

U. S. DEPARTMENT OF AGRICULTURE.

REPORT FOR MARCH, 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,

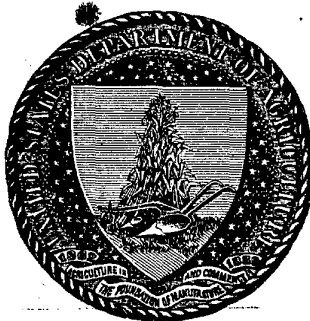
CHIEF OF BUREAU.

BY

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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
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GEORGE E. HUNT, Section Director.

BALTIMORE, MD.

VOL. II.

BALTIMORE, MD.

No. 3.

THE DEPTH OF THE ATLANTIC.

RAISING OF SEA LEVEL 100 FATHOMS WOULD COVER MUCH OF EUROPE.

The information gathered from various scientific and telegraphic expeditions goes to prove that the normal depth of the Atlantic Ocean is about 2,500 fathoms, or nearly three miles. In some parts, however, it is almost twice as deep, for off Porto Rico, in the West Indies, the Blake found a depth of 4,561 fathoms, or nearly five and a quarter miles. One of the deepest cables in the Atlantic is that of the South American Company, which in one part, between Senegal and the island of Fernando Noronha, lies in 2,830 fathoms, or a little more than three miles. When laying a line in this depth it is calculated that, with the ship steaming at eight knots an hour, the length of the cable from the stern of the ship to the spot where it touches the ground is over 25 miles, and that it takes a particular point in the cable more than two hours and a half to reach the bottom from the time that it first enters the water. The deepest sounding yet recorded was taken early in the present year by H. M. S. Penguin in the southeastern Pacific, about 550 miles to the northwest of New Zealand. This gave 5,155 fathoms, or a depth of nearly six miles. As a result of these numerous surveys much valuable information has been obtained with regard to the configuration of ocean beds. Contrary to the opinion formerly held the bottom of the sea does not present so many striking irregularities as the surface of the earth. Except for islands of volcanic origin and some coral patches the bed of the Atlantic is an undulating plain of fairly uniform flatness, and may be better compared to a tray with a sharply ascending rim than to a basin. The slope of the land, as a general rule, is continued out into the sea until it reaches a depth of about 100 fathoms and then increases rapidly to 1,500 and 2,000 fathoms, reaching finally the normal depth of 2,500 fathoms. The area between the 100-fathom line and the shore—usually known as the continental platform—is really submerged land and if the sea level were suddenly lowered to that extent, England would be connected by dry land to Denmark, Holland, Belgium, France, Ireland, Orkney, and Shetland. Nearly the whole of the North Sea, with the exception of some of the Norwegian fiords, would be laid bare, while the

coast of Ireland would be extended 100 miles to the westward. On the other hand, the raising of the sea level to an extent of 100 fathoms would put a large portion of Europe under water, as, indeed, has been several times the case with that Continent. Not only in the Atlantic, but in the Pacific, on the west coast of North America especially, the continental platform rises abruptly from the margins of the real oceanic depressed areas, and this phenomenon is one of the strongest arguments in favor of the theory of the permanence of the great ocean beds.—*Nineteenth Century.*

CLIMATOLOGY OF THE MONTH.

March temperatures in the Maryland and Delaware Section averaged warmer than usual by nearly four degrees. The highest temperatures of the month were mainly recorded on the 20th to 23d, while the coldest weather occurred generally on the 1st and 17th. Killing frosts were reported from the various divisions of the Section on the 11th, 17th, and from the 27th to the close of the month, but tender vegetation was not sufficiently advanced in growth to suffer injury.

