U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU,

CO-OPERATING WITH THE

MARYLAND STATE WEATHER SERVICE

Established by an Act of the General Assembly of the State of Maryland, 1892, and Maintained in Connection with

The Johns Hopkins University and the Maryland Agricultural College.

CENTRAL OFFICE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, MD.

PROF. WM. B. CLARK, Johns Hopkins University, Director.

PROF. MILTON WHITNEY, Maryland Agricultural College, Secretary and Treasurer.

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VOL. V, NO. 6. MONTHLY REPORT. OCTOBER 8, 1895.

Contains Review for the Month of September.

The Chesapeake Peninsula.

BY A. E. ACWORTH.

Prof. Clark, of the Johns Hopkins University, has so well and fully described the salient features of the irregular triangle which lies between the Chesapeake Bay on one side and the Atlantic Ocean and the Delaware Bay on the other, that a further description seems unnecessary. There are no mountains in the section which includes Eastern Maryland, Delaware, and a small portion of Virginia, although a rocky ridge extends along the Chesapeake shore from Kent Island to the ocean, sometimes cropping out in the form of bowlders, as in the neighborhood of Princess Anne, while further west, not far from Locust Point, these rocks, just under the surface, assume a stratified form of varying thickness and size.

Agriculturally speaking, this section presents, in every county, quite diversified interests, ranging from the famous timothy lands of Cecil, the wheat soils of Cecil and New Castle, the peach lands of Kent, Queen Anne's, and lower Delaware, the melon lands of Somerset and Worcester, to the sweet potato and trucking lands of the Eastern Shore of Virginia.

If the ability to raise diversified crops, the ability to find some one crop best suited to the climate, rainfall and peculiar soil of a section be taken into consideration, if each farm demands a specialty and a specialist to cultivate it, then the Chesapeake Peninsula must some day or other become the habitation of a crowded population, able to interchange commodities at the least possible expense for carriage, and to enjoy those advantages of reciprocity that some deem the best form of living.

That these views are not utopian is evident from a glance at their geological formation: gneiss and cretaceous in Cecil; cretaceous, eocene and miocene in Kent; miocene and pliocene in Queen Anne's, Caroline, Talbot, Dorchester, Wicomico, Somerset and Worcester. And it is far from probable that Delaware and the Eastern Shore of Virginia differ very much from the above. Perhaps Caroline and Sussex, Delaware, differ little from each other, while those counties of Virginia have more of the light red clay loams. Popularly speaking, there is scarcely a county in this peninsula that has not, somewhere within it, the stiff, compact white clays, the red clay loams, the black gum soil, or the very light sands. From this outline the strength of the preceding observations becomes manifest. With such varied soils within a county, it is next to impossible that a total or even partial failure of even the staple crops can occur. Most of the counties have water boundaries, and as "water attracts water," droughts, when they occur, are not as disastrous as elsewhere. Stiff clays and sands do not suffer alike.

Again, the large bodies of salt water on each border of this peninsula ought, it seems, to impregnate the atmosphere with some small portion of their saline contents; and this, when deposited in the form of dew, and absorbed by the soil, should react on the atmosphere, causing heavier dew deposits, if nothing more.

Of all plants grown, asparagus is most susceptible to salt influences, and this is shown by the exceptionally large crops of it raised by Judge George Davidson, of Queen Anne's, whose plantation is at the mouth of the Wye. The influence of the water may be seen in the

heavy yields of wheat in Talbot, between the St. Michael's river and the Bay shore, and along the shores of the Tred Avon. Indeed, much of the productive capacity of Talbot is directly attributable to its water surroundings, no farm there being over three miles from navigable water. And to this humidity of its atmosphere is probably due the liability of the wheat crop, there, to rust. The effect of this surrounding water in alleviating the effect of drought was strikingly illustrated in 1890 when, although but .32 inch of rain fell in 32 days, at Mardela Springs, the relative humidity of the atmosphere, never save once in the period, fell below 50 per cent., and it averaged 73.2 per cent. The same would probably hold true for the entire peninsula, with but little modification.

Norfolk, Virginia, is considered a great trucking center, yet there, the precipitation, between 1880 and 1884, averaged, annually, 49.78 in. The Eastern Shore of Maryland is not less fortunate in the amount of precipitation, for during the years 1889 to 1892, inclusive, the average amount, at Mardela Springs, was 51.33 inches. The annual temperature averages of the two places differ but slightly, but spring being the season of growth of kale, spinach, and many other profitable crops, there may be at that time such an essential difference in the temperature of the two sections as to turn the tide in favor of the more southern one. As Mardela Springs is not far from halfway between Norfolk and the head of the Bay, and quite fairly represents the mean climate of the Eastern Shore, the following comparison in spring temperature and rainfall will be of interest:

	Temp.	Precip.
Norfolk, . . .	57.0	12.68
Mardela Springs,	52.2	15.20
Baltimore, . .	53.0	10.91

The data for Baltimore are added, since many successful truckers reside in Patapsco Neck, and not a few in Anne Arundel county. There is slight dissimilarity in climate, at least. For the last four years there has been between Mardela Springs and Baltimore an average difference of about 1°.

A word as to the sands of the Eastern Shore, so liable to become infested with brown sedge. Experience has demonstrated that an old sedge field, when broken up, grows the very finest of water-melons. As corn lands, none respond more quickly to fertilizers, and few grow heavier wheat.

This peninsula may be regarded, also, as the peach section, while blackberries and strawberries are easily grown. Clover, strange to say, does well on those sands that have a clay subsoil within reasonable depth, and it is believed that this is generally the case. Even Irish potatoes grow finely in them if planted early, or mulched, to shade the ground and keep it damp. The Eastern Shore of Virginia grows immense quantities of sweet potatoes, and here pine needles (they are usually termed "fallings" or "shatters") from the thickets adjacent to the fields, are used as manure. The "sea-ore," as the grass thrown ashore by the bay is termed, acts well on the sands when they are planted to corn, whilst no finer strawberries are grown than on the lower lands where the soil is more moist and colder.

Just now these unprized lands of the Eastern Shore offer unprecedented advantages to the man of small capital and a house full of sturdy boys; and the facilities for transportation by steamboat or steam car are unrivaled. Dr. Chancellor has justly written of the healthfulness of this region; it seems specially adapted to those of consumptive tendency.

