	8	26	30	1.98	−1.38	0.91		10	15	3	13	nw.	U. S. Weather Bureau.
Average				31.7	−4.0						1.73	−1.69		6.1	6	15	6	10	nw.	
EASTERN MARYLAND.																				
Chestertown	Kent	80	13	30.0	−2.7	63	4	8	26	32	2.40	−0.79	1.20	7.5	5	16	6	9	n.	Hon. M. de K. Smith.
Denton	Caroline	42	8																	F. C. Ramsdell.
Easton	Talbot	35	8	30.9	−2.1	65	4	8	31	36	2.04	−1.14	1.05	5.5	9	19	4	8	nw.	Henry Shreve.
Mardela Springs	Wicomico	25	10	32.0	−3.0	65	4	6	31	29	2.48	−0.73	1.15	9.8	11	11	8	12	nw.	A. E. Acworth.
Pocomoke City	Worcester	37	4																	R. M. Stevenson.
Princess Anne	Somerset	20	23	32.2	−5.9	64	4	3	31	34	1.65		0.39	9.0	8	10	12	9	nw.	J. R. Stewart.
Average				31.3	−3.4						2.14	−0.89		8.0	8	14	7	10	nw.	
DELAWARE.																				
Dover	Kent	40	21																	J. S. Jester.
Kirkwood*1	Newcastle		1																	William Carnagy.
Milford	Kent		18	33.0	−3.2	63	4	9	26	44	0.81	−2.41	0.43	7.8	2	21	0	10	nw.	J. Y. Foulk.
Millsboro	Sussex		5	33.0	+1.2	64	5	3	31	31	2.69	−0.64	0.99	13.0	9	16	8	7	n.	Rev. L. W. Wells.
Newark (Delaware Coll.)	Newcastle		4	28.6		56	4	6	26	23	2.35		1.40	8.0	7	8	15	8	nw.	Prof. W. H. Bishop.
Seaford	Sussex		7	32.2	−0.4	63	3	8	26	27	2.16	−1.44	1.20	12.5	6					H. L. Wallace.
Average				31.7	−0.8						2.00	−1.50		10.3	6	15	8	8	nw.	
General average				29.5	−2.5						1.95	−1.33		8.3	7	13	7	11	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.

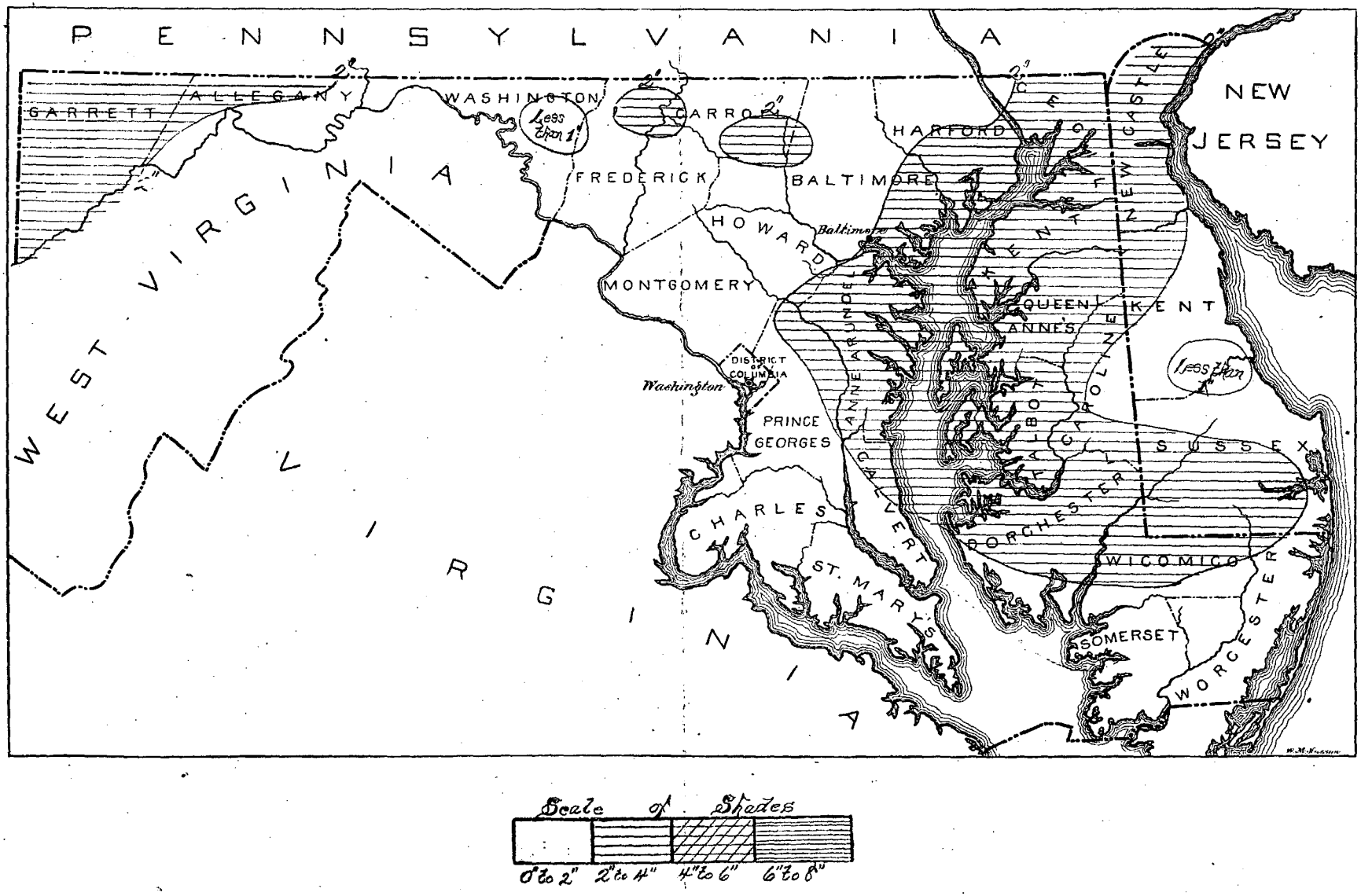
Maximum and minimum temperatures for Maryland and Delaware, January, 1897.

