

U. S. DEPARTMENT OF AGRICULTURE.

ANNUAL SUMMARY. 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

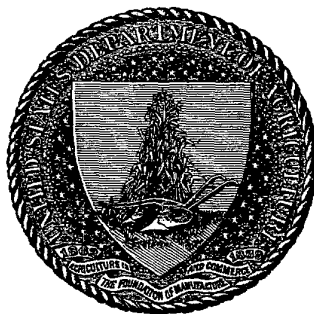
WILLIS L. MOORE,

CHIEF OF WEATHER BUREAU.

BY

F. J. WALZ,

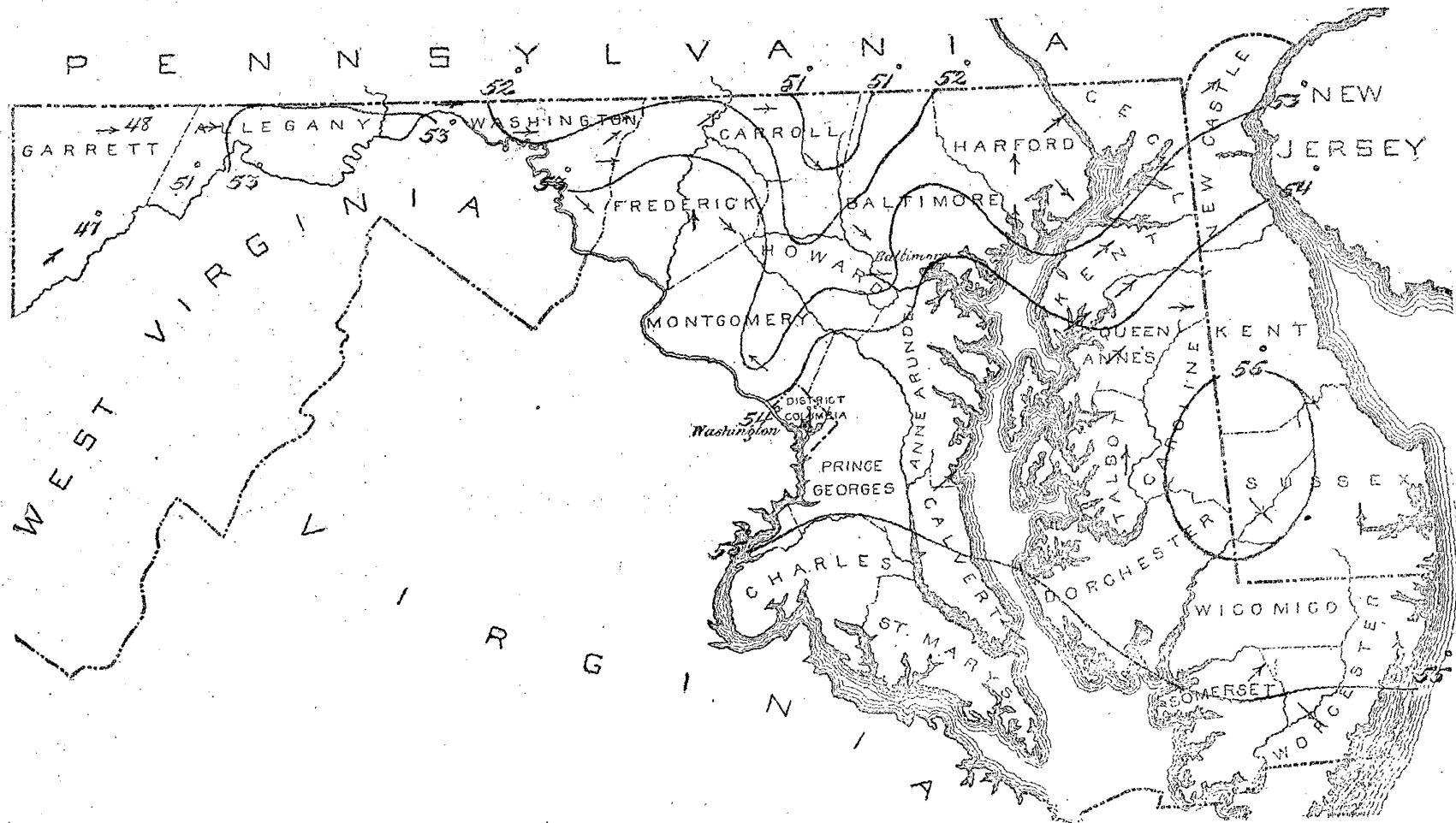
SECTION DIRECTOR.



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

1899.

ANNUAL MEAN ISOTHERMS AND PREVAILING WINDS, 1899.



U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

CENTRAL OFFICE: WASHINGTON, D. C.

MARYLAND AND DELAWARE SECTION,

F. J. WALZ, Section Director.

BALTIMORE, MD.

VOL. IV.

BALTIMORE, MD.

Annual.

CLIMATOLOGY OF THE YEAR 1899.

The annual mean temperature for 1899 in Maryland and Delaware, 53.5° , was less than a degree below normal. The lowest annual mean was 47° , and, as usual, was recorded in the mountains of Garrett County. Eastward from this coldest region the temperatures rose appreciably in central Allegany County and the valley districts of Washington County, but fell again over the northern portion of the Piedmont Plateau to a mean of 51° , while throughout the remainder of the Section they ranged from 52° to 57° , the latter record occurring in the lower part of Calvert County, at Solomon's.

A cold wave of unusual severity in early February lowered the average temperature for that month far below the normal, and at the time of its greatest intensity produced minimum temperatures of 4° to 26° below zero over the entire Section. For the third successive season, the peach crop of Maryland and Delaware was practically ruined, the cold being so severe as to kill the young wood of the trees in many localities. The heavy snows and high, whistling winds combined to produce a genuine blizzard on the 13th. All in all, this was one of the most remarkable weather periods ever experienced in Maryland and Delaware, and was described at some length in the February report. The other months of the year were not entirely without abnormal temperature features, but they were not sufficiently prolonged to cause marked departures from normal conditions.

The final killing frosts of spring were produced at about their usual date by a cold wave on April 10th and 11th. A later cool period, on May 25th and 26th, nipped tomato and melon vines and some early vegetables in the southern counties of the Eastern Shore, where truck operations were more advanced than elsewhere in the Section. The first cold wave of note in the fall prevailed from September 28th to October 3d, and brought killing frosts to the western, northern and central districts. Talbot County was visited later, on November 13th, and it was not until November 25th that the frost line finally overspread the State, passing through southern Calvert County on that date.

The heated terms of the year were of brief duration. The highest temperatures were experienced on June 6th to 8th, July 21st and 22d, and August 20th. Several deaths from sunstroke were reported during the first two of these hot spells.

The annual mean precipitation, 40.84 inches, was practically normal in amount. The greatest quantities fell in the

plateau region and over the southwestern part of Garrett County; the least in Allegany and western Washington counties. The monthly amounts were generally above normal from January to March, inclusive. The summer rains were unequally distributed; some districts having a surplus, others a deficiency. September precipitation was sufficient in all districts, except Delaware. The October amounts were seasonable in only a few localities, drouth conditions being prevalent, especially in Western Maryland, where forest fires were of frequent occurrence because of the lack of rainfall. Precipitation for November and December was below normal in all sections.

The opening month of the year gave snow depths of five to eight inches, but it remained for February to furnish more than three-fourths of the total annual amount. There was a period of almost continuous snowfall from February 5th to 13th, and on the night of the last-named date the depths were from two to three feet on the level, and high winds had blown drifts of ten to twenty feet in places. A general blockade ensued, lasting for nearly three days in the larger cities, while in some of the outlying districts the roads were impassable for more than a week. This heavy snowstorm was more intense along the Chesapeake than elsewhere in the Section, and, as a result, the greatest annual depth, 66.3 inches, instead of occurring at one of the mountain stations, was reported from Easton, Talbot County. March snowfall ranged in depth from two to five inches, while in April there were light falls in the northern and western counties, but none elsewhere. The first flurries of fall were reported from Frostburg and Sunnyside, on September 30th, but there was an entire absence of snow in October. The remainder of the winter was unusually open; the only amounts for November were light falls in Western Maryland, and in December the total monthly depths were from one to four inches only.

Frequent damage was wrought during the summer by local electrical storms, and the loss of life and property during the year by lightning stroke was unusually heavy. As early as February 3d, the Section was visited by a general thunderstorm, and a girl was struck by lightning and killed in Dorchester County. The most noteworthy of the year, however, was the severe wind, hail and thunder storm of August 2d, which was very destructive throughout the territory from eastern Washington and western Carroll counties southeastward along the Patuxent River to Calvert and St. Mary's counties. Winds of tornadic violence, heavy hail and flooding rains marked its progress, and, in addition to the destruction of promising crops, there was a loss of 142 buildings, considerable live stock and seven human lives. A detailed account of this storm was published in the August bulletin.

The West Indian hurricane that appeared on the island of Dominica on the morning of August 7th, and which was so destructive to property and life in Porto Rico, threatened this Section in its subsequent course northward along the Atlantic seaboard, but it passed off to the northeastward from the Virginia coast on the 19th, without affecting this region. The winter storms that occurred were without great violence, and no casualties were reported by the shipping or other interests.

ANNUAL SUMMARY.**ATMOSPHERIC PRESSURE—IN INCHES AND HUNDREDTHS.**

Annual mean at Washington, D. C., 30.08; at Baltimore, 30.06; average, 30.07; highest, 30.98, at Baltimore and Washington, D. C., on January 2d; lowest, 29.04, at Washington, D. C., on March 19th.

TEMPERATURE—IN DEGREES FAHRENHEIT.

The annual mean (entire territory), 53.5°, was 0.3° below the normal.

The highest annual mean was 56.9°, at Solomon's.

The lowest annual mean was 47.1°, at Deer Park.

The highest temperature recorded during the year was 102°, at Boettcherville, on June 23d, and at Sandy Point, on August 5th.

The lowest temperature recorded during the year was —26°, at Sunnyside, on February 10th.

The annual range of temperature, within the sectional limits, was 128°.

The greatest local annual range was 125°, at Chase.

The least local annual range was 100°, at Sudlersville.

The greatest local daily range in the year was 57°, at Sunnyside, on January 2.

The least local daily range in the year was 0°, at several stations and on a number of dates.

PRECIPITATION—IN INCHES AND HUNDREDTHS.

The annual average (entire territory), 40.84, was 0.34 below the normal.

The greatest annual amount was 51.38, at Bachman's Valley.

The least annual amount was 28.69, at Boettcherville.

The greatest local monthly fall was 9.43, at McDonogh, in September.

The least local monthly fall was 0.39, at Deer Park, in October.

The greatest fall in twenty-four hours was 5.35, at St. Charles College, on September 26th-27th.

The average number of rainy days for the year was 98.

WIND.

The prevailing wind direction for the year was from the northwest.

The total annual wind movement was 45,355 miles at Baltimore, and 56,795 miles at Washington, D. C.

The maximum wind velocity for the year was 48 miles per hour from the northwest, at Washington, D. C., on February 13th.

MISCELLANEOUS.

The average number of clear days, 181.

The average number of partly cloudy days, 93.

The average number of cloudy days, 91.