In these days, when meats are too dear for the average man, the Eastern Shore, with its embracing and ramifying waters supplying fish, oysters, crabs and terrapin in the greatest abundance, with its light, readily tilled soil, growing vegetables of all kinds easily and certainly, offers unprecedented advantages.

New Stations.

At the conclusion of the current month, meteorological reports will be received from three new stations: these are, New Market, Frederick county, Van Bibber, Harford county, and Cambridge, Dorchester county. The observer at New Market is Miss M. D. Hopkins, the daughter of Dr. H. H. Hopkins. Mr. H. A. Wroth, who has furnished reports for the *Weekly Weather Crop Bulletin* throughout the past season, is the observer at Van Bibber, and James S. Shepherd, Esq., will take the observation at Cambridge.

When a section of the State has been visited by a representative of the central office, some note of the fact has generally been made in the subsequent issue of the *Monthly Report.* Towards the close of September a visit was made to Cambridge, Md.

The city of Cambridge is situated near the junction of the southern and middle thirds of Eastern Maryland, and on the southern side of the Great Choptank river, one of the numerous navigable arms of the Chesapeake. The land of the region is a rich, easily worked loam, suited to truck, wheat, grass and corn. Certainly they are some of the finest truck farms in the country that form the fitting frame to this prosperous city of five thousand inhabitants. Notwithstanding the great age of the place, such

marked improvement has been made in it, within the past few years, that it will not suffer in comparison with any of the modern western cities of like size.

Approaching the close of an exceptionally dry season, for Maryland, it was expected to find the crops poor and the ground in bad condition, but quite the opposite condition prevailed; the crops were good, and the soil was in excellent condition for working. Large yields of corn and truck were being harvested, and there was comparatively little complaint of the dry weather.

That this section is one of the garden spots of the country, a visit to it only is necessary. The best evidence of it, however, is that the farmers are making money. The fair fame of the region has spread beyond the borders of Maryland, as is apparent from the number of its wealthy farmers who, but recently, emigrated from the more northern States. These people have been benefited by the move; they have found a mild climate, a kind soil, convenient transportation, and good markets. It must not be forgotten, however, that they have likewise benefited the country to which they have come, for they have brought with them improved methods of farming which, already, are being adopted by their neighbors, the old residents.

After making the round of this outlying country, by the fine oyster-shell roads which contribute not a little to the visitor's pleasure, one is impressed with the idea that if other Northern people desire to better themselves by moving into this favored section, they must hurry to avail themselves of the opportunities now offered, and which are fast disappearing in investments of Northern capital.

Doubtless there is much attraction to the inland farmer in the fact that the waters of the Eastern Shore not only furnish transportation, but vast numbers of their palatable inhabitants as well. The oyster and fish industries of this section are of such well-known magnitude that they require no mention.

Eastern Maryland is designated as the eastern division of the coastal plain. It is deeply indented by tidal estuaries and bordered by the ocean, its temperature being much modified by the surrounding water. The southern portion of the area has a mean annual temperature of 58°, the highest in the State, and this is principally due to the warmth of the winters.

Fall Tree Planting.

The subject of tree planting should receive the favorable consideration of every Maryland farmer. The Maryland farmer should not only believe in tree planting and preach it, but he should practice it as well; indeed, the practice would be much the best of the three, both for himself and the community. Upon this subject the *Daily News*, of Frederick, Md., addresses the following pertinent and valuable remarks to its readers:

It cannot be urged too persistently on the American people to continue the planting of trees. There are few parts of the country now left in which there are trees enough. Every town and city street, every rural road ought to be lined with shade. The difference this makes in the looks of a village or a rural neighborhood is enough to attract city people looking for country homes to the spot where the trees are planted. Any barren little village with dusty streets and commons covered with stagnant ponds and old tin cans may in three years' time be transformed into a bower of beauty, simply by cleanliness and tree and sod planting.

No farmer's home in the Northern, Middle or Western States is what it ought to be until it has a thick clump of evergreens planted on the northwest of his house and barns, as a windbreak, and rows of stately trees all around the roadside of his place. In the city lot or in the grounds immediately surrounding a country home it is well to plant fruit trees and nut trees. Many of the nut trees are also among the most valuable of the shade trees. Among these may be mentioned the walnut, butternut, hickory-nut and chestnut. Japanese chestnuts are superior to the American, and they are hardy in almost every part of the Union.

Evergreens may often be planted to better advantage in the fall than in the spring. The planting may be done any time from late in August till the end of October. It is more convenient to do it in the autumn because the agriculturist has more time. Those who wish to set out forest and fruit trees this fall should know that deciduous trees may be planted any time from the middle of October till the ground freezes. All except peach trees and soft-wooded trees are best set out in the fall. Indeed, even in frozen weather it is often possible to move quite large trees from the forest by digging up with them around the roots a great ball of frozen earth and setting the tree, roots, frozen earth and all, into a hole large enough to receive them.

To set out small trees, say those 1 to 1½ inches in diameter, dig a hole fully a yard square and two feet deep. Put the young tree inside, with its roots carefully spread out. Upon the roots lay, grass downward, the sod taken from the top of the hole. This will decay and make a valuable compost. Fill in the hole above the sod with richly fertilized earth, covering the whole with ordinary earth. A tree planted in this manner, watered sufficiently and fed with fertilizers from time to time, will make twice the growth it does planted and treated in the ordinary way.

American Association of State Weather Services.

An attractive programme of the fourth annual convention of the American Association of State Weather Services (at Indianapolis, Ind., Oct. 16th and 17th,) has been received. Under the heading, "*Topics for Discussion,*" are given the following:

1. How best to secure and retain the services of Voluntary Observers.

2. What can be done to improve weekly weather crop bulletins and increase their value? What interests are being served by these publications?

(*a*) Should not selected Voluntary Observers be given authority to telegraph State centers reports of rainfall or other important information on the afternoon preceding date of issue of crop bulletins, thereby giving data for a State rainfall chart?

(*b*) Best means for the collection of data and best form of publication and distribution.

3. Monthly publication of State Weather Services.

(*a*) Form of publication.

(*b*) Importance of prompt issue.

(*c*) Character of information.

(*d*) Uniformity in style.

(*e*) Preservation in convenient form for reference of the most important data from Voluntary Observer's records.