Stations.	1. Max.	1. Min.	2. Max.	2. Min.	3. Max.	3. Min.	4. Max.	4. Min.	5. Max.	5. Min.	6. Max.	6. Min.	7. Max.	7. Min.	8. Max.	8. Min.	9. Max.	9. Min.	10. Max.	10. Min.	11. Max.	11. Min.	12. Max.	12. Min.	13. Max.	13. Min.	14. Max.	14. Min.	15. Max.	15. Min.	16. Max.	16. Min.
WESTERN MARYLAND.																																
Boettcherville *2	35	34	36	34	40	30	56	45	30	28	20	14	20	18	24	16	24	16	30	30	30	24	24	10	22	10	26	24	32	26	35	32
Cumberland (1)	46	40	54	36	62	38	64	47	47	29	31	22	39	26	33	29	52	31	59	39	43	31	36	17	31	15	36	30	41	34	47	37
Cumberland (2)	45	30	46	30	58	32	60	32	35	20	34	20	26	18	34	18	47	20	47	28	40	27	30	30	25	10	34	18	34	25	42	34
Deer Park	..	30	..	28	..	30	..	36	..	6	..	8	..	13	..	19	..	29	..	18	..	20	..	14	..	†	..	18	..	21	..	28
Flintstone	53	23	55	25	56	30	59	47	60	28	33	15	33	17	36	12	44	16	46	26	38	18	34	20	24	4	30	20	37	23	42	28
Grantsville	52	27	53	33	56	36	50	39	53	16	16	7	36	12	40	12	35	20	40	26	27	22	22	14	21	-7	28	18	37	25	47	36
Green Spring Furnace	44	26	47	29	55	35	63	45	47	33	36	17	32	17	34	16	44	18	47	28	42	20	32	20	26	12	29	24	35	27	39	28
Hagerstown	52	34	51	32	54	34	62	50	60	37	39	17	34	22	35	19	44	22	46	32	40	27	37	24	26	15	29	24	35	27	40	24
Sharpsburg	43	30	47	33	53	33	62	32	39	37	30	18	33	19	35	18	43	20	49	32	41	23	31	21	24	14	28	22	33	26	39	25
Sunnyside	50	28	51	27	60	41	56	46	31	20	14	5	33	7	39	14	41	24	41	27	29	25	22	14	55	-9	25	18	32	25	41	27
Westernport	45	33	48	32	58	34	59	30	42	15	25	15	34	17	35	21	46	32	46	23	37	21	31	6	24	14	29	22	35	27	44	30
NORTHERN-CENTRAL MARYLAND.																																