The month's precipitation, occurring as rain, hail, sleet, and snow, was slightly below the normal, and very equally distributed throughout the Section; no station reported a total fall of less than two inches, and but two, Sunnyside and Cherryfields, of more than four inches. No precipitation occurred on the 29th and 30th, and the falls were either light or quite local on the 2d, 15th to 17th, and 26th to 28th. The heaviest falls occurred generally on the 18th to 20th. The average depth of snowfall for the western districts was 3.2 inches, descending to two-tenths of an inch for the Northern-Central Division, and amounting to light flurries only in the other portions of the Section. Thunderstorms occurred at a few stations on the 3d, 17th, and 18th, and were quite general on the 22d to 24th. Hail fell on the 3d, 5th, 6th, 12th, 14th, and 24th, and sleet on the 4th, 5th, 7th, 13th, 14th, and 24th. Auroras were observed at Princess Anne on the 10th, and at Solomon's on the 24th. A number of stations report high winds on the 24th to 26th, and an account of a small tornado, that occurred near Princess Anne on the 24th, is given elsewhere.

The frequent rains of the month retarded farm work to an appreciable extent, and the close of March witnessed only moderate progress in spring plowing, gardening, and the sowing of oats and clover seed. Wheat and rye passed through the winter in good condition, and developed well under the influence of abundant moisture. Timothy and clover withstood the cold, and were likewise accelerated in their growth by the rains. Some peas were up at the end of the month, and the sowing of tobacco beds was about completed. Peach trees were just beginning to bud and the outlook for fruit was considered excellent, a promise that still holds good to date (April 15th).

ATMOSPHERIC PRESSURE—IN INCHES AND HUNDREDTHS.

Monthly mean at Washington, D. C., 30.16; at Baltimore, 30.09; average, 30.12; highest, 30.73 at Washington on the 1st; lowest, 29.38 at Baltimore, on the 24th.

TEMPERATURE—IN DEGREES FAHRENHEIT.

The monthly mean (entire territory), 44.4, was 3.8 above the normal.

The highest monthly mean was 50.9, at Pocomoke City.

The lowest monthly mean was 38.0, at Boettcherville.

The highest temperature recorded during the month was 82, at Washington, on the 22d.

The lowest temperature recorded during the month was 12, at Deer Park, on the 1st.

The greatest local monthly range was 58, at Millsboro and Laurel.

The least local monthly range was 37, at Annapolis.

The greatest daily range was 44, at Flintstone, on the 30th.

The least daily range was 0, at St. Charles College, on the 18th.

PRECIPITATION—IN INCHES AND HUNDREDTHS.

The monthly average (entire territory) 2.93, was 0.65 below the normal.

The greatest amount was 5.05, at Cherryfields.

The least amount was 2.04, at Milford.

The greatest amount in twenty-four hours was 1.63, at Seaford, on the 20th.

The average number of rainy days, 10.

WIND.

The prevailing direction was from the northwest.

The total movement was 4,338 miles, at Baltimore, and 6,030 miles, at Washington, D. C.

The maximum wind velocity was 36 miles per hour from the northwest, at Washington, D. C., on the 10th.

MISCELLANEOUS PHENOMENA.

Thunderstorms.—At Boettcherville, on the 22d and 24th; at Grantsville, on the 23d and 24th; at Green Spring Furnace, on the 22d and 23d; at Sharpsburg, on the 22d and 24th; at Sunnyside, on the 20th and 22d; at Fallston, on the 22d and 24th; at Frederick, on the 17th and 18th; at Mt. St. Mary's College, on the 22d and 24th; at New Market, on the 24th; at Taneytown, on the 22d; at Western Maryland College, on the 23d; at Woodstock College, on the 24th; at Charlotte Hall, on the 23d; at Solomon's, on the 24th; at Chestertown, on the 3d; at Mardela Springs, on the 3d, 23d, and 24th; at Millsboro, on the 3d and 5th; at Newark on the 22d; at Seaford, on the 3d and 23d.

Hail.—At Grantsville, on the 14th; at Sharpsburg, on the 24th; at New Market, on the 12th; at St. Charles College, on the 14th; at Taneytown, on the 12th and 14th; at Woodstock College, on the 6th and 14th; at Laurel, on the 3d and 5th; at Solomon's on the 14th; at Mardela Springs, on the 24th.

