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U. S. DEPARTMENT OF AGRICULTURE.

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REPORT FOR NOVEMBER, 1900.

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MARYLAND AND DELAWARE SECTION

OF THE

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

IN COÖPERATION WITH THE

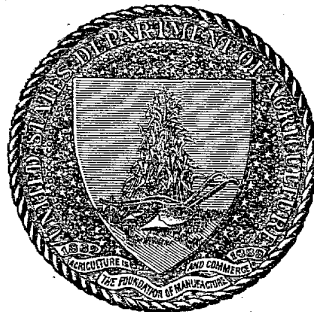
MARYLAND STATE WEATHER SERVICE.

(Prof. Wm. B. Clark, Director; Prof. Milton Whitney, Secretary and Treasurer.)

PREPARED UNDER DIRECTION OF  
WILLIS L. MOORE,  
CHIEF OF WEATHER BUREAU.

BY

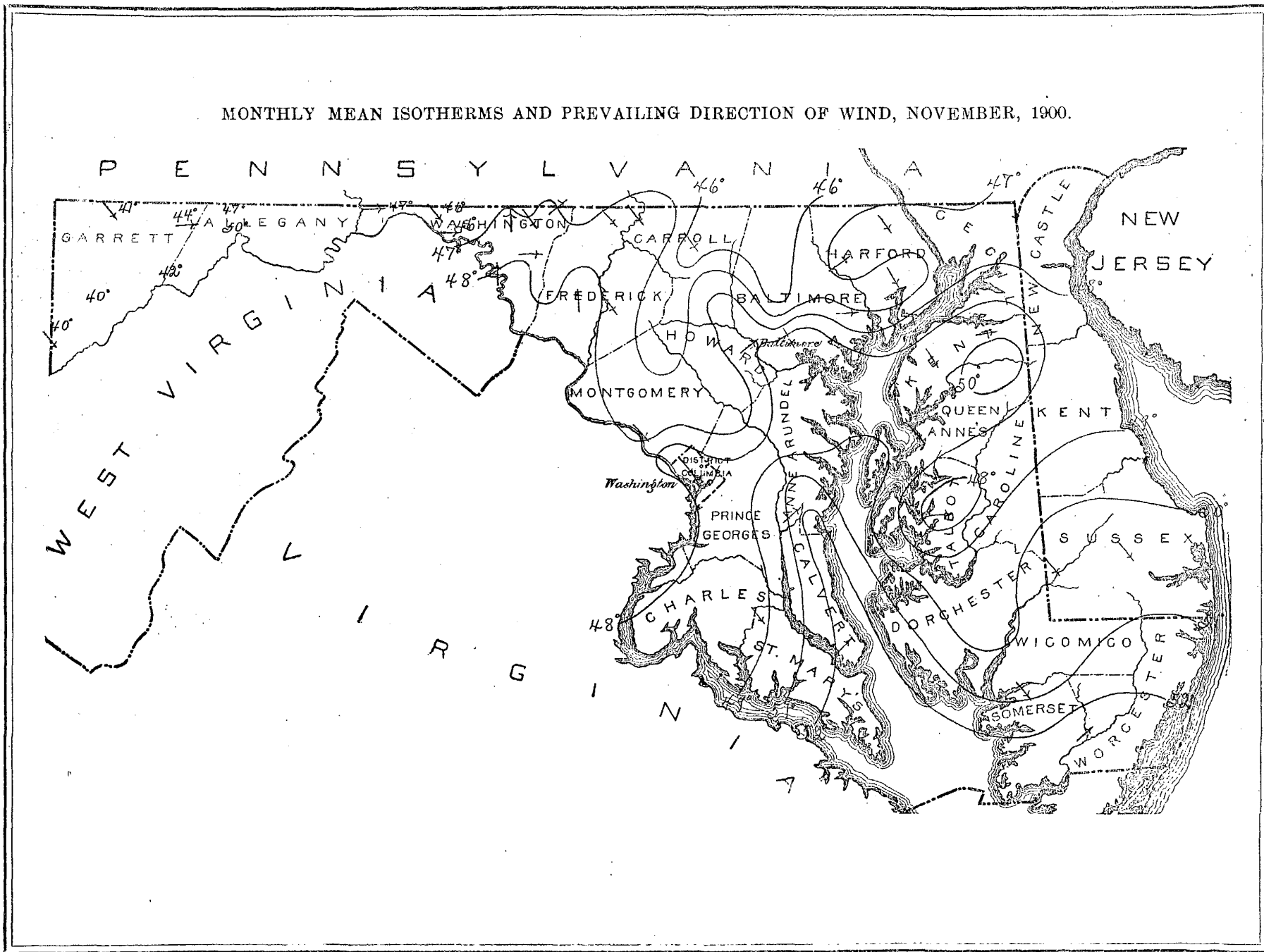
OLIVER L. FASSIG,  
SECTION DIRECTOR.