Bachman's Valley	39	29	45	30	54	37	60	46	54	34	37	18	31	14	33	14	40	14	44	23	39	22	35	20	25	9	30	20	32	25	37	22
Baltimore	45	33	44	35	49	36	60	48	52	35	35	21	35	23	38	25	44	26	51	34	45	30	35	23	27	20	32	24	34	29	38	30
Darlington Academy	43	28	44	32	60	31	65	48	55	39	31	20	34	20	36	20	40	19	48	30	44	24	31	21	26	13	28	22	33	28	38	28
Fallston School *1	45	29	43	34	48	39	60	48	44	36	30	23	31	18	35	21	38	24	48	29	41	28	31	21	24	14	29	25	32	28	41	28
Frederick	44	33	49	34	53	38	64	47	45	39	30	19	35	19	38	20	46	19	59	29	41	24	31	23	26	15	31	24	35	28	44	22
Great Falls *3	40	33	47	31	50	41	63	52	44	41	30	22	31	19	35	16	42	17	51	23	44	22	31	25	26	18	31	25	34	30	34	22
Johns Hopkins Hospital	44	29	44	31	49	33	61	38	45	39	30	20	34	19	38	21	44	22	51	24	45	27	35	25	27	17	31	18	33	25	39	28
McDonogh School	..	..	..	..	51	44	61	47	45	35	30	23	31	19	34	22	41	23	..	..	42	29	35	23	35	14	..	..	35	22	37	26
Mt. St. Mary's College	37	33	42	33	53	32	60	51	56	33	35	11	31	12	35	20	41	19	47	31	41	27	34	21	35	13	27	21	30	26	35	23
New Market	41	34	46	32	55	38	62	48	40	37	28	18	31	17	35	17	42	19	47	31	41	26	30	24	25	13	29	23	33	27	38	22
St. Charles College	48	33	45	37	50	40	59	47	48	38	37	23	39	23	42	25	45	27	51	33	46	29	46	25	29	21	30	24	32	27	35	28
Taneytown (Milton Academy)	39	30	49	30	57	36	63	47	45	36	31	18	31	18	37	17	45	18	46	21	40	19	32	21	24	12	30	16	32	24	36	26
Van Bibber	41	30	44	33	49	39	63	40	45	25	33	20	32	20	36	20	36	20	48	26	42	25	23	13	25	15	30	26	34	29	40	26
Western Maryland College	56	40	58	40	60	38	60	32	42	32	42	16	28	16	34	20	34	24	45	30	40	22	30	15	28	23	31	25	34	24	40	30
Woodstock College	42	24	49	30	51	35	61	39	46	38	33	18	31	14	38	14	44	15	52	13	46	21	37	22	30	10	37	11	36	28	40	26
SOUTHERN MARYLAND.																																