Sleet.—At Green Spring Furnace, on the 4th, 5th, 13th, and 14th; at Sharpsburg, on the 5th and 24th; at Sunnyside, on the 13th; at Fallston, on the 5th and 14th; at Mt. St. Mary's College, on the 5th and 14th; at New Market, on the 14th; at St. Charles College, on the 14th; at Taneytown, on the 5th; at Van Bibber, on the 13th; at Woodstock College, on the 14th; at Princess Anne, on the 7th.

Frosts, light.—At Sharpsburg, on the 31st; at Taneytown, on the 27th and 29th; at Van Bibber, on the 27th; at Woodstock College, on the 8th, 9th, and 16th; at Solomon's, on the 11th; at Mardela Springs, on the 10th; at Seaford, on the 27th.

Frosts, heavy.—At Sharpsburg, on the 11th, 17th, 27th, and 29th; at Seaford, on the 29th.

Frosts, killing.—At Green Spring Furnace, on the 11th, 17th, 27th, and 29th; at Mt. St. Mary's College, on the 17th; at Taneytown, on the 17th; at Woodstock College, on the 17th; at Charlotte Hall, on the 27th; at Jewell, on the 27th and 29th; at Laurel, on the 17th, 29th, 30th, and 31st; at Easton, on the 27th, 28, and 29th; at Mardela Springs, on the 17th, 27th, 29th, and 30th; at Princess Anne, on the 11th, 17th, 27th, and 29th; at Milford, on the 26th and 27th.

Fogs.—At Green Spring Furnace, on the 10th and 23d; at Sunnyside, on the 6th; at Baltimore, on the 19th and 21st; at New Market, on the 19th; at Taneytown, on the 23d; at Cherryfields, on the 6th, 19th, 20th, and 21st; at Jewell, on the 19th, 20th, and 21st; at Laurel, on the 18th and 19th; at Mardela Springs, on the 19th and 21st; at Princess Anne, on the 20th; at Millsboro, on the 18th, 19th, 20th, 21st, and 23d.

Halos, solar.—At Green Spring Furnace, on the 11th and 17th; at Jewell, on the 11th and 15th.

Halos, lunar.—At Baltimore, on the 15th; at Mt. St. Mary's College, on the 15th; at Jewell, on the 11th and 13th.

Coronas, lunar.—At Millsboro, on the 11th, 15th, and 17th.

Auroras.—At Solomon's, on the 24th; at Princess Anne, on the 10th.

* * *

REMARKS BY OBSERVERS.

Grantsville, Mr. J. S. Miller.—Wheat and clover have wintered remarkably well, and look better than for years.

Green Spring Furnace, Prof. E. G. Kinsell.—Sharp southwest squalls on the morning and afternoon of the 24th.

Mt. St. Mary's College, Prof. J. A. Mitchell.—First honeybee observed on the 13th, and first butterfly seen on the 21st; Myrtle flower in bloom on the 28th.

New Market, Dr. H. H. Hopkins.—*Progne subis*—purple martin—first appearance on the 21st.

Cherryfields, Col. J. Edwin Coad.—Frogs singing on the night of the 3d.

Princess Anne, Mr. James R. Stewart.—On the 24th, the winds which had been from the southwest, suddenly shifted to the northwest. The two currents met about two miles from here. Several trees, fifteen inches through were twisted off just above the ground. The track of the wind could be easily traced through the woods for some distance. It was narrow.