4. Distribution of forecasts and special warnings.

(*a*) Can any improvement be made in the present system of forecast distribution?

(*b*) Should flags be displayed to represent forecasts for the current day?

(*c*) Can forecasts be given wider dissemination in rural districts, and what can be done to prove the value of forecasts in sections where they are not utilized?

(*d*) Should not forecasts be telegraphed to daily papers of small cities, to avoid use of obsolete forecasts given in plate matter used in "make up"?

(*e*) Value of the logotype system.

5. Equipment and inspection of voluntary stations. Importance of instrument shelters.

6. Along what lines can special investigations be undertaken by State Weather Services with best results?

The Hodgkins Fund Prizes.

It is a source of gratification and of pride to the employes of the Weather Bureau that of the representatives of the United States who contested for the Hodgkins prizes, Mr. Alexander McAdie, of the Bureau, heads the list made public by the Committee of Award. Two hundred and eighteen papers were submitted to the Committee and examined, and of these but twenty-three receive mention. The first prize, ten thousand dollars, goes to Lord Rayleigh and Professor Ramsay, of England, for the discovery of argon, a history of which was given by Professor Remsen of the Johns Hopkins University, in the March number of the *Monthly Report.* The second prize, two thousand dollars, is not awarded. The third prize, one thousand dollars, is received by Dr. de Varigny, of France, for his essay, "L'Air et la Vie."

Of the remaining twenty-one papers, three receive honorable mention with a silver medal; six, honorable mention with a bronze medal, and the remainder, honorable mention. Mr. McAdie's paper is seventh on this list, and he receives honorable mention with a bronze medal. The title of his paper is as follows:

"The known properties of atmospheric air considered in their relationships to research in every department of natural science, and the importance of a study of the atmosphere considered in view of these relationships: the proper direction of future research in connection with the imperfections of our knowledge of atmospheric air and the conditions of that knowledge with other sciences." Mr. McAdie, it will be remembered, is the author of the very popular pamphlet, "Protection from Lightning," recently published by the Weather Bureau.

The next American to receive recognition is Professor F. H. Bigelow of the Weather Bureau. His paper is eleventh on the list and is entitled, "Solar and Terrestrial Magnetism and their relation to Meteorology." It receives honorable mention.

The Navy and the Army of the United States were both represented in the honorable mention column, Dr. F. J. B. Cordeiro, U. S. N. (thirteenth on the list), presenting a paper on "Hypsometry," and Dr. Chas. Smart, U. S. A. (twentieth on the list), "An Essay on the Properties, Constitution, and Impurities of Atmospheric Air, in relation to the promotion of Health and Longevity."

Miscellaneous Notes.

Weather and Health.

The article, "*Atmospheric Temperatures during the Month of July,*" published in the last issue of the *Monthly Report,* we are glad to see has been copied even so far west as California.

Dr. W. F. R. Philips, the author of the article, is the Compiler in charge of the Sanitary Section of the Weather Bureau. This Section was recently established and, as its designation implies, has undertaken the investigation of the relations which exist between weather and health. The article in question is of greater interest because the first issue of the monthly publication of the Section will be for the month of July 1895; it is already in press and will resemble in form the *Monthly Weather Review*.

In circular No. 4, Sanitary Climatology, issued by the Chief of the Weather Bureau, it is stated that this publication will comprise, in the shape of tables, charts and diagrams, the chief meteorologic factors as observed and recorded by the officials of the Weather Bureau, and the statistics of mortality and morbidity as reported by the various public health officials and by individual physicians; also brief statements of the general sanitary conditions of the different localities, especially as they may have been influenced by the weather.

It is further stated, in the circular, that under no circumstances will discriminating or advisory notices of any locality be published, the entire aim of the Bureau being to collect the facts and statistics for the sanitary and medical profession, and for the general public, to use in such ways and for such purposes as they see fit.

Review of the Month—Sept.

WEATHER.

Temperature (degrees).—Monthly mean (entire territory), 70.6, being 3.7 above the normal; highest monthly mean, 75.6, at Solomon's; lowest monthly mean, 63.5, at Sunnyside. Highest temperature, 101, at College Park, on the 23rd; lowest temperature, 27, at Deer Park, on the 28th. Greatest local monthly range, 70, at Westernport; least local monthly range, 31, at Cherryfields. Monthly mean range (entire territory), 53.2; monthly mean maximum, 81.5; monthly mean minimum, 60.0.

Precipitation (in inches).—Average (entire territory), 2.04, being 1.77 below the normal. Greatest amount, 5.90, at Baltimore; least amount, 0.15, at Cumberland.

Thunderstorms.—At Bachman's Valley, on the 18th; at Baltimore, on the 18th, 19th; at Charlotte Hall, on the 19th; at Cherryfields, on the 19th, 25th; at Dover, on the 6th, 18th, 25th; at Frederick, on the 18th, 26th; at Grantsville, on the 9th, 16th, 17th, 18th, 19th, 25th, 26th; at Green Spring Furnace, on the 18th; at Jewell, on the 18th, 19th, 25th; at Laurel, on the 18th, 25th; at Lisbon, on the 18th, 26th; at Millsboro, on the 19th, 29th; at Oakland, on the 18th, 26th; at Philadelphia, on the 18th, 26th; at Pocomoke City, on the 19th; at Princess Anne, on the 19th, 26th; at Seaford, on the 19th; at Sharpsburg, on the 18th; at Solomon's, on the 19th, 25th; at Sunnyside, on the 16th, 26th; at Western Maryland College, on the 18th; at Wilmington, on the 6th, 18th, 26th; at Woodstock College, on the 19th.

Hail.—At Boettcherville, on the 10th; at Westernport, on the 9th, 10th, 30th.

Frost.—At Oakland, on the 10th; at Wilmington, on the 30th.

Fogs.—At Bachman's Valley, on the 11th, 20th; at Jewell, on the 10th, 11th, 17th; at Lisbon, on the 11th, 20th; at Millsboro, on the 8th, 10th, 11th; at Wilmington, heavy on the 1st, 2nd, 3rd, 5th, 9th, 10th, 11th, 12th, 25th, 26th, 30th; light on the 4th, 6th, 8th, 14th, 16th, 17th, 18th, 19th, 20th, 21st, 23rd, 24th, 28th, 29th; all day fog, on the 7th.