The sunshine received during the year at Baltimore was 64 per cent. of the possible amount.

Thunderstorms occurred in every month.

Hail fell in every month except October.

Sleet fell in January, February, March, April and November.

Solar halos were observed in every month except June and July.

Lunar halos were observed in every month but May.

Lunar coronæ were observed in every month but September.

Auroral displays were witnessed in January, February, March, April, June, October and December.

Solar coronæ were seen in April, June and December.

Mock suns were observed in January to May, July and November.

CLIMATE AND CROP REVIEW—BY MONTHS.

Snow covering was hardly sufficient during the late winter of 1898, but winter grain and grasses entered the present year in good condition.

January temperatures were slightly above normal. During the colder periods there was a lack of snow protection, and winter growth began to show the effects of frosts.

The freezing and lifting of the soil continued in early February, but the unprecedented cold that followed from the 9th to 15th was accompanied by heavy snows, so that but little injury ensued save on uplands blown bare by the winds. The very low temperatures were more than the peach buds could withstand, however, and the pear crop was also injured, though to a less extent.

The soil was damp and cold during March, and conditions were generally unfavorable to farming operations and to growth, although planting made good headway in the southern counties. Maple syrup yielded well in Western Maryland.

April had three brief rainy periods, and was slightly warmer than usual. The month was highly favorable to agriculture: Oats grew nicely; wheat, rye, and clover improved; truck prospered; tobacco plants were reported plentiful and thriving, and plowing and planting of corn land made good progress.

Normal temperatures prevailed during May, except for a period of unusually late frosts, which caused some injury to truck farms on the Eastern Shore. Showers were ample and well distributed. Grain headed rapidly toward the close of the month. The acreage of tomatoes, already large, was further increased. The outlook was favorable for a large yield of tobacco.

June was moderately warm, with sufficient rainfall. Severe hailstorms caused local damage on the 9th. The month was favorable otherwise, especially for the ripening of grain. By the close of June the most of the wheat crop had been secured. The quality was excellent, and the yields were good in Southern and Eastern Maryland, but in the northern-central counties, where the larger part of the crop is raised, there was a shortage. Hay gave light returns, except in Western Maryland, where a full crop was saved.

July gave normal temperatures, but the rainfall was irregular. The close of the wheat harvest took place in Garrett County. Rye gave satisfactory, though not full, yields in nearly all localities. Oats were also a favored crop. Light peach shipments were made from the few bearing orchards, and some early tomatoes and apples were marketed about the middle of the month.

August was dry in the western counties until the 27th, when heavy rains fell; elsewhere moisture was sufficient for all needs. The severe storm of the 2d caused great destruction to corn, fruit, tobacco, trees and buildings over the area visited. In other sections the month was favorable to crops. Some tobacco was housed by the middle of the month, and excellent yields of fine quality were in promise outside of the storm-stricken districts. A good crop of early corn was practically assured. Tomatoes gave large returns. Potatoes did not yield well.

September rainfall was ample, but there was a slight deficiency in temperature. Late corn turned out well. The tobacco crop, as a whole, was large, and was saved in fine condition. Late potatoes were short.

Precipitation was deficient during the closing months of the year, and fall plowing was somewhat delayed. Many farmers preferred to sow rather late, through fear of the Hessian fly, which made its appearance, nevertheless, about the middle of November. A cold wave at the close of December found wheat unprotected by snow, but the open winter had induced a heavy and vigorous growth, and the general reports were that the crop at that time presented a more than usually promising appearance.

Climatological data for the year 1899.

Stations.	Counties.	Elevation, feet.	Temperature (degrees Fahrenheit).						Precipitation (inches).						Number rainy days.	Sky.			Prevailing direction of wind.	
			Length of record, years.	Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	Total for the year.	Greatest monthly.	Month.	Least monthly.	Month.		Total snowfall.	Number clear days.	Number partly cloudy days.		Number cloudy days.
WESTERN MARYLAND.																				
Boettcherville.....	Allegany.....	700	9	53.5	102	June 23	-19	Feb. 10	9	28.69	4.94	May	0.75	Aug.	25.5	87				
Chewsville.....	Washington.....	530	2	52.7	99	Aug. 20	-20	Feb. 13	2	36.78	5.08	May	0.95	Apr.		89	164	148	53	SW.
Clear Spring.....	Washington.....	500		51.5	97	July 28	-15	Feb. 10	2						34.4	106				
Cumberland.....	Allegany.....	722	29	56.0	98	Aug. 19	-12	Feb. 9	29	35.78	5.36	Feb.	1.28	Aug.	38.9	97				
Deer Park.....	Garrett.....	2,457	7	47.1	90	June 4	-25	Feb. 11	7	37.92	6.44	May	0.39	Oct.		90				
Frostburg.....	Allegany.....	2,200	2		99	Aug. 21	-22	Feb. 10	2	43.47	5.95	May	0.96	Aug.	39.9	140	234	0	131	W.
Grantsville.....	Garrett.....	2,400	6	47.9	92	July 26	-22	Feb. 10	6	39.86	6.73	May	1.90	Jan.	59.5	99	112	110	143	W.
Green Spring Fur.....	Washington.....	450	7	52.8	98	July 27	-14	Feb. 11	7	37.08	5.75	May	1.22	Apr.	39.4	102	227	76	62	W.
Nancook.....	Washington.....	455	2	52.9	101	Aug. 20	-18	Feb. 11	2	33.16	4.55	June	1.20	Nov.		74	121 ^a	151 ^a	92 ^a	W.
Westernport.....	Allegany.....	1,000	6	51.0	93	June 5	-13	Feb. 9	6	36.84	6.62	May	1.38	Nov.	29.8	107				
Entire Section.....				51.8	102	June 23	-26	Feb. 10		37.87	7.42	May	0.39	Oct.	42.0	102	174	94	97	W.
NORTHERN-CEN. MD.																				
Bachman's Valley.....	Carroll.....	850	7	50.6	94	July 22	-23	Feb. 11	7	51.38	7.28	Sept.	2.32	Oct.	42.5	80	254	46	63	NW.
Baltimore.....	Baltimore.....	123	49	55.0	98	June 6	-7	Feb. 10	52	40.59	7.09	Sept.	1.40	Dec.	41.5	118	147	111	107	SE.
Baltimore J. H. Hos.....	Baltimore.....	124	6	53.6	98	June 6	-10	Feb. 10	2	45.01	7.21	Sept.	1.40	Dec.	42.6	120	203	54	108	NW.
Chase.....	Baltimore.....	25	2	52.2	100	June 6	-25	Feb. 10	2	40.29	6.84	Feb.	1.15	Dec.	39.5	94	182 ^a	110 ^a	72 ^a	S.
Darlington Academy.....	Harford.....	339	9	52.6	96	June 6	-12	Feb. 11	9	36.95	5.31	May	1.31	June	33.8	73	196 ^b	110 ^b	57 ^b	SW.
Fallston School.....	Harford.....	450	30	52.2	93	June 6	-14	Feb. 10	30	41.93	7.29	Sept.	1.70	Dec.	33.5	119	79	232	54	S.
Frederick.....	Frederick.....	275	25	53.8	97	Aug. 21	-10	Feb. 11	25	37.92	5.35	Feb.	1.33	Nov.	42.7	109	175	112	78	SW.
Great Falls.....	Montgomery.....	200	9	52.9	95	June 7	-14	Feb. 11	10	34.94	4.88	Feb.	1.28	Oct.	40.5	82	228	0	137	SE.
Mt. St. Mary's College.....	Frederick.....	720	34	52.7	99	Aug. 20	-15	Feb. 10	31	38.56	5.28	Sept.	1.71	Nov.	42.0	99	141 ^c	128 ^c	89 ^c	SW.
New Market.....	Frederick.....	550	25	53.4	97	June 7	-14	Feb. 11	25	38.49	5.29	Sept.	1.04	Apr.	42.3	102	118	175	72	NW.
St. Charles College.....	Howard.....	500	7	52.4	95	Aug. 21	-8	Jan. 2	8	48.87	9.35	Sept.	1.59	Dec.	44.3	115	131	127	107	W.
Taneytown.....	Carroll.....	490	4				-16	Feb. 11	8	36.40	5.57	Feb.	1.78	Nov.	40.3	105	165 ^d	92 ^d	99 ^d	NW.
Van Bibber.....	Harford.....	22	5	52.4	95	June 6	-12	Feb. 9	5		7.00	Sept.	1.85	Dec.		127	181 ^e	76 ^e	105 ^e	NW.
Woodstock College.....	Baltimore.....	392	29	52.9	95	June 6	-13	Feb. 11	29	40.80	5.96	Sept.	1.51	Dec.	32.4	103	186	95	84	NW.
Entire Section.....				53.0	100	June 6	-25	Feb. 10		42.06	9.43	Sept.	0.80	Nov.	39.4	102	174	102	89	NW.
SOUTHERN MARYLAND.																				
Distribut'g Reservoir.....	Dist. of Columbia.....	120	9	55.6	96	June 6	-13	Feb. 11	8	35.01	5.39	Sept.	1.03	Apr.		86				
Jewell.....	Anne Arundel.....	165	11	54.1	96	June 7	-14	Feb. 10	11	42.52	5.97	Aug.	1.27	Apr.	34.5	85	223 ^f	70 ^f	64 ^f	SW.
Laurel.....	Prince George's.....	150	5	54.2	101	June 6	-18	Feb. 11	5	45.41	5.49	Sept.	1.42	Nov.	29.0	84	132	132	101	
Reevely Reservoir.....	Dist. of Columbia.....	160	9	55.0	94	June 6	-14	Feb. 11	8	41.62	6.78	Sept.	1.17	Oct.		89				
Solomon's.....	Calvert.....	20	8	56.9	99	Sept. 6	-5	Feb. 10	8	38.38	5.28	May	0.93	Nov.	40.0	109	124	75	166	NW.
Washington, D. C.....	Dist. of Columbia.....	112	29	54.4	97	June 7	-15	Feb. 11	29	44.02	6.17	Feb.	1.54	Apr.	49.8	125	171	98	96	S.
Entire Section.....				55.0	101	June 6	-19	Feb. 11		42.53	8.00	Feb.	0.93	Nov.	39.0	93	176	101	88	NW.
EASTERN MARYLAND.																				
Chestertown.....	Kent.....	80	14	53.7	91	June 7	-9	Feb. 11	14	41.12	6.39	Feb.	0.71	Nov.	43.2	98	204	99	62	SW.
Coleman.....	Kent.....	80	2		98	July 22	-10	Feb. 11	2	47.13	8.85	Feb.	1.08	June	41.0	88	201	81	83	SW.
Easton.....	Talbot.....	35	9	54.2	95	June 8	-15	Feb. 11	9	43.62	8.61	Feb.	1.11	Apr.	66.3	108	220	83	62	S.
Princess Anne.....	Somerset.....	20	2	54.6	95	June 8	-10	Feb. 15	6	36.14	6.26	July	0.68	Nov.	36.3	110	77	226	62	SW.
Rock Hall.....	Kent.....	25	2	53.9	95	June 7	-14	Feb. 15	2	39.23	5.48	Aug.	1.03	Apr.	37.7	105	186	84	95	SW.
Sandy Point.....	Worcester.....	12	2		102	Aug. 5			2	34.55	5.75	Feb.	0.87	Sept.		68	211	5	149	S.
Sudlersville.....	Queen Anne.....		2	54.8	93	June 6	-7	Feb. 11	2						93	186	122	55		W.
Entire Section.....				54.9	102	Aug. 5	-15	Feb. 11		40.53	8.85	Feb.	0.55	Nov.	40.3	91	179	103	83	SW.
DELAWARE.																				
Millsboro.....	Sussex.....	23	7	54.6	100	June 9	-10	Feb. 10	7	44.93	7.66	Aug.	1.11	June		96	202	79	84	S.
Newark (Del. Coll.).....	Newcastle.....	135	6	52.2	98	June 22	-12	Feb. 11	6	40.31	6.03	May	1.63	Apr.	39.0	105	165	116	84	SW.
Seaford.....	Sussex.....	40	8	55.4	99	June 6	-11	Feb. 11	8	43.07	8.37	July	1.29	Dec.	42.5	98	200	55	110	NW.
Entire Section.....				54.4	100	June 9	-14	Feb. 11		42.19	8.37	July	1.11	June	42.6	96	205	69	90	NW.
Entire Territory.....				53.5	102	June 23	-26	Feb. 10		40.84	9.43	Sept.	0.39	Oct.	40.3	98	181	93	91	NW.