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

1900.

MONTHLY MEAN ISOTHERMS AND PREVAILING DIRECTION OF WIND, NOVEMBER, 1900.



U. S. DEPARTMENT OF AGRICULTURE,

# CLIMATE AND CROP SERVICE

OF THE

## WEATHER BUREAU.

CENTRAL OFFICE: WASHINGTON, D. C.

MARYLAND AND DELAWARE SECTION,

OLIVER L. FASSIG, Section Director.

Vol. V.

BALTIMORE, MD.

No. 11.

The Climate of Allegany County, Md.\* Allegany County is particularly fortunate in the possession of a long series of valuable observations of climatic conditions. One of the first objects to claim the attention of Prof. Joseph Henry, after the establishment of the Smithsonian Institution in 1849, was the organization of an extensive network of stations for recording weather conditions, and collecting facts for the study of American storms. Professor Henry soon succeeded in enlisting the services of a devoted body of intelligent observers. Among the early and faithful members of this system was Mr. Edwin Thomas Shriver of Cumberland. Mr. Shriver began the daily reading of the thermometer, and his observations of wind and weather, in January of 1859. With splendid persistence, and with the true spirit of devotion to science, he continued his daily observations uninterruptedly for thirty-seven years. In 1871 the measurement of rainfall was added to his record. The last report of Mr. Shriver, for January, 1896, made a month before his death, was as complete as those of his early days. Few individual records of the weather in this country can compare with those of Mr. Shriver in completeness and continuity. But two records in Maryland are longer. Frederick has a continuous record from about 1821, but made by numerous observers; Baltimore has a record, though not entirely continuous and made under different auspices, beginning in 1817. To Cumberland belongs the distinction of having the longest continuous record in Maryland made by a single observer.

Allegany County is in the heart of the Alleghany mountain system; its surface is made up of parallel ranges rising in places to elevations of nearly 3,000 feet, and extending northeast and southwest. The valleys are narrow. The population of the county is mostly in the valleys, largely along the Potomac River, at elevations varying between 700 feet and 1,000 feet above sea-level. Cumberland, Boetcherville, Westernport, Flintstone, and Oldtown are all under 1,000 feet elevation and have approximately similar climatic conditions. The annual and monthly values for temperature and rainfall at all these stations, as shown by accompanying tables, agree very closely with the normal values obtained from Mr. Shriver's long record for Cumberland, after making due allowance for the short periods of observation. The

\*From Maryland Geological Survey—Allegany County—pages 217-231.

climate of Cumberland represents very well the climate of the valleys of Allegany County.

**Temperature.** The climatic factor of most concern to us, viewed from the standpoint of personal comfort, is the variability of the temperature in our vicinity. In tables and diagrams here presented, may be found the average annual and monthly values for all stations established in Allegany County, the mean daily variation, the mean monthly variation, and the absolute extremes of temperature. In Figure 2 may be found the results of Mr. E. T. Shriver's extremely valuable record of the temperature at Cumberland for thirty-seven years. The normal mean temperature for the year is 51.5°; the annual average has varied between the limits of 49.1°, in 1867, and 54.6°, in 1893. The mean monthly temperatures have a range varying from 18° during the winter months to less than 10° during the summer months. January is the month of greatest variation, with February a close second, while August is decidedly the month of least variation.

TABLE I.—TEMPERATURE DATA—ALLEGANY COUNTY.