Halos, Lunar.—At Bachman's Valley, on the 1st; at Pocomoke City, on the 27th.

Corona, Lunar.—At Lisbon, on the 1st, 7th, 26th; at Millsboro, on the 8th, 26th; at Wilmington, on the 25th.

Corona, Solar.—At Lisbon, on the 1st, 27th.

Meteors.—At Jewell, on the 21st, 23rd.

Earthquake Shock.—At Wilmington, on the 1st.

CROPS.

Week ending September 9th.

Corn was good in places, but poor generally. Frost on the 2nd, in Garrett County, slightly injured corn and buckwheat. Tobacco housing had begun in Southern Maryland. Potatoes were yielding well, in some places. Pasturage and vegetables were improved by the showers of the week. Large quantities of peaches were being shipped from Washington county to northern markets. Reports of the large apple crop continued to be received.

Week ending September 16th.

The weather continued dry, and streams, springs and wells were very low; vegetation, however, had been refreshed by heavy dews. Corn cutting was in progress, and though there was anticipation of a considerable shortage, many fine fields were reported. In Southern Maryland the early crop of tobacco was being housed, under the most favorable weather conditions; the yield was generally light; pasturage was variable, in some localities being fair, in others very poor. Tomatoes were ripening fast. Large shipments of peaches were being made from Washington county. Apples were abundant.

Week ending September 23rd.

On account of the continued dry weather, streams, springs and wells were still very low. The tobacco crop was nearly all housed, and in good condition; and much of the corn was in shock; the yields of these two crops agreed closely with the anticipations, previously reported. Wheat seeding had been carried on to some extent, but very irregularly. Buckwheat was being thrashed. Tomatoes turned out better than anticipated. A fair yield of clover was being thrashed. Pasture was short and late potatoes needed rain. Apples were abundant, but the peach season was about over. Peach growers, generally, were well pleased with the season's results.

Week ending September 30th.

General dryness prevailed and, as a result, wheat seeding continued to progress but slowly. Corn was nearly all in shock, and it was reported that husking would soon begin; there were some very fine fields of the crop in northern, southern and eastern sections. Pastures were poor, and vegetables had been seriously affected by the drought. The canneries were busy with the tomato crop, which was turning out better than expected. Peaches were nearly all gone, but apples were plenty, and late grapes were ripening.

DAILY PRECIPITATION FOR SEPTEMBER, 1895.