NOTE.—A number of stations having incomplete annual records are omitted from the body of this table, but all obtainable reports have been considered in the entries of averages and extremes.

! And Dec.

† And Aug. 5.

TABLE OF KILLING FROSTS.

Stations.	Last in spring.	First in autumn.	Stations.	Last in spring.	First in autumn.	Stations.	Last in spring.	First in autumn.
Annapolis.....	.....	Sept. 30	Frostburg.....	.....	Sept. 30	Pocomoke City.....	May 25	Oct. 1
Baltimore.....	.....	Nov. 4	Grantsville.....	.....	Oct. 2	Princess Anne.....	May 26	Sept. 28
Boettcherville.....	.....	Oct. 2	Green Spring Furnace.....	.....	Oct. 1	Queentown.....	.....	Oct. 21
Boonsboro.....	.....	Oct. 1	Harney.....	.....	Oct. 1	Rock Hall.....	.....	Oct. 2
Charlotte Hall School.....	.....	Oct. 1	Jewell.....	.....	Oct. 22	St. Charles College.....	.....	Oct. 2
Chase.....	.....	Oct. 3	Johns Hopkins Hosp'l.....	.....	Sept. 28	Seaford, Del.....	.....	Oct. 22
Chestertown.....	April 11	Oct. 22	Laurel.....	.....	Oct. 1	Sharpsburg.....	.....	Oct. 1
Chewsville.....	.....	Oct. 1	Mardela Springs.....	April 11	Oct. 1	Smithsburg.....	.....	Oct. 1
Clear Spring.....	.....	Oct. 1	Md. Agr. College.....	.....	Oct. 1	Solomons.....	.....	Nov. 25
Darlington Academy.....	.....	Sept. 30	Milford, Del.....	.....	Oct. 2	Sudlersville.....	.....	Oct. 4
Deer Park.....	.....	Sept. 14	Millsboro, Del.....	April 6	Oct. 3	Sunnyside.....	April 11	Sept. 30
Easton.....	April 6	Nov. 13	Mt. St. Mary's College.....	.....	Oct. 7	Taneytown.....	.....	Sept. 28
Fallston School.....	April 17	Oct. 3	Newark, Del.....	April 11	Oct. 3	Washington, D. C.....	.....	Oct. 2
Frederick.....	.....	Oct. 1	New Market.....	.....	Oct. 1	Woodstock College.....	April 4	Oct. 2

Monthly and annual temperatures for the year 1899, with departures from the normal.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Annual.	
Stations.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.	Temperature.	Departure.
WESTERN MARYLAND.																										
Blue Mountain.....	.....	.....	.....	.....	36.5	+3.3	55.4	+4.4	64.6	+2.6	73.5	+2.5	75.3	+1.7	74.4	+3.0	65.4	+0.4	56.6	+4.9	44.2	+3.2	33.4	-1.6	53.5	+1.8
Boettcheville.....	30.5	+2.1	26.4	-4.6	43.1	.....	54.5	.....	64.6	.....	73.5	.....	75.3	.....	74.4	.....	65.4	.....	56.6	.....	44.2	.....	33.4	.....	53.5	.....
Boonsboro A.....	.....	.....	24.8	.....	40.0	.....	55.1	.....	64.4	.....	73.6	.....	77.3	.....	75.6	.....	66.0	.....	57.7	.....	44.0	.....	34.6	.....	.....	.....
Boonsboro B.....	31.5	.....	24.3	.....	39.0	.....	53.6	.....	64.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chewsville.....	31.8	.....	23.9	.....	39.9	.....	52.0	.....	63.6	.....	75.0	.....	74.6	.....	74.2	.....	64.6	.....	55.9	.....	43.3	.....	34.1	.....	52.7	.....
Clear Spring.....	28.0	.....	23.8	.....	38.1	.....	51.5	.....	63.2	.....	71.4	.....	74.1	.....	73.6	.....	63.6	.....	54.5	.....	44.0	.....	32.1	.....	51.5	.....
Cumberland.....	34.5	-0.2	28.2	-8.3	44.0	+2.1	57.4	+2.2	66.1	+0.6	74.2	+0.7	79.5	+3.3	77.6	+2.6	65.7	-3.4	59.1	+3.5	48.4	+2.6	37.4	-1.0	56.0	+0.4
Deer Park.....	27.0	+0.8	21.3	-6.2	37.9	+3.2	46.2	+1.5	57.3	-0.8	64.9	+0.6	66.8	+0.2	66.6	+1.3	58.6	-1.9	50.8	+3.9	39.7	+1.8	27.8	-0.6	47.1	+0.3
Frostburg.....	30.8	.....	25.8	.....	37.9	.....	53.4	.....	62.0	.....	69.5	.....	72.0	.....	72.2	.....	63.2	.....	56.8	.....	.....	.....	.....	.....	.....	.....
Grantsville.....	26.8	+1.0	22.2	-3.7	34.9	-1.6	47.4	+1.0	58.9	+1.3	66.2	+1.4	68.3	-0.3	68.1	+1.0	58.6	-4.5	53.2	+4.0	41.2	+1.8	28.5	-2.3	47.9	-0.1
Green Spring Furnace.....	30.2	+1.0	25.0	-6.7	41.5	+2.3	52.3	+0.9	63.6	-0.2	72.5	+1.4	75.3	-0.9	77.6	+2.8	64.4	-3.6	55.1	+3.0	42.9	+1.2	33.4	+0.9	52.8	+0.1
Hagerstown.....	30.8	-1.5	24.6	-10.2	40.0	-1.7	54.2	+0.6	63.6	.....	72.0	.....	75.3	.....	77.6	.....	64.4	.....	55.1	.....	44.1	.....	33.6	.....	.....	.....
Hancock.....	29.8	.....	23.5	.....	40.0	.....	53.8	.....	64.3	.....	74.0	.....	76.2	.....	75.4	.....	64.4	.....	56.2	.....	44.1	.....	34.7	.....	52.9	.....
Sharpsburg.....	31.2	+1.7	25.3	-4.9	40.5	-0.6	53.8	.....	64.2	+1.4	73.2	+3.0	75.8	+1.1	73.8	+0.4	63.4	-4.5	56.2	+3.2	44.1	+0.2	34.7	+0.8	.....	.....
Smithsburg A.....	30.4	.....	25.6	.....	39.4	.....	53.2	.....	62.8	.....	72.6	.....	75.4	.....	74.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smithsburg B.....	31.1	.....	24.2	.....	39.1	.....	53.6	.....	63.6	.....	72.5	.....	75.6	.....	75.0	.....	.....	.....	57.6	.....	44.5	.....	34.7	.....	.....	.....
Sunnyside.....	26.4	+2.1	21.2	-3.5	36.3	+0.2	48.0	+2.4	.....	.....	.....	.....	67.1	-0.3	67.3	+1.9	58.8	-2.4	51.0	+3.4	39.5	+2.1	26.0	-4.2	.....	.....
Westernport.....	29.1	+0.9	24.6	-4.2	39.2	+1.0	53.8	+2.7	62.2	-0.6	70.0	-1.3	72.8	-1.8	71.7	-0.3	62.0	-5.0	54.7	+3.7	41.7	+0.3	30.6	-1.5	51.0	-0.5
Average.....	30.0	+0.9	24.4	-5.8	39.3	+0.9	52.7	+2.0	63.0	+0.6	71.6	+1.0	73.7	+0.4	73.1	+1.6	63.0	-3.1	55.4	+3.7	43.3	+1.3	32.6	-1.3	51.8	+0.2
NORTHERN-CENTRAL MD.																										
Bachman's Valley.....	28.4	-0.5	21.7	-7.4	37.5	-2.3	50.4	+0.9	62.2	0.0	70.6	+0.6	74.0	-0.5	72.2	0.0	62.8	-2.2	54.8	+3.4	41.2	-0.1	31.8	-0.1	50.6	-0.7
Baltimore.....	33.4	-0.6	28.3	-7.9	41.7	+0.1	53.8	+0.8	64.5	+0.4	75.2	+1.9	77.6	+0.3	75.6	+0.9	67.0	-1.0	58.7	+1.8	47.4	+2.0	37.4	-0.1	55.3	-0.1
Baltimore J. H. Hosp'l.....	31.2	-0.8	26.9	-5.1	40.0	-1.8	52.4	-0.1	63.6	-0.2	74.3	+3.4	76.7	+0.5	75.1	-0.2	65.0	-3.6	57.0	+1.7	45.2	0.0	35.1	-0.8	53.6	-0.6
Chase.....	30.2	.....	24.5	.....	40.0	.....	50.8	.....	62.6	.....	73.2	.....	74.7	.....	73.6	.....	65.0	.....	55.6	.....	43.2	.....	32.6	.....	52.2	.....
Darlington Academy.....	30.6	+0.9	25.4	-4.8	40.5	0.0	52.3	+1.3	62.6	+0.6	73.0	+2.4	75.2	+0.4	73.0	0.0	64.4	-2.3	55.6	+2.2	44.2	+0.9	34.7	-0.5	52.6	+0.1
Fallston School.....	30.8	+0.4	25.0	-7.4	39.6	+1.2	51.7	+1.7	61.2	0.0	71.6	+1.6	74.2	0.0	73.0	+1.2	63.8	-1.8	56.2	+1.9	44.0	+1.2	34.9	+0.9	52.2	+0.1
Frederick.....	31.4	-0.5	26.2	-7.7	41.2	+0.5	53.7	+1.7	64.4	+1.4	73.6	+1.7	76.8	+0.9	75.2	+1.7	65.8	-0.8	56.8	+2.2	44.8	+1.2	35.0	+0.7	53.8	+0.2
Great Falls.....	32.7	+1.6	24.8	-8.8	40.6	-1.6	52.4	-1.0	63.8	-1.0	74.0	+0.5	75.4	-0.7	74.1	-1.1	65.4	-3.1	56.0	+1.2	43.5	-0.6	32.2	-3.8	52.9	-1.5
McDonogh.....	32.2	+1.2	25.8	-8.1	.....	.....	.....	.....	64.0	+0.3	75.8	+1.6	78.1	.....	74.2	-1.3	64.2	-1.3	56.6	+2.1	45.8	+2.1	.....	.....	.....	.....
Mt. St. Mary's College.....	30.0	0.0	24.3	-8.3	38.3	-0.2	54.4	+3.3	63.8	+3.0	72.0	+2.1	75.9	+0.6	75.2	+2.8	65.4	+0.6	54.8	+1.1	44.0	+1.7	33.8		52.7	+0.6
New Market.....	30.6	+0.2	25.7	-7.5	40.2	+0.5	54.0	+3.2	64.3	+1.0	73.5	+0.3	76.4	-0.8	75.0	+1.4	65.2	-0.9	57.2	+2.6	44.2	+1.4	34.4	-0.1	53.4	+0.1
St. Charles College.....	30.8	-2.2	24.1	-13.1	40.6	-1.7	52.0	-2.2	62.1	-2.2	72.3	+0.5	74.0	-1.0	72.6	-3.4	65.2	-4.1	56.1	+1.2	45.0	-0.8	34.6	-1.0	52.4	-2.5
Takoma Park.....	.....	.....	.....	.....	.....	.....	54.8	.....	64.6	.....	74.2	.....	76.7	.....	75.4	.....	66.9	.....	59.3	.....	46.2	.....	36.2	.....	.....	.....
Taneytown.....	30.9	-0.1	25.1	-7.3	39.9	-6.3	53.0	+1.3	63.6	0.0	72.2	+0.9	.....	.....	.....	.....	68.6	-0.3	56.0	+0.8	42.9	-1.5	34.0	+0.7	.....	.....
Van Bibber.....	29.4	-2.1	26.0	-7.0	39.7	-1.1	51.0	-1.3	62.4	-1.2	73.6	+3.4	76.2	-0.5	73.6	-0.5	63.9	-3.1	56.0	+1.7	43.0	-1.0	33.8	-0.5	52.4	-1.1
Walbrook.....	.....	.....	26.8	.....	42.9	.....	53.4	.....	63.8	.....	74.4	.....	.....	.....	75.2	.....	65.6	.....	57.3	.....	44.8	.....	.....	.....	.....	.....
Western Md. College.....	31.5	+0.5	23.6	-8.6	38.1	-4.9	51.5	-3.0	61.6	-4.4	.....	.....	.....	.....	.....	.....	.....	.....	57.3	+1.6	42.9	-4.2	32.2	-6.2	.....	.....
Woodstock College.....	31.2	+0.4	26.0	-6.9	40.6	+1.6	53.2	+2.0	63.0	+0.6	72.6	+1.8	75.8	+1.2	73.3	+1.6	64.0	-1.1	57.3	+4.2	43.8	+2.0	33.6	0.0	52.9	+0.6
Average.....	31.0	-0.2	25.3	-7.7	40.1	-1.1	52.6	+0.6	63.2	-0.2	73.2	+1.7	75.7	+0.2	74.1	+0.5	65.4	-1.8	56.6	+2.0	44.2	+0.3	34.2	-0.7	53.0	-0.5
SOUTHERN MARYLAND.																										
Annapolis.....	34.8	+0.6	28.4	-7.2	44.4	+2.3	55.0	+1.9	65.8	+2.0	76.6	+2.3	77.8	-0.7	.....	.....	67.8	-1.7	59.4	+2.1	48.0	+1.8	38.2	+0.7	.....	.....
Charlotte Hall School.....	34.2	-0.4	29.6	-5.3	44.3	-1.1	.....	.....	64.7	-0.5	.....	.....	.....	.....	75.7	-0.1	66.6	-5.1	58.9	+2.5	45.6	-1.4	.....	.....	.....	.....
Cherryfields.....	34.8	-0.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Distributing Reservoir.....	33.3	+1.4	27.0	-7.1	42.0	-1.2	55.8	+1.8	66.8	+1.6	77.2	+2.7	78.5	+1.3	76.4	+0.3	67.2	-1.7	58.3	+2.3	46.4	+1.2	38.0	+1.4	55.6	+0.3
Jewell.....	32.2	-2.1	27.0	-8.5	41.7	-0.3	53.4	-1.3	63.4	-0.9	73.7	+0.3	75.5	-0.4	73.9	-1.7	66.4	-3.1	58.0	+2.9	46.2	-0.2	37.8	-0.1	54.1	-1.3
Laurel.....	32.3	-3.5	27.1	-7.6	42.1	-1.2	54.3	+1.3	65.9	+2.8	74.5	+3.7	76.4	+1.1	74.7	-0.2	65.6	-3.9	57.1	+2.3	44.5	-1.8	35.8	-0.7	54.2	-0.6
Md. Agricultural Coll.....	.....	.....	.....	.....	43.0	-1.3	54.2	+0.9	64.0	+1.1	73.8	+2.1	76.6	+2.4	72.5	-1.2	63.7	-5.4	56.9	+1.8	44.1	-1.9	34.4	-4.6	.....	.....
Prince Fredericktown.....	.....	.....	28.9	.....	43.0	.....	54.3	.....	64.7	.....	73.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Receiving Reservoir.....	32.8	+0.9	27.6	-6.2	42.3	-0.3	54.5	+1.0	66.2	+1.3	75.9	+2.0	77.6	+0.6	75.4	-0.3	66.8	-1.3	56.0	+0.3	44.0	-1.0	40.5	+4.3	55.0	+0.1
Solomon's.....	35.3	+1.1	28.9	-6.8	42.3	-1.3	52.6	-0.7	65.4	+0.5	76.1	+1.7	79.0	+0.9	77.8	-0.3	71.4	-0.9	62.5	+3.2	50.7	+2.1	40.8	+1.7	56.9	+0.1
Washington, D. C.....	33.4	+0.2	27.4	-8.4	42.2	+0.9	54.0	+1.0	64.4	+0.5	74.3	+1.1	76.6	+0.2	.....	.....	65.8	-2.0	58.5	+2.3						