Annapolis	51	36	49	43	52	42	54	49	48	45	39	30	42	28	40	37	39	28	51	31	30	28	36	32	33	28	44	32	44	34	45	33
Charlotte Hall School	49	29	51	30	55	37	64	40	57	37	40	24	44	16	42	20	50	20	55	28	51	25	36	28	27	18	32	26	33	29	39	30
Cherryfields *2	40	34	45	38	51	44	50	48	45	42	30	28	31	24	30	26	38	24	40	36	38	30	30	29	32	25	33	30	35	32	35	33
Distributing Reservoir, D. C.*3	45	34	50	31	54	42	53	52	45	41	30	23	31	21	37	19	45	18	52	25	44	24	30	27	27	19	30	25	31	30	25	23
Jewell	45	30	49	29	55	37	66	50	56	38	40	21	35	20	37	19	45	19	54	30	47	22	32	22	28	17	35	26	32	23	41	27
Laurel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryland Agricultural College	44	29	51	28	52	41	..	..	..	..	33	25	38	20	38	15	44	15	54	19	46	20	34	26	26	12	30	25	31	28	38	18
Receiving Reservoir, D. C.*3	43	34	48	32	53	42	53	53	45	41	30	23	32	21	35	19	41	18	51	24	44	24	30	27	25	19	30	25	33	30	25	24
Solomon's	50	29	45	32	47	39	54	44	52	39	37	25	39	23	38	24	47	24	56	33	49	28	36	28	29	21	33	29	33	31	39	32
Washington, D. C.	46	32	53	30	57	40	64	52	56	33	33	22	38	22	38	20	46	19	54	24	46	23	34	22	28	17	31	21	33	28	38	25
EASTERN MARYLAND.																																
Chestertown	44	27	45	28	53	32	53	39	47	40	34	26	32	22	36	23	40	20	50	25	44	25	33	25	29	15	30	20	33	26	39	27
Denton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Easton	45	28	46	28	52	36	65	39	65	40	26	22	34	32	37	20	40	19	53	20	47	26	35	28	23	17	32	20	34	27	39	30
Mardela Springs	47	26	56	33	62	44	55	53	53	35	32	25	37	19	38	20	43	17	56	27	47	20	35	27	29	17	34	23	35	30	40	34
Pocomoke City	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Princess Anne	48	23	57	30	62	40	64	51	57	30	36	23	36	15	38	20	40	17	53	25	47	21	35	25	29	16	36	27	36	30	40	28
DELAWARE.																																
Dover	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kirkwood *1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Milford	42	28	49	33	61	41	63	19	58	41	34	28	40	22	38	24	47	21	55	29	48	25	38	25	28	17	33	25	37	32	40	33
Millsboro	51	24	44	34	51	41	61	50	64	41	56	29	35	18	36	22	37	18	41	27	53	23	46	23	34	15	32	27	34	31	37	33
Newark (Delaware College)	38	25	43	28	46	35	56	42	51	39	39	22	33	20	36	21	37	16	47	27	42	22	31	22	24	10	29	22	33	28	38	30
Seaford	44	27	58	32	63	42	63	51	57	36	37	24	35	19	37	22	41	20	52	26	47	26	34	25	28	17	32	26	37	29	39	32

Stations.	17. Max.	17. Min.	18. Max.	18. Min.	19. Max.	19. Min.	20. Max.	20. Min.	21. Max.	21. Min.	22. Max.	22. Min.	23. Max.	23. Min.	24. Max.	24. Min.	25. Max.	25. Min.	26. Max.	26. Min.	27. Max.	27. Min.	28. Max.	28. Min.	29. Max.	29. Min.	30. Max.	30. Min.	31. Max.	31. Min.	Monthly mean. Max.	Monthly mean. Min.
WESTERN MARYLAND.																																