STATIONS.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Tot
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Oakland	....	....	....	....	....	T	....	....	T	....	....	....	T	....	....	T	.17	....	....	....	....	....	....	....	....	.07	....	....	....	T	.24
Deer Park	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
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West'nport	....	....	....	....	....	....	....	....	....	.45	....	....	....	....	....	.09	T	....	....	....	....	....	....	....	....	....	....	....	....	T	.54
Boettcherv	....	....	....	....	....	....	....	....	....	.50	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50
Cumb. (a)	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
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Hancock	....	....	....	....	..	.40	....	....	....	....	....	....	....	....	....	T	....	1.40	....	....	....	....	....	....	....	T	....	....	T	....	1.80
Gr'nSp.Fur.	....	....	....	....	....	.60	.06	....	....	....	....	....	....	....	....	....	....	1.41	....	....	....	....	....	....	....	....	....	....	....	....	2.07
Hagersto'n.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sharpsburg	....	....	....	....	....	.28	T	....	....	....	....	....	T	....	....	.09	T	.59	....	....	....	....	....	....	....	.05	....	....	T	....	1.01
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Woman's Col.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
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WestMd.Col	....	....	....	....	....	4.48	....	....	....	....	....	....	....	....	....	....	....	.62	....	....	....	....	....	....	....	.51	....	....	....	....	5.61
Woodst. Col	....	....	....	....	....	4.10	....	....	....	....	....	....	....	....	....	....	T	.35	.61	....	....	....	....	....	T	.13	....	....	.35	....	5.54
Baltimore	....	....	....	....	....	4.76	T	....	....	....	....	....	....	....	....	T	T	.25	.86	....	....	....	....	....	....	.03	....	....	....	....	5.90
Lisbon	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	.40	....	....	....	....	....	....	T	.23	....	....	.17	T	.80
St.Chas.Col.	....	....	....	....	....	3.12	....	....	....	....	....	....	....	....	....	....	....	.35	.52	....	....	....	....	....	....	....	....	....	.22	....	4.21
Great Falls	....	....	....	....	....	.27	.65	....	....	....	....	....	....	....	....	....	....	....	.47	....	....	....	....	....	....	.10	.25	....	....	....	1.74
Falls'n Sch.	....	....	....	....	....	3.15	.02	....	....	....	....	....	....	....	....	.02	....	.31	.01	....	....	....	....	....	....	.28	....	....	.10	....	3.89
Dar'g'n Aca'y	....	....	....	....	....	.67	....	....	....	....	....	....	....	....	....	....	....	....	1.09	.05	....	....	....	....	....	.47	..	....	.10	....	2.38
Jewell	....	....	....	....	....	.60	....	....	....	....	....	....	....	....	....	....	T	.10	.20	....	....	....	....	....	.03	T	....	....	....	....	.93
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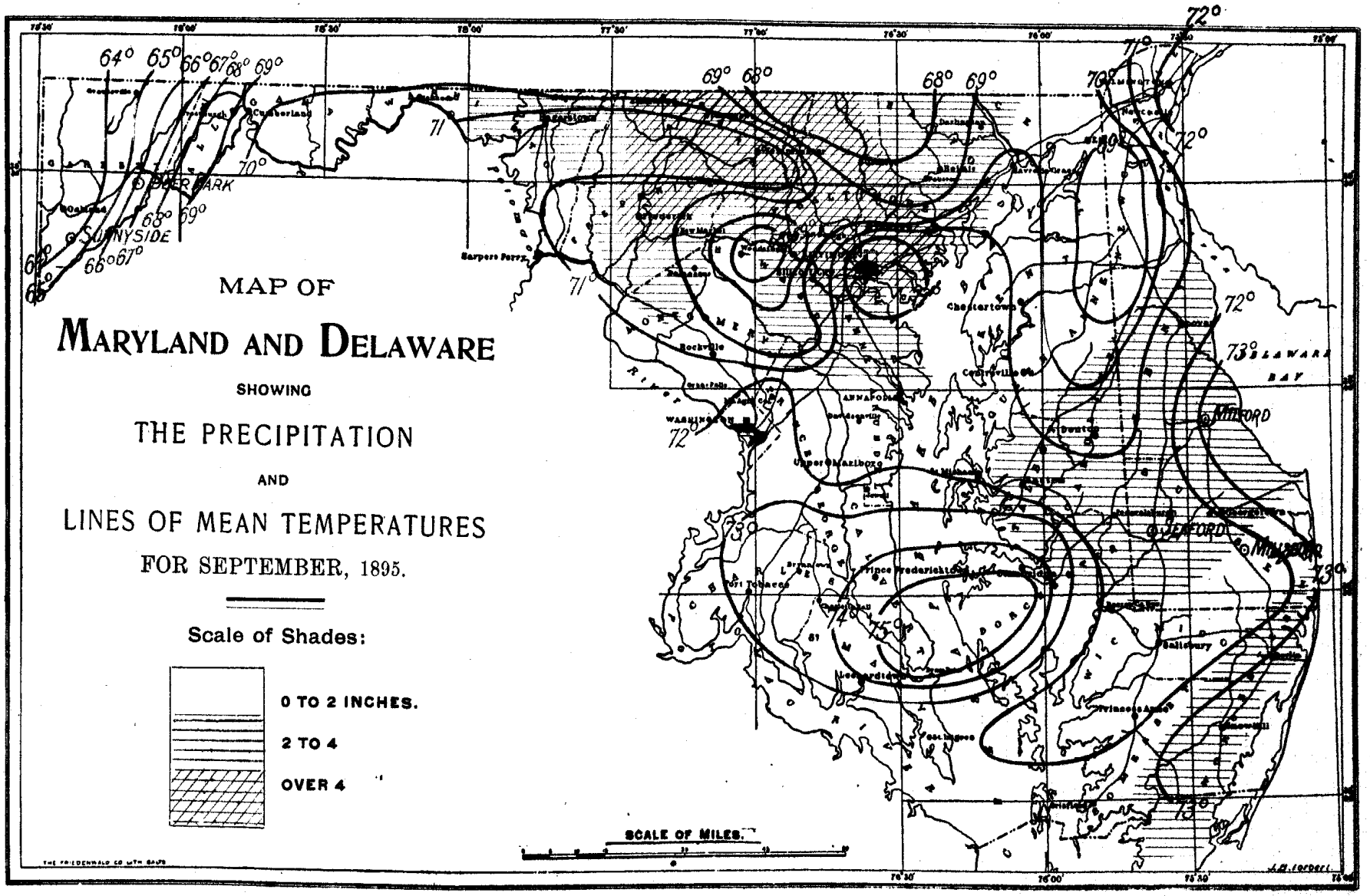
Rec. R., D.C	....	....	....	....	....	.30	.36	....	..	....	....	....	....	....	....	....	....	....	.41	....	....	....	....	....	....	.24	.06	....	....	.21	1.58
Wash., D. C.	....	....	....	....	....	.59	T	....	....	....	....	....	....	....	....	....	.01	.29	T	....	....	....	....	T	T	.06	..	....	T	.16	1.11