Monthly maximum temperatures for the year 1899, with dates.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
Stations.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.
WESTERN MARYLAND.																								
Blue Mountain.....					70 ^h	12	87 ⁱ	30																
Boettcherville.....	60	5	62	21	76	12	94	30	94	28	102	23	100	22	101	20	97	3	84	14	68	11	64	12
Boonsboro A.....			60	21	75	12	87	30	93	29	97	6	100	22	98	21	94	8	82	13	71	11	66	12
Boonsboro B.....	57	5	59	21	72	12	85	30	90	29														
Chewsville.....	56	4	54	22	74	12	82	30	96	29	95	23	96	27	99	20	91	6	80	14	69	11	65	12
Clear Spring.....	55	16	57	23	75	13	83	14	90 ^c	30	94 ^e	6	97	28	97	21	91	9	78	14	66	11	65	15
Cumberland.....	67	24	59	21	71	12	89	30	90	28	97	6	95	22	98	19	88	6	78	4	66	10	69	8
Deer Park.....	59	4	56	21	70	11	81 ^d	30	82	29	90 ^c	4	90	22	90	25	88	6	80	14	63	11	58	2
Frostburg.....	61	4	67	21	71	12	89	30	85	2	93	6	93	22	99	21	99	3	79	14	66	22	59	12
Grantsville.....	61	4	58	21	68	11	85	30	88	1	89	5	92	26	90	25	86	1	80	15	63	18	59	18
Green Spring Furnace.....	58	5	56	20	75	12	85	30	90	29	96	6	98	27	96	20	94	8	78	13	68	11	63	12
Hagerstown.....	55	5	55	22	75	13	85	24													70	11	65	12
Hancock.....	58	14	61	21	77	12	90	30	95	28	100	5	100	21	101	20	97	3	84	13	66	10	61	12
Sharpsburg.....	55	14	55	21	74	12			90	29	93	6	96	27	95	20	92 ^a	6	77	13	70	11	65	12
Smithsburg A.....	57	5	54	21	72	12	83	30	89	29	93	6	96	22	96	20							61	11
Smithsburg B.....	58	5	60	21	73	12	84	30	89	1	92	5	98	22	98	20			81	13	68	11	63	12
Sunnyside.....	56	23	56	21	68	12	87	30					89	3	89	25	90	3	81	15	69	21	56	1
Westernport.....	56	14	60	21	72	12	88	29	86	28	93	5	91	22	91	20	90	6	79	28	65	11	58	11
NORTHERN-CENTRAL MD.																								
Bachman's Valley.....	55	5	52	22	68	12	81	30	90 ^d	29	92	6	94	22	94	20	86	6	77	13	67	11	63	12
Baltimore.....	59	5	60	22	74	12	80	14	90	28	98	6	96	22	97	20	94	6	78	12	72	11	67	12
Baltimore, J. H. Hosp'l.....	59	4	59	22	74	12	79	25	90	28	98	6	96	22	97	20	94	6	79	13	71	11	67	12
Chase.....	54	15	64	28	70	12	80	14	90	28	100	6	98	19	95	20	93	6	78	13	67	11	67	12
Darlington Academy.....	53	5	56	22	63	18	81	26	88	28	96	6	94	22	91	5	86	6	75	12	67	11	64	12
Fallston School.....	55	5	53	22	70	12	79	14	85	28	93	6	90	22	90	20	87	6	75	13	66	11	62	12
Frederick.....	56	5	54	21	72	12	83	30	92	29	95	24	95	22	97	21	91	6	79	13	70	11	65	12
Great Falls.....	58	5	55	21	74	13	83	25	90	29	96	7	93	17	93	21	90	9	78	28	70	11	66	12
McDonogh.....	59	5	58	21					95 ⁱ	29	93	15	94	23	93	20	88	6	76	13	69	12		
Mt. St. Mary's College.....	53	5	55	22	71	12	82	30	89	29	93	6	96	22	99	20	90 ^e	6	83	13	69	11	64	12
New Market.....	55	5	56	21	73	12	85	30	91	29	97	7	96	3	97	20	91	6	78	19	69	11	64	12
St. Charles College.....	56	22	56	22	76	13	82 ^f	30	87	2	93	6	93	22	95	21	90	6	77	13	71	11	66	11
Takoma Park.....					84	14	92	28	97	6	95	13	95	20	95	6	84	13	73	13	71	11	68	12
Taneytown.....	55 ⁱ	4	57	27	71	13	81	25	90	29	95	7					80 ^k	12	79	5	69	11	65	12
Van Bibber.....	53	5	58	27	64	12	79 ^e	26	87	28	96	6	93	22	92	5	88	6	75	13	64	11	63	12
Walbrook.....			58	17	73	12	81	26	89	28	96	6			96	20	91	6	77	13	69	11		
Western Md. College.....	56 ^c	5	59	21	71	12	81	25	89	29							79	1	70	1	70	11	61	11
Woodstock College.....	58	5	57	21	73	12	82	30	89	28	95	6	95	22	90	21	88	8	83	12	70	11	66	11
SOUTHERN MARYLAND.																								
Annapolis.....	57	5	60	22	74	12	82	14	90	28	96	8	95	22			91	6	77	13	71	11	65	12
Charlotte Hall School.....	60	22	75	22	75	11			92	2					97	21	95	6	83	27	73	11		
Jewell.....	66 ^h	22	63	22	74	12	84	14	90	29	96	7	91	22	92	21	93	6	88	28	71	11	65	12
Laurel.....	56	17	60	20	74	12	88	30	94	2	101	6	97	4	98	20	95	6	79	28	70	11	67	11
Md. Agricultural Coll.....			59 ⁱ	20	71	12	84	30	92	29	98 ^e	7	95 ^e	22	96	27	87	1	79	13	70	11	64	12
Prince Fredericktown.....			62	22	74	12	87	14	90	28	97	8												
Solomon's.....	57	4	60	22	70	12	85	14	89	28	95	6	93	13	93	5	99	6	83	18	70	11	65	1
Washington, D. C.....	60	5	59	20	72	12	82	14	90	29	97	7	94	22	96	20	94	6	80	27	72	11	67	12
EASTERN MARYLAND.																								
Berlin.....					71	12	82	25	91 ^o	28	98 ^d	8							76	13	71	11	68	11
Cambridge.....					69	12	78	14	87	29	94	7	91	22	91	12	89	6	78	17	64	10	67	12
Chestertown.....	56	4	56	22	68	12	80	26	89	28	97	6	98	22	95	20	90	6	79	12	69	11	65	12
Coleman.....	55	5	58	22	74	12	83	14																
Denton.....	64	24	58	23	74	12	83	14																
Easton.....	59	24	60	22	70	12	82	26	89	29	95	8	93	23	95	21	93	6	83	13	67	11	65	11
Mardela Springs.....	63	6			71	12	82	14	88	28	94	7			92 ^h	21	92	5	79	11	68	11		
Ocean City.....	70	15	60	22	60 ^f	23																		
Pocomoke City.....	69	5	64	22	72	12			89	29	98	8	93	13	94	5	94	6	80	19	72	2	68	1
Port Deposit.....	55	5	59	27	74	12	88	25	92	31	99	6							80	12	66	3		
Princess Anne.....	63	6	62	22	72	12	82	14	86	28	95	8	90	17	92	5	94	6	81	17	70	1	67	11
Queenstown.....	57	24	58	22					89 ^f	29	94	6	94	23	94	5	99	6	80	13	68	5	65	11
Rock Hall.....	54	22	58	22	66	12			89	28	97	8	94	23	94	5								
Rock Hall.....	54	5	58	22	66	12	79	26	89	28	95	7	92	22	93	21	90	6	79	17	69	18	66	11
Sandy Point.....									95	28	101	9	95	5	102	5	95	3	84	10	71	1	62	13
Sudlersville.....	65	18	61	22	72	13	82	25	89	29	93	6	93	22	92	21	89	6	78	13	70	11	68	11
DELAWARE.																								
Millford.....	65	30	59	22	72	12			96	28	97	8	93	12	96	21	91	6	83	27			68	11
Millsboro.....	63	14	60	23	72	13	83	15	92	29	100	9	93	14	93	22	92	7	80	28	70	12	65	2
Newark (Del. College).....	54	5	54	22	70	12	80	25	88	28	97	6	98	22	94	21	90	6	77	13	65	11	65	11
Seaford.....	63	6	65	22	72	12	84	30	93	28	99	6	95	13	96	5	92	6	77	17	66	11	65	11
Wyoming.....	59	24	56	22	66 ^l	12					98	6	92										67	10