Climatological data for Maryland and Delaware, March, 1897.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.					Sky.				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.																			
Boethcheville* 2	Allegany	900	7	38.0	-2.4	58	5	28	1	39	2.80	+0.62	0.50	3.0	9				F. F. Brown.
do	do	650	38	46.4		74	20	25	16	39	2.94	-0.30	0.71		5				Shriver & Rizer.
Cumberland No. 2	do	650	27																Webster Bruce.
Deer Park	Garrett	2,457	6					12	1		3.48		0.90	3.0	9				S. P. Specht.
Flintstone	Allegany		2	42.5		73	22	17	17	44	3.34		0.70	3.0	10	15	9	7	N. T. Downs.
Grantsville	Garrett	2,100	4	40.5		71	20	14	1	46	3.52		1.00	7.0	10	6	13	8	J. S. Miller.
Green Spring Furnace	Washington	500	5	43.4	+8.0	72	20	22	1	39	2.94		0.69	0.5	10	13	11	7	E. G. Kinsell.
Hagerstown	do	550	6	45.1		71	21	25	7	34	3.17		1.30	1.0	9	11	8	12	Prof. C. E. Carl.
Sharpsburg	do	420	3	43.6		73	20	24	17	35	2.40		0.69	0.5	9	14	10	7	R. L. Hiberger.
Sunnyside	Garrett	2,440	5	40.6	+5.3	69	22	15	1	41	4.69	+1.37	0.88	7.2	16	8	8	15	J. G. Knauer.
Westernport	Allegany	1,000	3	42.6		74	20	21	17	39	2.22		0.60	3.8	11				Prof. O. H. Bruce.
Average				42.5	+8.4						3.15	+0.30		3.2	10	12	10	9	
NORTHERN-CENTRAL MD.																			
Bachman's Valley	Carroll		4		+2.9	72	21	28	17	30	2.40	-1.70	0.57	T.	12	9	10	12	J. M. Myers.
Baltimore	Baltimore	123	63	45.0	+3.5	69	21	22	17	29	3.23	+1.79	0.95		12	8	10	10	U.S. Weather Bureau.
Darlington Academy	Harford	300	8	43.0		68	22	24	17	30	2.53	-1.20	0.56	T.	12	5	19	7	Prof. A. F. Galbreath.
Fallston School* 1	do	450	29	42.4	+4.4	68	22	24	17	30	2.53	-1.20	0.56	T.	12	5	19	7	G. G. Curtis, A. M.
Frederick	Frederick	250	25	44.6	+3.5	72	21	26	1	33	2.72	-0.24	0.70		11				McClintock Young.
Great Falls* 3	Montgomery	150	9	45.6	+4.3	75	22	29	17	31	2.71	-0.35	0.83		11				Capt. D. D. Gaillard.
Johns Hopkins Hospital	do	124	3	44.4		72	20	20	1	34	2.38		0.65		16				W. L. Woods.
McDonogh School	Baltimore	545	22	44.4	+6.2	72	23	25	17	27	3.04	-1.01	0.67	T.	12	14	9	6	S. H. Moore.
Mt. St. Mary's College	Frederick	720	37	42.6		70	21	23	17	37	3.28	-0.24	0.83	T.	12	7	17	7	J. A. Mitchell, Ph. D.
New Market	do	550	14	44.0	+5.2	70	23	30	1	26	2.49		0.58	0	10	13	11	7	H. H. Hopkins, M. D.
St. Charles College	Howard	390	3	44.8		76	22	22	17	41	2.49		0.55	0.9	10	12	9	10	H. M. Chapuis, S. S.
Taneytown	Carroll		2	41.8		69	22	24	1	31	2.31		0.57		9	14	5	12	Prof. H. Meier.
Van Bibber	Harford		3	44.4		78	22	24	6	36	2.58		1.05	T.	7	16	13	2	H. A. Wroth.