| Station.            | January. | February. | March. | April. | May.  | June. | July. | August. | September. | October. | November. | December. | Annual. | Number of years. | Average daily range. | Average monthly range. | Absolute maximum. | Absolute minimum. | Absolute range. |
|---------------------|----------|-----------|--------|--------|-------|-------|-------|---------|------------|----------|-----------|-----------|---------|------------------|----------------------|------------------------|-------------------|-------------------|-----------------|
| Cumberland (a)..... | 30.8     | 32.2      | 38.0   | 50.3   | 60.9  | 70.1  | 73.1  | 71.1    | 64.2       | 52.3     | 41.4      | 33.5      | 51.5    | 37               | .....                | .....                  | .....             | .....             | .....           |
| Cumberland (b)..... | 34.4     | 35.2      | 43.0   | 55.1   | 65.1  | 73.8  | 76.1  | 74.0    | 67.8       | 54.7     | 44.8      | 38.0      | 55.2    | 10               | .....                | .....                  | 103               | -12               | 115             |
| Boetcherville.....  | 28.7     | 30.4      | 40.2   | 50.6   | 62.3  | 71.3  | 73.6  | 71.4    | 65.0       | 51.7     | 41.0      | 35.0      | 51.8    | 8                | .....                | 58                     | 109               | -19               | 128             |
| Westernport.....    | 28.4     | 28.0      | 38.4   | 51.6   | 62.7  | 71.0  | 74.6  | 72.0    | 67.0       | 51.0     | 41.4      | 32.1      | 51.5    | 5                | 24                   | 58                     | 107               | -13               | 120             |
| Flintstone.....     | 30.3     | 32.9      | 40.3   | 52.3   | 62.3  | 69.1  | 74.0  | 69.7    | 63.5       | 50.9     | 47.4      | 33.4      | 52.0    | 2                | 25                   | 60                     | 98                | -12               | 110             |
| Frostburg*.....     | 30.8     | 25.8      | 37.9   | 53.4   | 62.0  | 69.5  | 72.0  | 72.2    | 64.0       | 51.5     | 37.6      | 31.7      | 50.7    | 1                | 21                   | 56                     | 94                | -22               | 116             |
| Mount Savage.....   | 30.6     | 26.3      | 40.2   | 51.9   | 61.6  | 64.2  | 69.5  | 70.7    | 65.4       | 51.7     | 44.3      | 32.9      | 50.8    | 1                | .....                | .....                  | 94                | .....             | .....           |
| Cumberland (a)..... | .....    | .....     | .....  | .....  | ..... | ..... | ..... | .....   | .....      | .....    | .....     | .....     | .....   | .....            | .....                | .....                  | .....             | .....             | .....           |
| Cumberland (b)..... | 30.6     | 31.7      | 39.9   | 51.9   | 62.8  | 71.6  | 74.4  | 72.2    | 66.0       | 52.4     | 42.2      | 34.6      | 52.5    | .....            | .....                | .....                  | 109               | -19               | 128             |
| Boetcherville.....  | .....    | .....     | .....  | .....  | ..... | ..... | ..... | .....   | .....      | .....    | .....     | .....     | .....   | .....            | .....                | .....                  | .....             | .....             | .....           |
| Westernport.....    | .....    | .....     | .....  | .....  | ..... | ..... | ..... | .....   | .....      | .....    | .....     | .....     | .....   | .....            | .....                | .....                  | .....             | .....             | .....           |

\*From September, 1896, to August, 1899.

Table I presents the mean monthly and annual temperatures for each station in Allegany County at which observations have been made during a period of one year or more. The average daily range, the average monthly range, and the absolute maximum and minimum values are also shown. In the valleys the average daily range of temperature is about 24°, at Frostburg the average daily range is but 21°.

The highest temperature ever officially recorded in Allegany County, and also in the State of Maryland, is 109°, the maximum of July 3, 1898, reported by Mr. F. F. Brown, of Boettcherville, near Cumberland. On the 13th of February of the following year a temperature of -22° Fahrenheit was reported from Frostburg, the lowest officially recorded within the limits of Allegany County.

(To be concluded in December Report.)

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#### CLIMATE AND CROP CONDITIONS.

November temperatures were mild, as a whole, and the month was rather dry. Good rains fell in the western counties on the 25th and 26th, relieving drought conditions there, but the amounts were only moderate at that time in the northern districts and were still lighter farther south. Rains were also fairly general on the 3d, 8th to 9th, and 20th to 24th. The first snow fall of the season occurred on the night of the 8th and extended over the greater part of the Section, although nothing but light flurries were observed in the southern and eastern districts. Several inches fell in parts of Western Maryland, and on later dates when rain fell in other localities the precipitation turned to snow in the mountains of Garrett County. High winds were reported on the 9th, 21st, and 22d. Some damage occurred on the 21st to roofs and wires at Westernport, and on the 22d a heavy storm in the vicinity of Huyett and Clear Spring (Washington County) unroofed several barns, blew down a number of trees, and scattered corn and fodder that had been left in the fields.

The truck growth that continued into early November in some of the southern counties gradually succumbed to the advance of winter, and by the middle of the month the killing frosts had cut down garden products in all districts. Winter grain and grasses were favored during the month, although seeding was not over in some of the eastern and southern counties until about the 25th. Farther north much better progress had been made, and some of the very early wheat had begun to joint and was kept down to a normal state of growth by grazing. Generally in the early fields the crop was of good color, well stooled, and presented a heavily matted growth. The Hessian fly had been observed in most counties, but the damage thus far was thought to be light. Some late-seeded rye was not up on the 25th, but the early fields of both rye and barley appeared to be in first-class condition. Corn was practically all husked and housed, the yield turning out better than anticipated in some districts.