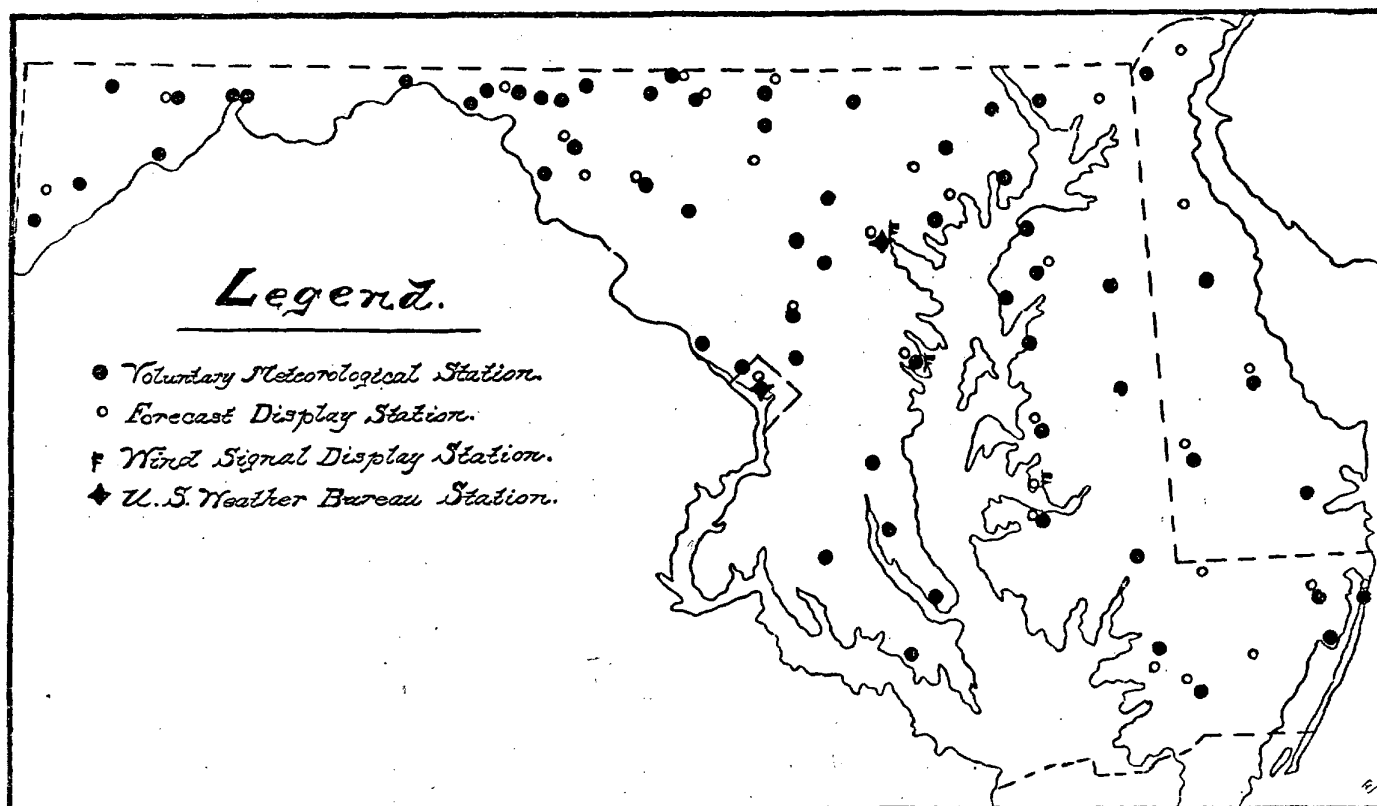
Monthly minimum temperatures for the year 1899, with dates.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		
Stations.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	
WESTERN MARYLAND.																									
Blue Mountain					18 ^h	2	23 ¹	3																	
Boethelville	-14	2	-19	10	12	7	20	4	37	22	44	18	47	1	43	17	33	28	22	1	20	27	5	31	
Boonsboro A.			-15	10	18	7	24	4	40	21	48	4	52	1	49	17	38	28	29	1	23	26	3	31	
Boonsboro B.	-2	2	-19	10	15	7	24	5	42	21															
Chewsville	0	11	-20	13	18	7	22	4	37	21	46	30	50	1	48	17	31	30	27	22	21	13	3	31	
Clear Spring	-1	2	-15	10	15	8	25	2	42 ^c	21	49 ^c	17	54	1	52	17	36	30	22	3	25	13	4	31	
Cumberland	-7	3	-12	9	18	7	30	4	44	21	54	18	61	1	54	16	40	30	35	1	31	26	8	31	
Deer Park	-23	2	-25	11	3	8	14 ^a	5	31	21	36 ^c	17	37	2	41	23	28 ^c	14	15	1	13	13	-3	31	
Frostburg	-2	2	-22	10	7	7	20	3	39	21	46	17	49	1	50	17	36	30	29	1					
Grantsville	-10	2	-22	10	5	7	18	2	31	22	39	30	41	1	41	17	31	28	21	2	17	27	-3	31	
Green Spring Furnace.	-9	2	-14	11	16	7	22	4	39	21	48	17	51	10	52	18	36	30	26	22	23	13	6	31	
Hagerstown	-18	2	-14	10	15	8	22	2																	
Hancock	-7	2	-18	11	12	7	20	4			46	17	50	1	45	17	32	28	25	1	20	13	5	31	
Sharpsburg	-8	2	-13	10	19	7			43	21	51	30	54	1	50	17									
Smithsburg A.	-11	2	-18	10	18	7	23	4	40	21	47	30	52	31	49	17									
Smithsburg B.	-2	2	-18	10	16	7	24	3	40	21	47	17	54	31	52	17			30	1	25	13	3	31	
Sunnyside	-24	2	-26	10	1	7	14	5	34	21			39	1	43	7	25	30	17	1	12	7	-6	31	
Westernport	-3	2	-13	9	12	6	25	2	40	20	46	16	50	9	48	16	29	30	29	1	24	27	6	30	
NORTHERN-CENTRAL MD.																									
Bachman's Valley.....	-11	2	-23	11	18	9	21	4	36 ^a	22	45	30	47	1	46	17	37	23	25	22	19	13	0	31	
Baltimore	6	2	-7	10	26	21	29	3	47	4	55	17	59	1	58	17	42	30	34	22	31	13	9	31	
Baltimore J. H. Hosp'l.	6	2	-10	10	24	8	27	3	43	4	52	17	55	1	58	17	41	27	33	23	27	13	7	31	
Chase	-10	2	-25	10	21	25	22	3	35	26	46	30	46	1	54	9	37	28	26	22	18	13	0	29	
Darlington Academy ..	0	2	-12	11	23	20	27	2	42	4	52	30	54	1	56	17	40	28	29	22	24	27	5	31	
Fallston School	0	2	-14	10	23	21	25	3	42	4	50	30	57	1	56	17	40	27	31	22	28	13	4	31	
Frederick	-7	2	-10	11	21	7	26	4	41	22	50	30	53	1	52	17	39	28	30	22	25	13	5	31	
Great Falls	-3	2	-14	11	19	7	24	4	40	26	50	30	51	1	55	8	38	28	30	22	25	13	0	31	
McDonogh	9	11	-11	9							53 ^a	16	60	30	56	16	35	30	32	22	30	12			
Mt. St. Mary's College..	-14 ^j	2	-15	10	20	7	30 ^a	9	45	19	54	16	58 ^a	31	53	29	40 ^a	17			25	13	1	31	
New Market	-2	2	-14	11	19	7	23	4	41	22	50	30	53	1	55	8	40	30	28	22	24	13	2	31	
St. Charles College	-8	2	-8	10	22	8	24	4	40	26	50	17	52	1	53	17	38	27	29	22	24	13	2	31	
Takoma Park											50	17	51	1	52	29	39	27	30	22	25	13	1	31	
Taneytown	-9 ⁱ	2	-16	11	21	9	23	4	39	25	50	17	52	1	49	17	35	28	27	22	22	13	4	31	
Van Bibber	-1	1	-12	9	24	20	27 ^a	2	43	3	54	16	58	10	56	16	35	30	31	21	26	12	5	30	
Walbrook .....	.....		-12	11	24	8	27	3	44	22	52	17			57	17	41	27	32	22	27	13		
Western Md. College ..	-2 ^a	11	-16	10	20	8	24	2	40	21															
Woodstock College	-6 ^f	2	-13	11	21	9	24	4	40	22	53	17	54	1	52	17	37	28	30	22	23	13	5	31	
SOUTHERN MARYLAND.																									
Annapolis	8	2	-6	10	27	8	29	2	44	22	54	9	60	9			42	30	29	1	29	13	8	31	
Charlotte Hall School..	-1	2	-19	11	18	9			36	26					57 ^c	1	39	28	27	22	22	13			
Jewell	1 ^h	2	-14	10	20	7	26	2	42	26	50	17	56	1	59	8	42	30	31	22	26	13	1	31	
Laurel	-4	2	-18	11	19	9	25	4	39	25	48	19	53	1	54	17	37	28	29	22	21	13	5	29	
Md. Agricultural Col.					22	9	27	4	39	26	51 ^c	19	56 ^c	11	52	22	36	28	28	1	20	13	-5	31	
Prince Fredericktown ..			-10	11	20	8	28	3	41	26	51	17													
Solomon's	-11	2	-5	10	22	7	31	2	47	4	56	17		61	1	64	15	47	27	39	22	33	25	10	31
Washington, D. C.	-1	2	-15	11	19	7	27	4	42	26	53	17	54	1	58	17	41	30	32	22	24	27	3	31	
EASTERN MARYLAND.																									
Berlin					26	7	32	4	45 ^c	4	49 ^a	19	59	2	62 ^a	3			37	2	30 ^a	27	15	30	
Cambridge					25	8	28	4	43	4	52	17	54	1	57	14	43	27	32	22	27	13	9	29	
Chestertown	5	2	-9	11	24	21	28	3	42	4	51	17	54	1	57	17	42	28	33	22	30	28			
Coleman	4	2	-10	11	24	21	28	3	42	4	51	17	54	1	57	17	42	28	33	22	30	28			
Denton	1	2	-14	10	26	24	28	3																	
Easton	6	2	-15	11	24	9	27	4	40	26	53	23	52	1	57	8	41	15	31	22	25	13	8	29	
Mardela Springs	10	11			25	7	25	4	38	26	51	30			58 ^b	9	40	28	29	22	22	13			
Ocean City	10	2	-4	10	30 ^a	21			41	25	53	17	55	1	55	11	43	28	31	1	27	27	8	31	
Pocomoke City	8	2	-4	10	24	8																			
Port Deposit	2	2	-10	11	23	21	24	1	42	4	50	30													
Princess Anne	1	29	-10	15	24	25	24	6	36	25	50	19	50	1	56	9	35	28	28	2	22	13	-3	31	
Queenstown	2	1	-9	9					39 ^f	24	54	17	57	10	55 ^f	7	39	30	28	28	21	24	4	7	28
Rock Hall A	1	2	-6	10	26	9			50	18	53	1	54	1	54	14	41	15	28	22	23	13	11	31	
Rock Hall B	1	2	-14	15	25	10			50	30	51	1	56	1	56	14	41	15	28	22	23	13	11	31	
Sandy Point					25	2	40	25	53	17	59	11	57	9	42	27	34	22	26	27	10	29			
Sudlersville	5	2	-7	11	25	8	29	4	42	4	54	17	53	1	55	30	43	27	32	22	25	13	8	31	
DELAWARE.																									
Milford	6	2	-12	10	25	8			39	25	54	29	61	11	60	1	42	28	33	22			5	31	
Millsboro	7	2	-10	10	20	9	24	3	38	25	53	19	52	1	58	1	39	28	31	22	24	27	1	31	
Newark (Del. College) ..	-1	2	-12	11	22	21	24	4	39	4	51	17	52	1	52	17	39	28	29	22	22	13	5	31	
Seaford	4	2	-11	11	23	9	27	6	40	25	53	17	55	1	61	29	41	15	31	22	25	13	5	31	
Wyoming	5	2	-14	11	22 ^c	9	27	2			53	17	54	1									3	31	