Md. Agr. Cl	....	....	....	....	....	1.01	....	....	....	....	....	....	....	....	....	....	....	.35	.27	....	....	....	....	....	T	.06	....	....	....	.12	1.81
Colg. Park																															
Laurel	....	....	....	....	....	1.90	....	....	....	....	....	....	....	....	....	....	....	.20	....	....	....	....	....	....	....	.50	.10	....	....	..	2.70
Up. Marlb.	....	....	....	....	....	.70	....	....	....	....	....	....	....	....	....	T	T	.20	.38	..	....	....	....	....	....	T	....	....	....	T	1.28
La Plata	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.50	....	....	....	....	....	....	....	....	....	....	....	.50
Solomon's	....	....	....	....	T	.29	....	....	....	....	....	....	....	....	....	T	....	T	.42	....	....	....	....	....	.05	....	....	....	....	....	.76
Chari. Hall Sch	....	....	....	....	....	.11	....	....	....	....	....	....	....	....	....	..	....	.20	....	....	....	....	....	....	....	T	....	....	....	....	.31
Cherryfields	....	....	....	....	.18	....	....	....	....	....	....	....	....	....	....	....	....	....	.69	....	....	....	....	....	.25	....	....	....	....	....	1.12
Chestert'n.	....	....	....	....	..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	..
Denton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Easton	....	....	....	....	....	....	.97	....	....	....	....	....	....	....	....	..	.19	....	1.33	....	....	....	....	....	....	....	....	....	....	....	2.49
Mardela Sp.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pri'cess An.	....	....	....	....	.07	.56	....	....	....	....	....	....	....	....	....	....	....	.06	.11	....	....	....	....	....	....	.12	....	....	....	....	.92
Poc'm'k Cit	1.10	....	....	....	....	†	1.84	....	....	....	....	....	....	....	....	....	T	.03	.20	....	....	....	....	....	....	....	....	....	....	....	....	3.17
Wilm't.Del.	....	....	....	....	....	.17	.22	....	....	....	....	....	....	....	....	T	....	.35	....	....	....	....	....	....	....	....	.16	....	.01	.02	.93
Del.Col.Del							.37	.16	....	....	....	....	....	....	....	.01	....	.28	....	....	....	....	....	....	....	....	....	.06	....	....	.88
Newark,Del																															
Dover, Del.	....	....	....	....	....	....	1.79	.07	....	....	....	....	....	....	....	....	....	.14	....	....	....	....	....	....	.23	....	....	....	....	....	2.23
Milford, Del.	....	....	....	....	....	2.80	....	....	....	....	....	....	....	....	....	....	.T	.11	.05	....	....	....	....	....	....	....	....	....	....	....	2.96
Seaford,Del	....	....	....	....	..	1.59	....	....	....	....	....	....	....	....	....	T	....	.14	.89	....	....	....	....	....	....	....	....	....	....	....	2.62
Millsb'o,Del	.20	....	....	....	.30	1.29	....	....	....	....	....	....	....	....	....	....	....	....	.10	....	....	....	....	....	....	....	....	....	....	....	1.89
Phila. Pa.	....	....	....	....	....	T	.35	....	....	....	....	....	....	....	....	.01	T	.10	.01	....	....	....	....	....	....	.08	.05	....	....	.01	.61
Norfolk, Va	.06	....	....	..	.01	T	....	.12	....	....	....	....	T	....	....	....	....	....	T	T	....	....	....	....	....	....	....	....	....	....	.19
Warsaw, Va	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Birds Nest, Va	1.40	....	....	....	....	.05	....	T	....	....	.10	....	....	....	....	....	....	....	.15	....	....	....	....	....	....	....	....	....	....	....	1.70

NOTE.—"T" indicates a trace of rain or melted snow. † Not measured.