\* \*

#### ERRATA.

October, 1900, Report: Page 5.—Mean temperature at Cumberland, 63.6, should read 64.0. Page 6.—Maximum temperature at Cumberland on the 31st, 63, should read 85; minimum temperature on 31st, blank, should read 61; mean maximum temperature, 72.5, should read 73.2; mean minimum temperature, 51.6, should read 54.8. The maximum temperature values from the 16th to the 25th, at Frostburg, are approximate, and should have been omitted from the table.

#### CLIMATOLOGY OF THE MONTH.

##### ATMOSPHERIC PRESSURE.

Monthly mean at Washington, D. C., 30.08 inches; at Baltimore, 30.06 inches; average, 30.07 inches; highest, 30.66 inches, at Washington, D. C., on the 16th; lowest, 29.32 inches, at Baltimore, on the 26th.

##### TEMPERATURE.

The monthly mean (entire territory), 47.7°, is 3.4° above the normal.

The highest monthly mean was 52.8°, at Solomons.

The lowest monthly mean was 39.6°, at Deer Park.

The highest temperature recorded during the month was 81°, at Cumberland, on the 21st.

The lowest temperature recorded during the month was 4°, at Deer Park, on the 16th.

The greatest local monthly range was 70°, at Sunnyside.

The least local monthly range was 43°, at Mount St. Mary's College.

The greatest daily range was 44°, at Bachman's Valley, on the 18th.

The least daily range was 1°, at Chase, on the 26th.

##### PRECIPITATION, in inches and hundredths.

The monthly average (entire territory) 2.97, was 0.28 below the normal.

The greatest amount was 6.52, at Sunnyside.

The least amount was 1.08, at St. Charles College.

The greatest amount in twenty-four hours was 3.38, at Pocomoke City, on the 3d-4th.

The average number of rainy days, 8.

##### WIND.

The prevailing direction was from the northwest.

The total movement was 3,722 miles, at Baltimore, and 5,680 miles, at Washington, D. C.

The maximum wind velocity was 39 miles per hour from the west, at Washington, D. C., on the 9th.

##### MISCELLANEOUS PHENOMENA.

*Killing Frost.*—Baltimore, 16; Boonsboro, 6, 15, 16; Charlotte Hall, 14, 15, 16, 17; Chase, 15, 28; Chestertown, 14, 15, 16, 17, 27, 28, 30; Chewsville, 4, 13, 14; Clear Spring, 16; Easton, 15, 17; Fallston, 10; Frostburg, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16; Green Spring Furnace, 15, 16, 17; Hagerstown, 5, 15; Laurel, 5, 6, 7; Mount St. Mary's College, 14; New Market, 5, 6; Princess Anne, 6, 7, 10, 11, 12, 13, 16, 17; Queenstown, 14, 30; Rock Hall, 12, 15, 16, 28; Sharpsburg, 5, 6, 15, 16; Solomons, 17; Taneytown, 6, 15, 16.

*Hail.*—Takoma Park, 7; Washington, D. C., 8.

*Thunderstorms.*—Bachman's Valley, 25; Baltimore, 8, 26; Boettcherville, 23, 25; Charlotte Hall, 8; Chestertown, 8, 25; Easton, Jewell, New Market, Queenstown, Rock Hall, Solomons, Takoma Park, Van Bibber, Woodstock, 7; Fallston, 8, 26; Frostburg, 25; Grantsville, 20; Laurel, 7, 26; Millsboro, Del., 25; Sunnyside, 20, 23; Taneytown, Western Maryland College, 25; Washington, D. C., 8.

*Parhelia.*—Solomons, 15.

*Solar Halo.*—Solomons, 17.

*Lunar Halo.*—Baltimore, 2, 7; Clear Spring, 3; Jewell, 2, 6; Taneytown, 2, 7; Washington, D. C., 2, 3, 7.

*Lunar Corona.*—Millsboro, Del., 23, 29; Solomons, 6.

*Dense Fog.*—Baltimore, 25; Clear Spring, 24; Hagerstown, 25; Harney, 2; Jewell, 25; New Market, 24, 25; Queenstown, 25; Taneytown, 2.

*Aurora.*—Rock Hall, 21, at 8 p. m.