Monthly and annual precipitation for the year 1899, with departures from the normal.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Annual.	
Stations.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
WESTERN MARYLAND.																										
Boettcherville	1.31	-1.31	2.07	-0.85	3.62	+0.53	1.65	-1.14	4.94	+0.59	3.82	-0.07	1.62	-1.60	0.75	-1.97	4.26	+1.56	1.28	-1.18	1.19	-1.33	2.18	-0.34	28.69	-7.11
Boonsboro A .....	.....	.....	5.04	.....	3.31	.....	0.83	.....	5.35	.....	2.97	.....	2.23	.....	4.44	.....	3.64	.....	2.32	.....	1.24	.....	1.96	.....	.....	.....
Boonsboro B	2.72	.....	4.48	.....	2.44	.....	1.24	.....	4.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chewsville	2.66	.....	4.39	.....	4.28	.....	0.95	.....	5.08	.....	4.19	.....	1.10	.....	3.85	.....	4.68	.....	1.63	.....	2.46	.....	2.26	.....	36.78	.....
Clear Spring	3.42	.....	5.66	.....	5.11	.....	1.29	.....	4.28	.....	4.20	.....	2.41	.....	3.45	.....	3.75	.....	1.98	-0.48	2.15	-0.20	2.09	-0.14	35.78	+2.13
Cumberland	2.60	+0.33	5.36	+2.64	4.51	+1.48	2.25	-0.07	4.79	+1.34	2.85	-0.70	1.66	-1.74	1.28	-1.86	4.26	+1.53	1.98	-0.48	2.15	-0.20	2.09	-0.14	35.78	+2.13
Deer Park	2.33	-0.97	4.40	+1.57	5.71	+2.39	1.65	-1.41	6.44	+1.97	6.24	+2.47	2.03	-4.77	2.06	-1.70	3.05	+0.10	0.39	-1.71	0.89	-1.77	2.73	-0.55	37.92	-4.28
Frostburg	4.53	.....	4.86	.....	5.34	.....	3.40	.....	5.95	.....	4.37	.....	2.04	.....	0.96	.....	4.47	.....	1.45	.....	3.22	.....	2.88	.....	43.47	.....
Grantsville	1.90	-2.53	3.27	-0.71	5.24	+0.56	2.21	-1.18	6.73	+3.19	3.67	-0.24	3.15	-4.05	2.57	-0.78	3.77	+0.96	2.37	-0.16	2.13	-1.10	2.85	-0.33	39.56	-6.37
Green Spring Furnace	3.31	+0.96	5.13	+2.26	4.11	+1.47	1.22	-0.85	5.75	+2.08	4.17	+1.42	1.31	-2.46	3.28	-1.06	3.68	+0.25	1.70	-1.18	1.87	-1.06	2.15	-0.11	37.08	+1.72
Hagerstown	1.71	-1.07	5.42	+2.06	3.52	-0.80	0.85	-0.57	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hancock	2.84	.....	2.93	.....	3.81	.....	1.61	.....	3.61	.....	4.55	.....	1.86	.....	3.13	.....	2.89	.....	2.49	.....	1.20	.....	2.24	.....	33.16	.....
Sharpsburg	3.40	-1.50	4.35	+1.24	3.31	+0.27	.....	.....	4.55	+0.71	3.75	+0.44	2.93	-0.75	3.47	+0.51	4.04	+2.16	1.40	-1.14	2.31	-0.33	2.05	-0.39	.....	.....
Smithsburg A	2.70	.....	.....	.....	3.61	.....	0.67	.....	4.22	.....	4.29	.....	0.92	.....	5.06	.....	.....	.....	.....	.....	.....	.....	1.64	.....	.....	.....
Smithsburg B	3.54	.....	5.40	.....	4.25	.....	1.27	.....	5.43	.....	3.89	.....	1.03	.....	5.57	.....	.....	.....	2.51	.....	3.23	.....	2.46	.....	.....	.....
Sunnyside	6.59	+2.33	6.36	+1.36	7.42	+2.46	2.46	-2.20	6.82	+1.60	2.62	-2.47	3.58	-2.60	2.47	-1.14	3.76	+0.70	1.12	-2.24	2.98	-1.30	4.63	+0.63	.....	.....
Westernport	1.80	-0.97	3.87	+1.68	4.29	+1.40	1.93	-0.52	6.62	+3.58	4.53	+2.26	2.74	-1.54	1.70	-1.58	4.05	+1.65	2.20	-0.01	1.38	-0.93	1.73	0.00	36.84	+5.02
Average	2.92	-0.51	4.56	+1.26	4.35	+1.08	1.59	-0.99	5.33	+1.88	4.11	+0.80	2.04	-2.44	2.94	-1.20	3.82	+1.11	1.76	-1.01	2.06	-0.06	2.39	-0.17	37.87	-1.15
NORTHERN-CENTRAL MD.																										
Bachman's Valley	4.32	+1.77	6.10	+2.28	6.78	+2.55	2.35	-1.60	6.05	-0.86	2.42	-0.47	2.92	-1.06	4.39	+0.54	7.28	+3.67	2.32	-1.13	3.65	-0.67	2.80	-0.52	51.38	+4.50
Baltimore	3.50	+0.17	5.47	+1.97	4.93	+0.83	1.89	-1.54	3.29	-0.49	2.16	-1.86	1.64	-3.06	4.86	+0.81	7.09	+3.21	2.09	-0.89	2.27	-0.76	1.49	-1.75	40.59	-3.36
Baltimore, J. H. Hosp'l ..	4.17	.....	7.16	.....	5.75	.....	2.01	.....	3.64	.....	2.04	.....	1.85	.....	4.16	.....	7.21	.....	2.21	.....	3.48	.....	1.40	.....	45.01	.....
Chase	3.42	.....	6.84	.....	5.54	.....	1.92	.....	2.84	.....	1.50	.....	3.04	.....	2.89	.....	5.75	.....	2.42	.....	2.98	.....	1.15	.....	49.93	.....
Darlington	3.32	+0.25	4.55	+1.35	5.31	+2.38	1.65	-1.61	3.30	-1.25	3.11	-2.05	2.71	-1.62	3.75	+0.12	4.75	+1.14	2.65	-0.59	2.06	-1.85	1.59	-1.09	36.93	-4.82
Fallston	2.97	-0.77	6.09	+2.02	5.05	+0.76	1.88	-1.53	2.83	-1.59	1.94	-2.05	2.02	-4.51	4.58	-0.31	7.29	+2.97	2.23	-1.32	3.35	-0.47	1.79	-1.68	41.03	-6.39
Frederick	2.72	-0.43	5.35	+2.38	4.58	+1.56	1.43	-2.05	3.71	-0.23	3.06	-1.11	3.21	-0.45	3.28	+0.51	3.93	+0.49	3.12	+0.62	1.33	-1.61	2.20	-0.66	37.92	-0.99
Great Falls	3.81	+0.90	4.88	+1.95	4.16	+1.14	1.58	-1.06	2.42	-1.66	1.92	-0.59	3.31	-0.30	3.13	+0.58	4.27	+1.20	1.28	-0.98	2.73	-0.05	1.45	-1.35	34.94	-0.22
Harney .....	.....	.....	.....	.....	4.92	.....	1.75	.....	4.69	.....	3.39	.....	4.59	.....	4.58	.....	4.23	.....	2.11	.....	1.47	.....	2.24	.....	.....	.....
McDonogh .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mt. St. Mary's	2.45	-0.68	4.35	+1.15	4.48	+0.42	1.44	-1.66	4.53	-0.13	3.48	-0.40	1.95	-1.54	3.82	+0.34	5.28	+1.68	3.02	-0.75	1.71	-2.18	2.05	-0.92	38.56	-4.67
New Market	3.37	+0.77	4.37	+1.06	4.67	+0.98	1.04	-2.39	4.22	+0.39	2.77	-0.64	3.76	-0.33	2.57	-1.68	5.29	+1.51	2.14	-0.65	2.31	-2.19	1.98	-0.51	38.49	-3.68
St. Charles College	4.74	+2.82	5.07	+1.05	5.63	+2.56	2.29	-0.91	3.28	-0.30	4.90	+2.03	2.22	-0.05	4.40	+0.46	9.35	+5.35	2.69	-1.88	2.71	-0.59	1.59	-1.47	48.87	-9.07
Takoma Park .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Taneytown	1.98	-0.72	5.57	+2.23	2.98	-0.58	1.84	-1.65	3.65	-1.51	3.80	+0.51	2.01	-3.90	3.53	+0.19	4.86	+1.62	1.97	-0.73	1.79	-1.98	2.43	-0.23	36.40	-6.75
Van Bibber	3.50	+1.16	.....	.....	6.15	+2.52	2.24	-0.41	2.97	-1.77	2.60	+0.36	2.54	-2.49	6.48	+1.88	7.00	+4.31	4.06	+0.28	2.19	-2.81	1.85	-1.19	.....	.....
Western Md. College	3.32	+0.58	4.86	+1.22	4.95	+1.45	1.60	-1.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.89	+0.44	0.80	-3.55	.....	.....	.....	.....
Woodstock College	2.54	-0.97	5.35	+1.94	4.87	+0.89	1.74	-1.31	3.41	-0.73	3.47	-0.05	2.68	-0.96	4.76	+0.66	5.96	+2.39	2.94	-0.45	1.57	-1.77	1.51	-1.17	40.80	-1.53
Average	3.34	+0.37	5.43	+1.72	5.05	+1.34	1.79	-1.48	3.67	-0.84	2.68	-0.59	3.05	-1.28	4.20	+0.30	6.17	+2.73	2.55	-0.52	2.28	-1.58	1.85	-1.04	42.06	-0.87
SOUTHERN MARYLAND.																										
Annapolis	3.83	+0.63	4.97	+1.33	5.49	+1.22	0.98	-2.92	3.60	-1.10	2.05	-1.90	4.66	-0.09	.....	.....	4.25	+0.53	4.50	+0.66	2.80	-1.51	1.60	-1.78	.....	.....
Charlotte Hall School	4.15	+1.57	5.75	+2.38	4.61	+1.51	.....	.....	3.21	-0.67	.....	.....	.....	.....	5.58	+3.11	4.36	+3.11	4.39	+0.70	1.41	-0.69	.....	.....	.....	.....
Cherryfields	2.90	+1.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Distrib'g Reserv'r, D.C.	3.41	+0.83	4.69	+1.56	4.10	+1.01	1.03	-1.95	1.83	-2.12	1.88	-0.20	3.63	-0.06	4.38	+1.84	5.39	+3.22	1.57	-0.58	2.58	-0.25	1.52	-1.43	36.01	+2.27
Jewell	3.02	+0.20	3.94	+0.38	4.46	-0.29	1.27	-2.71	2.45	-2.67	2.71	-0.99	5.79	-1.23	5.97	+2.62	4.81	+1.12	5.07	+1.38	1.41	-1.86	1.62	-1.28	44.52	-5.33
Laurel	3.13	+0.45	4.61	+1.39	5.29	+2.55	2.08	-0.95	3.16	-1.08	3.03	-0.31	4.72	-0.08	5.46	+1.74	5.49	+3.20	5.30	+2.54	1.42	-1.65	1.72	-0.65	45.41	+7.77
Md. Agricultural Coll.	3.57	+0.33	8.00	+4.00	5.90	+2.95	1.71	-2.53	4.22	-0.52	2.50	-1.13	5.90	+1.56	.....	.....	5.45	+3.01	1.35	-1.56	2.95	-0.86	1.62	-0.53	.....	.....
Receiv'g Reserv'r, D.C.	3.57	+0.65	4.41	+1.33	4.50	+1.59	1.55	-1.49	3.25	-2.15	1.72	-0.82	6.76	+3.16	4.13	+0.76	6.78	+4.25	1.17	-1.20	3.68	-0.04	1.60	-1.46	41.62	+4.62
Solomon's	3.41	+0.81	4.54	+0.57	5.28	+2.13	1.27	-2.20	2.44	-1.50	3.09	-0.25	4.13	-0.03	3.43	+0.23	5.17	+3.22	3.21	-0.01	0.93	-2.02	1.48	-1.12	38.38	-0.17
Washington, D.C.	4.12	+0.62	6.17	+2.80	4.94</																					