Boettcherville *2	36	33	22	18	20	16	30	20	39	34	37	30	20	15	24	10	3	2	8	4	15	10	4	2	15	10	18	15	18	-2	25.6	19.6
Cumberland (1)	48	38	47	29	33	22	38	22	39	37	45	29	28	16	29	9	12	3	19	6	22	12	13	5	23	11	27	11	52	9	38.5	24.6
Cumberland (2)	43	33	37	34	23	23	40	18	42	20	44	33	28	17	20	18	10	3	20	3	20	5	16	5	22	5	26	13	31	5	34.2	20.2
Deer Park	..	29	..	21	..	13	..	18	..	22	..	24	..	6	..	4	..	‡	..	‡	..	-3	..	-7	..	-2	..	6	..	..	..	13.9
Flintstone	43	27	44	28	34	20	29	11	40	28	44	28	43	15	34	16	5	-1	17	1	21	7	20	4	27	7	26	12	32	-6	37.1	17.7
Grantsville	47	30	27	20	22	12	30	3	34	25	44	24	17	6	20	5	1	-9	12	-8	21	-1	5	-6	22	-2	22	7	37	-8	31.4	14.0
Green Spring Furnace	39	30	46	33	32	21	30	15	44	25	45	26	40	19	30	19	14	4	20	4	24	10	20	8	27	9	29	6	31	4	36.2	20.3
Hagerstown	37	31	45	32	32	23	40	20	43	32	47	32	42	20	31	21	21	5	20	4	23	11	19	9	25	10	28	16	31	8	37.7	23.0
Sharpsburg	36	28	35	26	29	23	32	20	44	30	44	30	29	20	31	20	14	5	19	4	22	11	15	8	26	8	29	12	30	3	34.4	21.0
Sunnyside	47	30	27	18	25	12	39	7	35	25	37	27	27	4	15	15	0	§	10	§	20	-3	0	-8	11	-4	21	5	38	-4	31.4	14.2
Westernport	47	31	36	22	29	11	40	20	39	31	49	15	29	15	29	-1	9	-1	15	1	25	2	10	1	22	2	26	1	33	7	34.7	17.1
NORTHERN-CENTRAL MARYLAND.																																
Bachman's Valley	..	2	..	..	42	20	28	11	42	26	43	30	40	20	30	20	23	3	20	3	18	10	17	10	24	8	28	6	31	1	35.2	18.4
Baltimore	42	31	48	33	33	23	38	20	48	34	50	35	42	25	34	16	17	8	24	8	22	16	17	13	27	6	33	15	36	17	37.9	24.9
Darlington Academy	42	28	41	28	29	23	36	15	46	36	45	31	38	23	27	12	17	6	24	5	20	14	16	13	27	10	30	12	34	12	36.4	22.3
Fallston School *1	41	32	41	30	25	19	34	17	43	37	42	31	27	23	31	17	16	6	23	6	20	15	16	10	25	10	28	14	31	19	.....	.....
Frederick	36	22	40	36	30	26	28	18	44	26	47	33	30	20	33	25	17	7	22	5	25	13	16	8	28	11	31	16	34	9	36.5	22.7
Great Falls *3	36	33	40	39	35	28	34	25	43	32	46	29	36	24	33	29	14	9	20	7	23	13	13	11	27	6	32	6	31	6	35.4	23.7
Johns Hopkins Hospital	48	29	44	33	26	19	44	17	59	19	49	34	32	23	33	15	17	7	24	5	21	8	16	11	28	10	36	12	36	17	37.5	21.5
McDonogh School	41	28	45	31	..	..	..	..	45	17	44	33	..	..	32	18	21	6	21	4	17	16	22	9	24	9	28	13	30	14	35.3	21.9
Mt. St. Mary's College	36	29	45	29	30	17	30	15	43	29	43	28	40	18	28	14	18	4	20	3	20	10	16	10	25	9	30	12	32	12	35.3	20.8
New Market	37	30	39	34	28	24	31	17	43	28	45	32	28	20	30	24	14	5	20	4	22	11	15	7	24	9	29	12	32	10	34.2	22.4
St. Charles College	40	29	42	31	33	25	30	22	45	33	45	33	33	24	30	21	18	10	24	8	22	18	18	10	27	10	31	15	38	15	37.4	25.3
Taneytown (Milton Academy)	44	27	40	31	29	27	35	17	42	21	44	30	30	20	31	21	15	4	23	4	21	7	17	9	27	10	33	8	37	7	35.6	20.4
Van Bibber	45	34	43	26	40	16	44	20	45	24	44	25	29	24	32	8	16	7	24	7	21	14	17	11	27	13	29	14	33	14	35.8	21.4
Western Maryland College	42	34	37	23	27	17	39	20	42	32	40	19	30	20	22	4	12	2	20	6	19	9	12	8	20	12	39	13	36	10	34.5	22.1
Woodstock College	45	27	40	33	33	26	44	18	47	21	47	34	35	23	32	22	19	7	22	6	27	7	33	12	30	10	30	8	35	4	38.5	19.9
SOUTHERN MARYLAND.																																