Reports for August, 1895, received too late for earlier publication.

STATIONS.	COUNTIES.	Altitude above sea in ft.	Latitude.	Longitude.	TEMPERATURE. Monthly Mean.	Mean of Max.	Mean of Min.	Max. Degrees	Max. Date.	Min. Degrees	Min. Date.	Monthly Range.	Total Precipitation.	Total Snow-fall.	Clear Days.	Partly Cloudy Days.	Cloudy Days.	Rainy Days. (.01 in. or more)	Prevailing Winds.
WESTERN MARYLAND.																			
Oakland	Garrett	....	39 0	77 14	64.4	77.5	51.3	86	11	38	2	48	1.98	0	12	19	0	10	S. W.
SOUTHERN MARYLAND.																			
Dist. Res., D. C.**		....	38 52	77 0	77.3	.....	.....	93	11	60	2	33	.27	0	....	....	....	2	.....
Rec. Res., D. C.**		....	38 52	77 0	77.3	....	.....	91	11, 24, 29	58	1	33	.88	0	....	....	....	3	.....

* See foot-note on next page.


MAP OF
MARYLAND AND DELAWARE
SHOWING
THE PRECIPITATION
AND
LINES OF MEAN TEMPERATURES
FOR SEPTEMBER, 1895.
Scale of Shades:
0 TO 2 INCHES.
2 TO 4
OVER 4
SCALE OF MILES.
DEER PARK
SUNNYSIDE
Harpers Ferry
Rockville
Chestertown
Milford
Seaford
Salisbury
DELAWARE BAY

Meteorological and Weather Signal Display Stations of the Maryland State Weather Service.

Stations.	County.	Meteorological Observer.	Displayman.
Annapolis	Anne Arundel	J. E. Abbott	W. M. Abbott.
Appleton	Cecil		W. C. Henderson.
Bachman's Valley	Carroll	J. M. Myers.	
Baltimore		J. B. Marbury. G. N. Wilson. A. T. Brewer. F. S. Coale.	Weather Bureau.
Baltimore, (The Anchorage)			Thos. Hansen.
Bel Air	Harford		N. N. Nock.
Bel Alton	Charles	Walter Cox.	
Boettcherville	Allegany	F. F. Brown.	
Bradshaw	Baltimore		B. F. Taylor.
Buckeystown	Frederick		A. W. Nicodemus.
Burkittsville	Frederick	J. P. Slifer.	
Cambridge	Dorchester		Samuel Lehman.
Charlotte Hall School	St. Mary's	J. Francis Coad.	
Cherryfields	St. Mary's	J. Edwin Coad.	
Chestertown	Kent	Hon. M. deK. Smith.	
Cumberland	Allegany	Shriver and Rizer. E. T. Shriver.	
Darlington Academy	Harford	Prof. A. F. Galbreath.	
Deer Park	Garrett	S. P. Specht.	
Delaware City, Del	New Castle		W. E. Reybold.
Denton	Caroline	F. C. Ramsdell.	
Dickerson	Montgomery		W. H. Dickerson.
Distributing Reservoir, D. C		Maj. J. G. D. Knight.	
Dover, Del	Kent	Jno. S. Jester	Philip Burnet.
Easton	Talbot	Henry Shreve	Henry Shreve.
Fallston School	Harford	G. G. Curtiss, A. M.	
Flintstone	Allegany		N. T. Downes.
Frederick	Frederick	McClintock Young,	"The News."
Frostburg	Allegany		J. N. Benson.
Frederica, Del	Kent		Miss E. V. Newnom. Miss L. T. Frazier.
Garey P. O.	Howard		Walter Dorsey.
Garrison	Baltimore	A. W. Nyce.	
Glyndon	Baltimore	J. E. Henry	J. J. Dyer.
Grantsville	Garrett	J. S. Miller	T. H. Bittinger.
Great Falls	Montgomery	Maj. J. G. D. Knight.	
Green Spring Furnace	Washington	E. G. Kinsell.	
Hagerstown	Washington	Prof. C. E. Carl.	
Hampstead	Carroll		H. H. Meals.
Hancock	Washington	Dr. J. S. Diehl.	
Hartly, Del	Kent		Miss C. A. Forde.
Havre de Grace	Harford		W. S. McCombs.
Jewell	Anne Arundel Co	Jos. Plummer.	
Johns Hopkins Hospital, Baltimore		W. L. Woods.	
Kenton, Del	Kent		W. S. Arthurs.
Kirkwood, Del	New Castle	J. S. Carnagy.	
La Plata	Charles	J. S. Turner	J. S. Turner.
Laurel,	Prince George's	Dr. T. M. Baldwin.	
Laurel, Del	Sussex		E. D. C. Hegeman.
Lonaconing	Allegany		J. J. Robinson.
Mardela Springs	Wicomico	A. E. Acworth	L. A. Wilson.
Marshall Hall	Charles	F. H. Deal.	
Maryland Agricultural College	Prince George's	Prof. J. H. Patterson.	
McDonogh School	Baltimore	H. Norwig.	
Middletown	Frederick		G. C. Rhoderick, Jr.
Milford, Del	Kent	J. Y. Foulk	J. Y. Foulk.
Millsboro, Del	Sussex	Rev. L. W. Wells.	
Mt. St. Mary's College	Frederick	J. A. Mitchell, Ph. D.	Jos. H. Martin.
Newark College, Del	New Castle	Prof. Wm. H. Bishop.	
Oakland	Garrett	J. Lee McComas, M. D.	J. L. McComas, M. D.
Odenton	Anne Arundel		E. B. Watts.
Oldtown	Allegany	Dr. H. C. Shipley.	
Princess Anne	Somerset	Jas. R. Stewart	L. F. Wilson.
Pocomoke City	Worcester	R. M. Stevenson	R. M. Stevenson.
Pope's Creek	Charles	George Dent.	
Receiving Reservoir, D. C		Maj. J. G. D. Knight.	
Rising Sun	Cecil		Dr. L. R. Kirk.
Salisbury	Wicomico		W. Benjamin. L. W. Gunby.
Seaford, Del	Sussex	H. L. Wallace	H. L. Wallace.
Sharpsburg	Washington	R. L. Hiberger.	
Snow Hill	Worcester		Purnell & Vincent.
Solomon's	Calvert	W. H. Marsh, M. D.	
St. Charles Coll., nr. Ellicott City	Howard	Rev. H. M. Chapuis, S. S.	
Sunnyside	Garrett	John G. Knauer.	
Sykesville	Carroll		J. S. Hyatt.
Upper Marlboro	Prince George's	J. B. Perrie.	
Washington, D. C		S. W. Beall.	
Western Port	Allegany	Prof. O. H. Bruce.	
West Friendship	Howard		Postmaster.
Westminster	Carroll	Prof. Roland Watts.	
Westover	Somerset		E. D. Long.
Wilmington, Del	New Castle	F. C. D. McKay	Wm. Lawton.
Woodsboro	Frederick		G. F. Smith.
Woodstock College	Baltimore	T. J. A. Freeman, S. J.	
Woman's College, Frederick	Frederick	Miss W. A. Lantz.	
*Birdsnest, Va	Northampton	C. R. Moore.	
*Norfolk, Va	Norfolk	Jas. J. Gray.	
*Warsaw, Va	Richmond	C. H. Constable.	