CHART SHOWING OBSERVATION AND FORECAST DISPLAY STATIONS.

**EXECUTIVE OPERATIONS OF THE YEAR.**

The climate and crop work of the Section has been carried on, as heretofore, under the supervision of the Baltimore office. The weekly crop bulletins were issued regularly during the growing season, and the monthly bulletins furnished the climatic statistics for the various districts of Maryland and Delaware.

New voluntary meteorological stations were established during the year at Cambridge, Harney, Prince Fredericktown, Sudlersville, Takoma Park, and Wyoming. The stations at Cherryfields and Dover were discontinued. Efforts will be made to establish additional points of observation in the western shore districts of Southern Maryland, a section at present poorly represented. Success in this direction will result in having all parts of Maryland and Delaware represented in the meteorological reports.

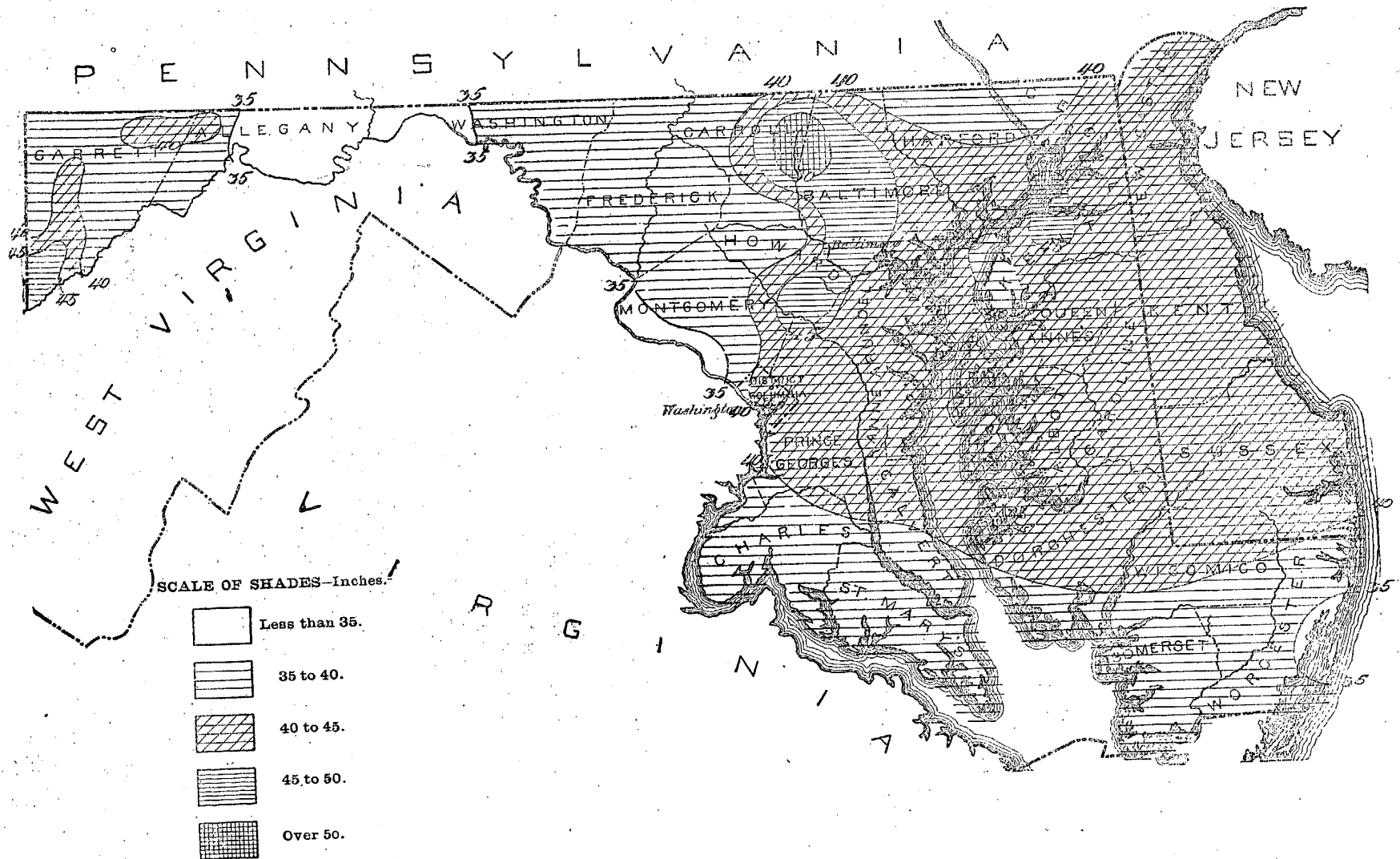
The system of forecast distribution has been considerably expanded during the year. A total of two thousand addresses are served either by telegraph, telephone, or mail. In addition to that conducted at Government expense, there is a free telegraphic forecast service over the lines of the various railroad companies to 108 places, while "emergency warnings" are telegraphed from the Central Office to 66 towns, other than those receiving the daily forecasts in this way. The mail dis-

tribution of forecasts is carried on from Washington, Philadelphia, Baltimore, and eleven centrally located sub-stations having good mailing facilities.

The above chart shows in part the system of stations co-operating in the meteorological, crop, and forecast work. Lack of space prevents a mapping of the entire field of operations. The crop reporting stations are published on the final page of this bulletin. The stations receiving emergency warnings include most of the postoffices having telegraphic connections. The forecast service by mail is conducted to nearly every town in the Section that can be reached within a reasonable time from one of the central points of distribution.