Western Maryland Coll.	Carroll		3	44.4		78	22	24	6	36	2.58		1.05	T.	7	16	13	2	Prof. Roland Watts.
Woodstock College	Baltimore	392	28	43.8	+5.2	72	22	20	17	38	2.74	-1.26	0.70		10	19	8	4	T. J. A. Freeman, S. J.
Average				43.9	+4.6						2.68	-0.94		0.2	11	13	10	8	nw.
SOUTHERN MARYLAND.																			
Annapolis	Anne Arundel	20	24	47.0		68	23	31	17	33	2.46	-2.09	0.55		11	15	2	14	J. E. Abbott.
Charlotte Hall School	St. Mary's	167	4	47.0		80	22	26	1	35	2.52		0.66		7	10	14	7	J. F. Coad.
Cherryfields* 2	do	20	4	45.2		66	22	35	8		5.05		0.88		11	9	16	6	Col. J. E. Coad.
Distributing Reservoir* 3	Dist. of Columbia	120	7	46.6	+4.6	75	22	30	27		2.81	-0.72	0.79		8				Captain Gaillard.
Jewell	Anne Arundel	165	10	46.7	+6.0	86	22	27	1	36	3.00	-2.27	0.95	T.	8	16	7	8	J. Plummer.
Laurel	Prince George's		3	44.4		80	22	22	1	39	3.08		0.72	T.	9	9	12	10	Dr. T. M. Baldwin.
Md. Agricultural College	do	170	6	44.0	-0.9	78	22	23	17	39	2.91	+0.19	0.86		12				Prof. J. H. Patterson.
Receiving Reservoir* 3	Dist. of Columbia	160	7	46.2	+4.8	74	22	30	13		2.86	-0.16	0.89		11				Captain Gaillard.
Solomon's	Calvert	20	6	46.3	+3.3	75	22	29	17	30	3.14	+0.14	0.82	0	10	6	5	20	W. H. Marsh, M. D.
Washington	Dist. of Columbia	112	27	46.0	+4.6	82	22	26	17	38	2.66	-1.50	0.85		13	11	9	11	U.S. Weather Bureau.
Average				45.9	+3.5						3.05	-0.71		T.	10	11	9	11	w.
EASTERN MARYLAND.																			
Chestertown	Kent	80	13	43.1	+1.4	72	22	20	1	32	2.97	-0.23	0.71	T.	12	13	15	3	nw.
Denton	Caroline	42	8																Hon. M. de K. Smith.
Easton	Talbot	35	8	44.6	+1.0	75	22	21	1	33	2.12	-1.06	1.05		6	15	9	7	F. C. Ramsdell.
Mardela Springs	Wicomico	25	10	46.3	+4.8	78	22	22	28		3.73	-1.00	0.90	T.	9				Henry Shreve.
Pocomoke City	Worcester	37	4	50.9		76	22	27	1	37	3.46		0.80		11	12	12	7	A. E. Acworth.
Princess Anne	Somerset	20	23	45.7	-1.6	76	22	23	17	34	3.17		0.64	T.	11	6	19	6	R. M. Stevenson.
Average				46.1	+4.1						3.09	-0.53		T.	10	11	14	6	w.
DELAWARE.																			
Dover	Kent	40	21																J. S. Jester.
Kirkwood* 1	Newcastle		1	41.1		64	3	28	1										William Carnagy.
Milford	Kent	18	18	46.6	+4.1	79	22	24	1	35	2.04	-1.72	0.38		6	19	0	12	sw.
Millsboro	Sussex		5	46.0	+3.1	80	23	22	1	42	3.33	+0.21	0.58	0	11	15	8	8	n.
Newark (Delaware Coll.)	Newcastle		4	42.0		69	22	20	17	32	2.27		0.42		9				Rev. L. W. Wells.
Seaford	Sussex		7	46.8	+4.8	76	22	24	1	32	3.25	-0.51	1.63	T.	6	14	5	12	nw.
Average				44.5	+2.5						2.72	-0.90		T.	8	16	4	11	nw.
General average				44.4	+3.8						2.93	-0.65		0.7	10	12	10	9	nw.