**Stations of the Virginia State Weather Service. †Whistle signals only.*

MONTHLY SUMMARY OF REPORTS FOR SEPTEMBER, 1895.

STATIONS.	COUNTIES.	Altitude above sea in ft.	Latitude.	Longitude.	TEMPERATURE.								Total Precipitation.	Total Snow-fall.	Clear Days.	Partly Cloudy Days.	Cloudy Days.	Rainy Days. (.01 in. or more)	Prevailing Winds.
					Monthly Mean.	Mean of Max.	Mean of Min.	Max.		Min.		Monthly Range.							
								Degrees	Date.	Degrees	Date.								
WESTERN MARYLAND.																			
Sunnyside[1]*	Garrett	2440	39°20′	79°21′	63.5	.....	.....	91	11	29	28	62	.47	T	21	5	4	3	S. W.
Oakland	Garrett	2380	39 24	79 18	63.6	76.4	50.9	86	20	30	28	56	.24	T	15	14	1	2	N.W.
Deer Park	Garrett	2457	39 25	79 13	64.2	79.8	48.5	90	19	27	28	63	.....	....	....	....	....	....	.....
Grantsville	Garrett	....	39 45	79 10	65.2	77.5	52.8	90	19	34	15	56	1.53	T	13	8	9	5	S.
Westernport	Allegany	....	39 28	78 2	68.8	85.8	57.8	98	19	28	30	70	.54	....	....	....	....	2	.....
Boettcherville[1]*	Allegany	....	39 39	78 48	69.8	.....	.....	100	20	40	15,28	60	.50	....	....	....	....	1	.....
Cumberland, Shriver & Rizer.	Allegany	650	39 39	78 46	.....	.....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	.....
Cumberland, E. T. Shriver.	Allegany	700	39 39	78 45	70.0	80.8	59.2	93	22, 23	45	14	48	.15	....	26	2	2	1	.....
Hancock	Washington	....	39 40	78 10	70.4	84.1	56.7	98	19	38	15	60	1.80	....	19	11	....	2	W.
Green Sp. Furnace	Washington	500	39 39	77 55	71.2	84.7	57.8	95	12, 19, 20, 23	40	30	55	2.07	....	19	9	2	3	E.
Hagerstown	Washington	....	39 39	77 43	....	.....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	.....
Sharpsburg	Washington	....	39 25	77 45	70.8	82.3	59.4	96	23	40	15	56	1.01	....	22	6	2	4	N.W.
NORTHERN-CENTRAL MD.																			
Mt. St. Mary's Col.	Frederick	720	39 43	77 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	.....
Frederick *a*	Frederick	280	39 24	77 18	70.4	81.7	59.1	96	32	42	15	54	4.87	....	10	19	....	5	.....
Woman's College	Frederick	280	39 24	77 18	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	.....
Bachman's Val.	Carroll	....	39 37	76 55	67.3	78.0	56.6	90	21, 22, 23	38	15	52	5.49	....	20	7	3	3	S.W.
Western Md. Col. Westminster.	Carroll	....	39 25	77 0	73.3	85.2	61.4	98	22	43	30	55	5.61	....	24	1	4	3	.....
McDonogh School, *a*	Baltimore	535	39 23	76 44	69.6	77.8	61.3	89	21, 22, 23	44	15	45	.....	....	....	....	....	....	.....
Woodstock Col.	Baltimore	392	39 20	76 49	68.6	79.2	57.9	92	21	40	15	52	5.54	....	15	14	1	5	S E.
Baltimore	Baltimore	179	39 17	76 36	72.2	83.3	72.3	96	21. 22	46	30	50	5.90	....	21	8	1	4	N.
Johns Hopkins Hos	Baltimore	....	39 17	76 36	72.0	81 9	62.1	97	22	45	16. 30	52	.....	....	18	8	4	....	N.
Lisbon[2]* *a*	Howard	....	.....	.....	68.2	.....	.....	93	21, 23	40	30	53	.80	....	15	13	2	4	S.W.
St. Charles Coll. nr Ellicott City.	Howard	300	39 16	76 44	73.6	80.2	67.1	93	23	50	30	43	4.21	....	24	3	3	4	N.W.
Great Falls[3]*	Montgomery	....	39 0	77 14	71.4	.....	.....	92	12, 21, 23	38	28	54	1.74	....	....	....	....	....	.....
Fallston School, [1]*	Harford	450	39 31	76 24	67.7	....	.....	93	21	43	15, 39	50	3.89	....	6	21	3	7	S.W.
Darlington Acad'ye	Harford	300	39 39	76 14	69.9	79.6	60.2	94	21	42	15	52	2.38	....	15	8	2	5	S.W.
SOUTHERN MARYLAND.																			
Jewell *d*	Anne Arund'l	....	38 44	76 36	72.5	82.2	62.8	95	11, 21, 23	44	30	51	.93	....	25	4	1	4	S. W.
Dist. Res., D. C.[5]*	.....	....	38 52	77 0	71.8	.....	.. ....	92	21	45	30	47	1.27	....	....	....	....	6	.....
Rec. Res., D. C.[5]*	.....	....	38 52	77 0	72.4	....	.....	94	23	48	30	46	1.58	....	....	....	....	6	.....
Washington, D. C.	.....	112	38 52	77 0	72.4	83.0	61.9	98	22, 23	45	30	53	1.11	....	18	11	1	5	S.
Md. Agric't. Col. College Park.	Pr. George's *a*	....	38 58	76 56	72.4	85.5	59.3	101	23	44	15, 28	57	1.81	....	....	....	....	5	.....
Laurel	Pr. George's	....	39 5	76 45	69.4	81.4	57.4	93	12, 21, 22	42	15, 30	51	2.70	....	20	8	2	4	.....
Upper Marlboro	Pr. George's	....	38 47	76 45	71.0	83.1	59.0	96	12, 21, 22, 23	42	15	54	1.28	....	23	6	1	3	S.
La Plata	Charles	....	38 32	77 0	73.5	85.6	61.4	97	21, 22	38	30	59	.50	....	....	....	....	....	.....
Solomon's	Calvert	20	38 19	76 27	75.6	85.1	66.2	98	19	50	30	48	.76	....	16	11	3	3	S. E.
Charlotte Hall Sch. *a*	St. Mary's	....	38 28	76 48	73.8	86.0	61.6	100	19	44	30	56	.31	....	18	10	1	3	S.
Cherryfields[2]*	St. Mary's	....	38 11	76 24	72.2	.....	. ....	83	12	52	30	31	1.12	....	14	16	....	3	S. E.
EASTERN MD. AND DELAWARE.																			
Chestertown	Kent	80	39 13	76 4	.....	.....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	.....
Denton	Caroline	42	38 47	75 41	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	.....
Easton	Talbot	35	38 42	76 6	71.6	82.0	61.2	93	12, 21, 22	43	16	50	2.49	....	23	4	3	3	S. W.
Mardela Spr.	Wicomico	25	38 30	75 39	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	.....
Princess Anne	Somerset	....	38 10	75 35	71 6	83.4	59.7	96	21, 22, 23	39	16	57	.92	...	12	17	1	5	S. W.
Pocomoke City	Worcester	37	38 5	75 34	73.6	83.4	63.9	96	21, 22	46	16	50	3.17	...	19	10	1	5	S.
Wilmington, Del.	Newcastle	115	39 44	75 33	72.8	83.5	62.2	98	22, 23	41	30	57	.93	...	16	12	2	6	S. W.
Newark, Delaware College, Del.	Newcastle	....	39 40	75 37	70.4	80.4	59.5	97	21, 22	39	15	58	.88	...	15	13	2	5	S. W. E.
Kirkwood, Del.[2]* *d*	Newcastle	....	39 35	75 41	68.8	.....	.....	92	21	48	30	44	.....	....	....	....	....	....	.....
Dover, Del.	Kent	40	39 10	75 30	70.4	78.6	62.2	91	21	45	15	46	2.23	....	23	6	1	4	W.
Milford, Del	Kent	....	38 45	75 25	73.7	84.5	62.9	99	22, 23	41	16	58	2.96	....	24	4	2	3	S. W.
Seaford, Del.	Sussex	....	38 40	75 35	71.3	81.4	61.2	93	12, 21, 22	44	15	49	2.62	....	....	....	....	3	.....
Millsboro, Del.	Sussex	....	38 44	75 15	71.2	80.9	61.5	95	23	43	16	52	1.89	....	19	9	2	4	N.
PENNSYLVANIA.																			
Philadelphia	.....	....	.....	.. ...	72.4	81.6	63.1	97	21, 22, 23	45	15	52	.61	....	14	12	4	7	S. W.
VIRGINIA.																			
Norfolk	.....	...	.....	.....	76.6	84.6	68.5	100	19, 23	54	16	46	.19	....	23	7	....	3	S. E.
Warsaw	Richmond	....	.....	.....	.....	....	.....	.....	.....	.....	.....	.....	.....	....	.....	.....	.....	.....	.....
Bird's Nest[1]*	.....	....	.....	.....	75.2	.....	.....	100	19	50	16	50	1.70	....	12	14	4	4	S. W.
AVERAGES: Western Maryland		....	.....	.....	67.8	81.4	55.4	....	.....	....	.....	58.6	.92	....	19.3	7.8	2.8	2.6	N.W
AVERAGES: Northern-Cent'l Md.		....	.....	.....	70.4	78.5	62.0	...	.....	...	.....	51.0	4.04	....	16.8	10.2	2.6	4.4	S. W.
AVERAGES: Southern Maryland		....	.....	.....	72.5	84.0	61.2	...	.....	....	.....	50.2	1.21	....	19.1	9.4	1.2	4.2	S.
AVERAGES: East. Md. and Del.		....	.....	.....	71.5	82.0	61.6	....	.....	..	.....	52.1	2.01	....	18.9	9.4	1.8	4.2	S. W.
AVERAGES: Entire territory		....	.. ..	.....	70.6	81.5	60.0	....	.....	....	.....	53.2	2.04	....	18.5	9.2	2.1	3.8	S. W.

* Extremes of temperature from observed readings of dry thermometer. A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:
[1] Mean of 7 a. m. + 2 p. m. + 9 p. m. + 4. [2] Mean of 8 a. m. + 8 p. m. + 2. [3] Mean of 7 a. m. + 2 p. m. + 2.
The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers. Letters of the alphabet are used to denote the number of days that are missing from record; for instance, "a" denotes 1 day missing. An italic letter following the name of a station indicates that two or more observers, as the case may be, are reporting from the same station. ‡ Omitted in computing averages. †Received after report had gone to press and therefore omitted in computing averages and in preparing map. § Received too late to be included in averages.