Annapolis	46	41	46	33	45	32	52	32	49	39	51	37	52	37	50	18	27	17	25	10	44	21	33	21	37	15	40	30	43	25	43.1	30.8
Charlotte Hall School	48	29	50	32	42	28	41	23	52	34	50	32	46	26	37	24	25	12	32	10	21	18	20	11	28	5	33	15	40	20	41.6	24.7
Cherryfields *2	50	35	43	36	29	29	42	34	44	36	45	37	32	29	34	32	16	14	22	14	22	21	16	14	20	15	21	16	27	20	.....	.....
Distributing Reservoir, D. C.*3	37	33	39	39	30	28	34	26	45	34	47	33	31	25	32	29	15	9	22	9	22	17	15	11	27	13	29	9	33	13	35.4	25.2
Jewell	46	28	48	30	32	24	36	22	49	33	49	31	42	24	43	26	22	8	24	6	24	15	15	10	26	7	30	10	35	12	39.3	23.1
Laurel	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Maryland Agricultural College	..	..	..	..	..	..	..	..	..	..	47	31	34	26	33	24	19	11	26	10	24	18	17	13	27	13	30	-2	37	3	35.5	19.5
Receiving Reservoir, D. C.*3	37	34	40	40	30	28	34	25	47	32	47	32	31	25	33	29	14	8	21	8	22	17	16	11	25	13	28	13	32	8	35.0	25.1
Solomon's	47	31	51	35	36	26	37	25	53	35	50	33	45	28	40	26	26	13	30	10	24	19	24	13	29	11	31	15	36	14	40.1	26.3
Washington, D. C.	44	32	48	31	32	21	36	25	48	33	49	34	44	24	34	15	16	8	24	8	24	16	18	9	26	12	30	9	36	10	38.8	23.1
EASTERN MARYLAND.																																
Chestertown	50	30	44	35	30	22	50	18	47	30	45	32	29	25	33	25	17	9	24	8	21	8	17	10	27	12	28	13	32	12	37.0	22.9
Denton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Easton	52	27	45	41	33	26	53	17	50	22	48	30	32	26	35	23	18	11	24	9	22	17	16	14	21	13	30	13	34	8	38.3	23.5
Mardela Springs	53	28	50	34	35	22	44	18	50	32	50	33	35	25	46	24	19	11	28	10	21	15	18	13	26	11	28	10	35	6	40.2	23.9
Pocomoke City	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Princess Anne	53	27	55	31	36	20	51	19	55	37	49	29	43	22	49	23	26	12	27	10	27	10	19	12	27	11	30	8	37	3	41.9	22.4
DELAWARE.																																
Dover	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Kirkwood *1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.....	.....
Milford	49	33	51	34	35	22	42	20	55	40	49	30	43	26	35	24	29	11	29	9	23	20	23	13	31	11	37	13	42	10	41.4	24.5
Millsboro	40	31	51	43	55	34	34	17	48	42	55	32	49	27	43	22	40	9	26	8	25	16	20	15	20	10	21	9	29	3	40.9	25.0
Newark (Delaware College)	43	27	49	30	30	18	34	15	46	32	43	33	40	22	28	16	14	7	24	6	22	15	16	11	26	11	30	13	33	10	35.5	21.8
Seaford	51	30	56	33	35	24	42	18	55	28	50	30	43	26	39	24	26	10	25	8	21	16	19	11	26	11	33	11	34	8	40.6	23.9

* 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.
† 12 degrees below zero. ‡ 10 degrees below zero. § 11 degrees below zero.

TOTAL PRECIPITATION, JANUARY, 1897.