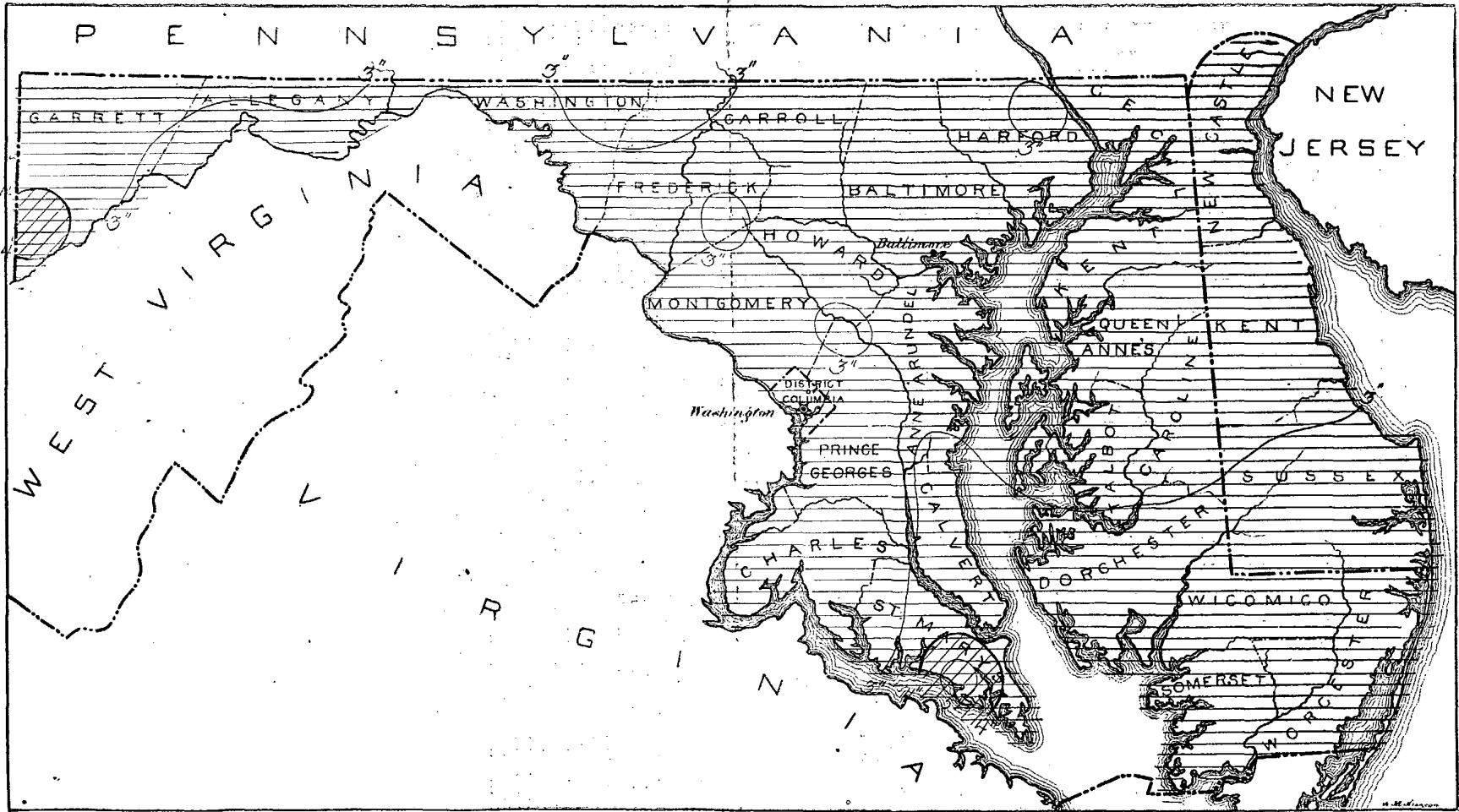
* Extremes of temperature from observed readings of dry thermometer.

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.

TOTAL PRECIPITATION, MARCH, 1897.



Scale of Shades



0" to 2" 2" to 4" 4" to 6" 6" to 8" Over 8"