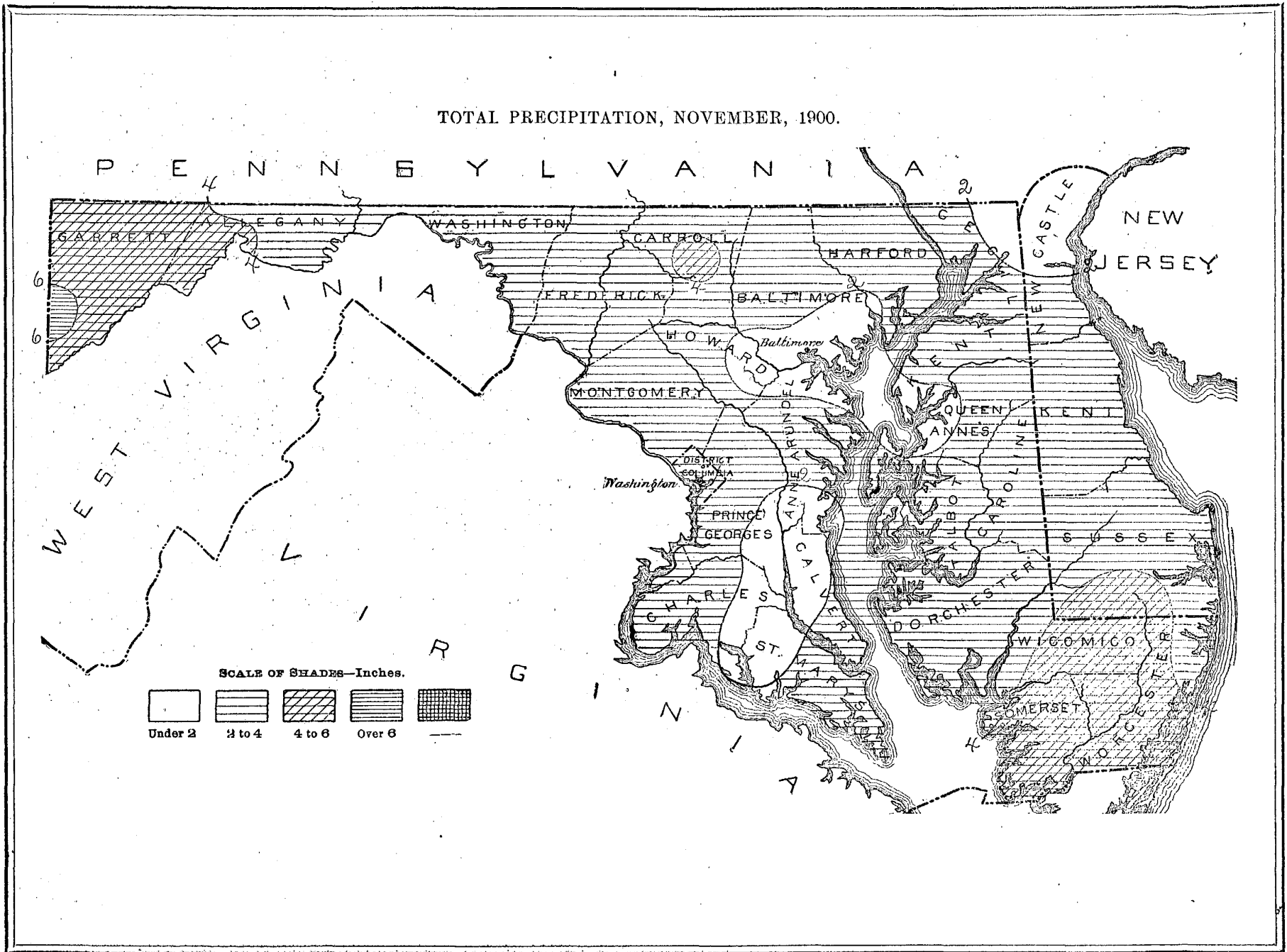
Climatological data for Maryland and Delaware, November, 1900.

Table with columns: Stations, Counties, Elevation, Length of record, Temperature (Mean, Departure from normal, Highest, Date, Lowest, Date, Greatest daily range), Precipitation (Total, Departure from normal, Greatest in 24 hours, Total snowfall, Number rainy days, Number clear days, Number partly cloudy days, Number cloudy days), Prevailing direction of wind, Observers. Rows include Western Maryland, Northern-Cen. Md., Southern Maryland, Eastern Maryland, and Delaware.

NOTE.—All records are used in determining State or district means, but State and district departures are determined by comparison of current data of only such stations as have normals. Letters of the alphabet indicate the number of days missing. † Mean of 7 a. m. + 2 p. m. + 2. † Incomplete record. Not included in means. ‡ On other dates also.



TOTAL PRECIPITATION, NOVEMBER, 1900.



SCALE OF SHADES—Inches.