Daily precipitation for Maryland and Delaware, January, 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				.40								.20	†	†	.10		.50	†	.40					.10			.20					1.90
Cumberland (1)				.40							†			.25			.80							.30					.05			1.80
Cumberland (2)													.30					1.00			.46										1.76
Deer Park											.40						.80	.10						.70			.80					2.80
Flintstone					.54												.64				.54						.30					2.02
Grantsville				.33	.16	.04					.80	.12		.05			1.00	.18	.09	.50				.50			.20					3.97
Green Spring Furnace					.82										.10		.31			.50		.03					.20					1.96
Hagerstown											.10			.05			.32			.10							.30					.87
Sharpsburg				.41						†	†		†	.09			.13			.49		†		†				.19			1.31
Sunnyside				.38	.13						.16	.40	†	.02	.16		.42	.21	†	.22	.19	.08	.18	.26			.20		.06			3.07
Westernport				.70								.25	†		†	.03	.40	†		.28				.12			.10					1.88
NORTHERN-CENTRAL MARYLAND.																														
Bachman's Valley				†				†					.04	.06	†		.60	†	†	1.00				†			.10	.40				2.20
Baltimore		.02	.03		.21	†						†	.01	.06	.16	.02	.10	.10	†	.10	.84	†		†			.26	.14				2.05
Darlington Academy				.25											.33		.14			1.06							.15					1.93
Fallston School	†		.03		.33							†	†		.26	.06	†	.18	†	†	1.15	†		†				.18				2.19
Frederick					†	.25						†		.03	.05		.05				.79						.22					1.39
Great Falls																					1.00							.22				1.22
Johns Hopkins Hospital			.02		.16									.05							1.00							.58				1.81
McDonogh School																																
Mt. St. Mary's College					.45						†	†	†	.08	.05		.23	.03	†	.35	.72	.13		.02			.20					2.26
New Market				.32	†							†	.04	†	.07		.19	†		.84		†					.20					1.66
St. Charles College				†	.39									†	.20		.12				.72							.50				1.93
Taneytown				.30									.01	.01	.10		.12				1.03			.02			.25					1.84
Van Bibber		†		.28	†								†	.10	.20		.10			1.38				†		.02					2.08
Western Maryland College										.37			†	.10	.02	.57				.40						.60					2.06
Woodstock College		†	†	.10	†							.10	†	.33		†				.75							.50					1.78
SOUTHERN MARYLAND.																														
Annapolis																														
Charlotte Hall School			.06										.15		†					†	1.04			†			†	.50				1.75
Cherryfields		†									†	†	.28	†			.10	.12		.50	.32						.60					1.92
Distributing Reservoir, D. C.																		.07			.87							.17				1.11
Jewell					.13										.23		.20			1.40				†			.23					2.19
Laurel				.30									†	†	†					1.25							.50					2.05
Maryland Agricultural College					.29	†								.09	.15	†		.10		†	.94							.21				1.76
Receiving Reservoir, D. C.																		.10			.90							.16				1.16
Solomon's												†	.02	.10	.04		.09			.08	.75			†			.45	.15				1.68
Washington, D. C			†	†	.20	†						†	.02	.05	.05		.04	.06		.13	.91						.21	.31				1.98
EASTERN MARYLAND.																														
Chestertown		†			.17									.28			.15			1.20				†			.60					2.40
Denton																																
Easton				.19													.40				1.05						.40					2.04
Mardela Springs												.02	.10	.03	.28		.08				1.15			.02				.80				2.48
Pocomoke City																																
Princess Anne											†		†	.35	.07		.10	.09		.18	.39			†			.37	.10				1.65
DELAWARE.																														
Dover																																
Kirkwood																																
Milford															.38													.43				.81
Millsboro					†						†	.15	.30	.11			.06		†	.13	.99			.05			.05	.95				2.69
Newark (Delaware College)			.02		.12								†	.18			.05	.23		†	1.40			†				.35				2.35
Seaford					.02						†			.14	.22				†		1.20			.03				.55				2.16

† Trace, when precipitation is less than 0.01 inch.