Some of the accruing benefits of the work done by our voluntary observers was brought out in Volume I of the Maryland Weather Series of publications. This report was prepared and published during the year, and presents, with other matter, a review of meteorological operations since early colonial times and the present state of our knowledge concerning the climate of Maryland and Delaware. It may not be out of place to state that the volume has received very kind treatment at the hands of reviewers, and it is only just to acknowledge that its preparation would not have been possible without the valued labors of our voluntary observers, who furnished the material on which the report was based.

TOTAL PRECIPITATION, 1899.



VOLUNTARY OBSERVERS.

Stations.	Observers.	Stations.	Observers.	Stations.	Observers.
MARYLAND.		MARYLAND—continued.		MARYLAND—continued.	
Annapolis	W. M. Abbott.	Frostburg	Mrs. G. G. Townsend.	Smithsburg a.	J. I. Miller.
Bachman's Valley	J. M. Myers.	Grantsville	J. S. Miller.	Smithsburg b.	Dr. D. W. Crowther.
Baltimore	U. S. Weather Bureau Office.	Great Falls	Washington Aqueduct.	Solomons	W. H. Marsh, M. D.
Baltimore, J. H. Hospital	W. L. Woods.	Green Spring Furnace	E. G. Kinsell.	Sudlersville	J. S. Barwick.
Berlin	Dr. E. J. Dirickson.	Hagerstown	C. B. Stouffer.	Sunnyside	J. G. Knauer.
Blue Mountain	Gno. Gibbons.	Hancock	J. D. Stotlemeyer.	Taneytown	Prof. H. Meier.
Boettcherville	F. E. Brown.	Harney	Warren Hill.	Van Bibber	H. A. Wroth.
Boonsboro a	C. E. Huntzberg & W. A. Hen-	Jewell	J. Plummer.	Walbrook	F. J. Walz.
Boonsboro b	neberger.	Laurel	Dr. T. M. Baldwin.	Westernport	Prof. O. H. Bruce.
Cambridge	S. L. Ford.	McDonogh	W. E. Byrd.	Western Md. College	Prof. Roland Watts.
Charlotte Hall	J. A. Jordan.	Md. Agricultural Coll.	Prof. H. J. Patterson.	Woodstock	D. T. O'Sullivan, S. J.
Chase	Prof. J. F. Coad.	Mardela Springs	A. E. Acworth.		
Cherryfields	J. W. Crouch.	Mt. St. Mary's College	J. A. Mitchell, Ph. D.	DELAWARE.	
Chestertown	Col. J. E. Coad.	New Market	Dr. H. H. Hopkins.	Milford	J. Y. Foulk.
Chester	Hon. M. DeK. Smith.	Ocean City	E. M. Scott.	Millsboro	Rev. L. W. Wells.
Chewsville	E. I. Oswald.	Parkton	A. A. Sparks.	Newark	Prof. W. H. Bishop.
Clear Spring a	W. E. Loose, jr.	Pocomoke City	R. M. Stevenson.	Seaford	W. T. Wallace.
Clear Spring b	W. W. Frantz.	Port Deposit	J. I. France.	Wyoming	J. A. Trope.
Coleman	J. S. Harris.	Prince Fredericktown	Alfred Presson.		
Cumberland	Howard Shriver.	Princess Anne	J. R. Stewart.	DISTRICT OF COLUMBIA.	
Darlington	Prof. A. P. Galbreath.	Queenstown	Dr. W. K. Carroll.	Distributing Reservoir	Washington Aqueduct.
Deer Park	S. P. Specht.	Rock Hall	C. N. Satterfield.	Receiving Reservoir	Washington Aqueduct.
Denton	E. C. Ramsdell.	Rock Hall b	I. L. Leary.	Takoma Park	G. A. Warren.
Easton	Henry Shreve.	St. Charles College	Rev. G. L. Harig.	Washington	U. S. Weather Bureau.
Fallston	G. G. Curtiss, A. M.	Sandy Point	J. B. Dirickson.		
Frederick	McClintock Young.	Sharpsburg	R. L. Hiberger.		

FORECAST DISPLAYMEN.

[Figures in parenthesis indicate number of post-offices or addresses supplied with forecasts from distributing centers.]

Stations.	Displaymen.	Stations.	Displaymen.	Stations.	Displaymen.
MARYLAND.		MARYLAND—continued.		DELAWARE.	
Annapolis (21)†	W. M. Abbott.	Manchester	C. J. H. Ganter.	Laurel	Sussex Countian.
Baltimore (95)	U. S. Weather Bureau Office.	Middletown	G. C. Rhoderick, jr.	Milford	J. Y. Foulk.
Baltimore, Anchorage†	T. Hansen.	Oakland	Dr. J. L. McComas.	Seaford	W. T. Wallace.
Baltimore	S. R. Shinn, B. & Lehigh R. R.	Ocean City	Capt. J. J. Demton.	Smyrna (4)	A. E. Jardine.
Baltimore	B. H. Griswold, Western Md.	Oxford†	H. S. Matthews.	Wilmington	Chief Operator, W. & N. R. R.
Berlin	R. R.	Pocomoke City	R. M. Stevenson.	Wilmington [17]	News Publishing Company.
Boonsboro (8)	L. L. Dirickson, jr.	Reckord (17)	W. P. Reckord.	DISTRICT OF COLUMBIA.	
Bradshaw (5)	C. E. Huntzberg.	Salisbury	A. J. Benjamin, Baltimore,	Washington (208)	U. S. Weather Bureau.
Cambridge	B. F. Taylor.	Salisbury (20)	Ches. & Atlantic R. R.		
Chestertown	Samuel Leman.	Singerly (6)	E. S. Adkins, P. M.	NEW YORK.	
Easton	C. S. Smith.	Snow Hill	R. W. Dill, P. M.	New York City (1)	U. S. Weather Bureau.
Emmitsburg	Dr. T. A. Council.	Sykesville (13)	Purnell & Vincent.	PENNSYLVANIA.	
Frederick (40)	Dr. J. A. Mitchell.	Taneytown (11)	A. Hepner, P. M.	Philadelphia (34)	U. S. Weather Bureau.
Frostburg (59)	G. S. DeGrange, P. M.	Westminster (37)	Prof. H. Meier.		
Hagerstown	I. Jno. Davis, P. M.	Westover	N. I. Gorsuch & Son.		
	Ira W. Hays.		E. D. Long.		

† Wind signal display stations.

CLIMATE AND CROP CORRESPONDENTS.

Correspondents.	Stations.	Correspondents.	Stations.	Correspondents.	Stations.
Abbott, W. M.	Annapolis.	Eckert, W. K.	Copperville.	Moore, J.	Bel Air.
Acworth, A. E.	Mardela Springs.	Finkbine, W. B.	Annapolis.	Nelson, J. B.	St. George, Del.
Adams, H. C.	Meehanville.	Foulk, J. Y.	Milford, Del.	Nichols, C. E.	Nichols.
Addison, C. G.	Springfield.	Frantz, W. W.	Clear Spring.	Nicholson, R. G.	Chestertown.
Adkins, J. J.	Wango.	Friel, Capt. D.	Queenstown.	Oswald, E. I.	Chewsville.
Albaugh, J. H.	Libertytown.	Gail, C. M.	Roddy.	Patterson, Prof. H. J.	College Park.
Allen, J. R.	Rising Sun.	Gagey, J. E.	Accident.	Phelps, Dr. F. P.	Mt. Holly.
Amos, J. W.	Waterbury.	Gulick, E. L.	Gluckheim.	Posay, A. B.	Doncaster.
Andrews, J. B.	Hurlock.	Hamilton, C. R.	Flintville.	Ramsdell, F. C.	Denton.
Balderston, George.	Colora.	Harig, Rev. G. L.	Pine Orchard.	Rice, D. H.	Towson.
Barry, J. A.	Brummetts.	Harris, J. S.	Coleman.	Richardson, Dr. H.	Great Mills.
Bay, A. S.	Emmorton.	Hatch, S. S.	Crownsville.	Roe, F. P.	Greensboro.
Beall, A. L.	Collington.	Hays, A. H.	Rayville.	Rouzer, J. H.	Thurmont.
Bennett, S. J.	Vienna.	Hendrickson, M. C.	Dickens.	Shriver, H.	Cumberland.
Benson, E. T.	Royal Oak.	Hess, N. R.	Harney.	Silver, A. P.	Glenville.
Benzinger, A. M.	Woodstock.	Hochstedler, W. A.	Cove.	Smith, F. O.	Dunkirk.
Bishop, Prof. W. H.	Newark, Del.	Holden, G. F.	Milford, Del.	Smith, J.	Linwood.
Bixler, E. C.	Westminster.	Hopkins, Dr. H. H.	New Market.	Snowden, F.	Ashton.
Bragamir, D.	Pisgah.	Huntzberg, C. E.	Boonsboro.	Speers, S. P.	Earleigh Heights.
Brashears, L.	Murkirk.	Huyett, M. H.	Huyett.	Stewart, H.	Jewell.
Brown, E. B.	Seaford, Del.	Jenkins, J. J.	Port Tobacco.	Stokes, Dr. S. A.	Cornersville.
Brown, F. F.	Cumberland.	Kelly, W. T.	Preston.	Sullivan, W. T.	Farmington, Del.
Byrd, W. E.	McDonogh.	Kinsell, E. G.	Green Spring Furnace.	Sweet, W. W.	Swanton.
Carlin, Dr. J. S.	Slidell.	Knauer, J. G.	Sunnyside.	Taylor, B. F.	Bradshaw.
Carr, G. W.	Clarksville.	Late, J. W.	Rocky Ridge.	Thomas, W. B.	Malcolm.
Carsins, E. E.	Aberdeen.	Lee, A. J.	Mt. Lake Park.	Thompson, W. J.	Scarboro.
Collins, J. R. D.	Aireys.	Leister, I. Dickson.	Finksburg.	Tydings, J. H. A.	St. Margarets.
Corbin, T. R.	Corbin.	Lohr, P. P.	Bittinger.	Waller, J. A.	Hebron.
Coulbourn, Ira N.	Marion Station.	Loose, W. E., jr.	Clear Spring.	Waters, J. L.	Gallant Green.
Cox, S., jr.	Bel Alton.	Maitland, T. L.	Sudley.	Welch, E. O.	Bristol.
Crowther, Dr. D. W.	Smithsburg.	Marsh, Dr. W. H.	Solomons.	Welch, W. H.	Church Hill.
Curtiss, Prof. G. G.	Bagley.	McAvoy, Hugh.	Clarkson.	Weller, H. A.	Graceham.
Davis, W. S.	Clements.	McDaniel, J. E.	McDaniel.	Wells, Rev. L. W.	Millsboro, Del.
Daymude, J. F.	Boys.	Meier, Prof. H.	Taneytown.	Witherow, W. W.	Taneytown.
Dickerson, W. H.	Dickerson.	Miller, H. H.	Sandy Spring.	Witmer, D. J.	Beaver Creek.
Dirickson, J. B.	Berlin.	Miller, J. A.	Keedysville.	Wolf, G. H.	Kump.
Donaldson, E. T.	Patuxent.	Miller, J. L.	Smithsburg.	Wroth, H. A.	Van Bibber.
Dutrow, R. C.	Adamstown.	Miller, J. S.	Grantsville.		
Duttera, A.	Taneytown.	Mitchell, Dr. J. A.	Mt. St. Mary's.		